



**STATUS QUO REPORT**

**Researching The 'Now': Cultural Heritage Sector's Current Status Quo**

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## TITLE

Status Quo Report: Researching The ‘Now’: Cultural Heritage Sector’s Current Status Quo

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## CONSORTIUM

The Cultural Heritage Project 2.0: Business Model Evolution, an Erasmus+ project (2021-1-IT02-KA220-HED-000032050) is designed to support Higher Education Institutions to effectively assist the regeneration of the European cultural heritage sector in a highly digitised (post-Covid-19) world, through Cultural Organisations' business models evolution. The project also aims to provide Higher Education's academic staff and educators with the knowledge, skills and resources relevant to the future to support the sector. This publication is part of the project's first deliverables and outcomes (Project Results 1; PR1), next to a 1. "Future of Cultural Heritage Sector Scenarios" Book, 2. Good Practice Cases Collection and 3. Competencies Gap Map; all accessible through the [project's website](#).

Our partnership consists of 6 organisations from 5 countries, all with a direct interest in using the project's results to (1) drive university-cultural heritage organisations' collaboration, (2) contribute to revitalisation of the cultural heritage sector and (3) increase their contribution to society. The partners have been selected based on their diversity of knowledge and experience in social sciences and humanities, institutional commitment to external engagement, and strong networks with cultural heritage organisations.



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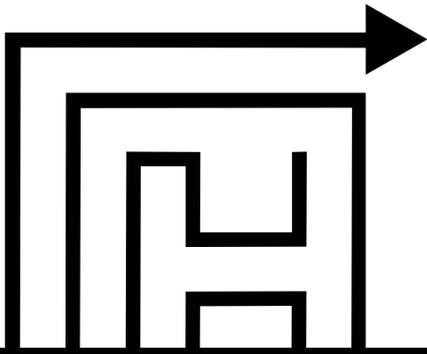
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# 01 | INTRODUCTION

## 1.1 What is the Status Quo Report?

As part of the Cultural Heritage 2.0 project's conceptualisation and development of the Future of Cultural Heritage Sector Scenarios (Result 1; PR1) and the Horizon Scanning research phase (i.e., find the complete methodology in the "The Future of Cultural Heritage Sector Scenarios" [Book](#), Methodology chapter). The consortium partners conducted desk research to investigate the cultural heritage (CH) sector's current status quo in a highly digitalised, post-COVID-19 world and highlight **I.** the sector's challenges and needs both from a European and a regional perspective, **II.** the cultural heritage organisations' (CHOs) staff and leadership's competency gaps, but also **III.** higher education institutions (HEI) academic staff and educators' competency gaps to support the cultural heritage sector leaders and staff's competency gaps, **IV.** the cooperation potential between HEIs and CHOs, and higher education institutions (HEI) academic staff and educators, **V.** recommendations to CHOs staff and leadership.

The Status Quo report can inform and ground the work of the project's Digital Student Consultancy Approach Course (Result 2; PR2). PR2 will cover the development of a comprehensive pedagogy and set of open educational resources. These resources will support HEI academic staff and educators to develop and deliver successful student consultancy projects and problem-based learning interventions with real-life practical examples of sectoral transformation from their local and regional CHOs.

## 1.2 Who the Status Quo Report is for?

The Report Quo report Gap Map has a two-pronged audience:

- I. **HEI academic staff and educators** who engage in collaboration with CHOs and equip HEIs academic staff and educators with the knowledge, skills and resources to engage with CH sector representatives in educational activities and
- II. **CHOs' staff and leadership** aim to develop strategies for the CHOs' digital transformation and redefinition their business models.

## 1.3 Definition of CH

Europe's heritage is a rich and diverse mosaic of cultural and creative expressions, a humbling inheritance from previous generations and a legacy for future generations to safeguard and learn from. The Cultural Heritage 2.0 project uses the European Commission's (2020) definition for the CH sector, which divides CH into three categories; i., tangible, ii. intangible, and iii. digital CH.

**Tangible CH**, includes concrete monuments, works of art, and artefacts. This can be divided into two main subcategories: **I. (national) treasures**, including tangible CH of significant value, such as historic architecture, classical records, ancient books and documents, paintings, sculpture, handicraft, and archaeological materials and armoury, and **II. historical sites/monuments**, including places and facilities of great historical and academic values that are especially commemorable, e.g., prehistoric sites, fortresses, ancient tombs, kiln sites, dolmens, temple sites and shell mounds.

**Intangible CH** consists of folklore, traditions, language, and knowledge and can be approached through two main subcategories: **I. (national) intangible treasures**, covering intangible CH, such as drama, music, dance and craftsmanship, carrying great historical, artistic or academic value, and **II. (national) folklore CH**: clothing,

implements and household items used for daily life and businesses, transportation and communications, entertainment and social life, and religious or annual events that are significant for the understanding of the transition in people's lifestyles and more.

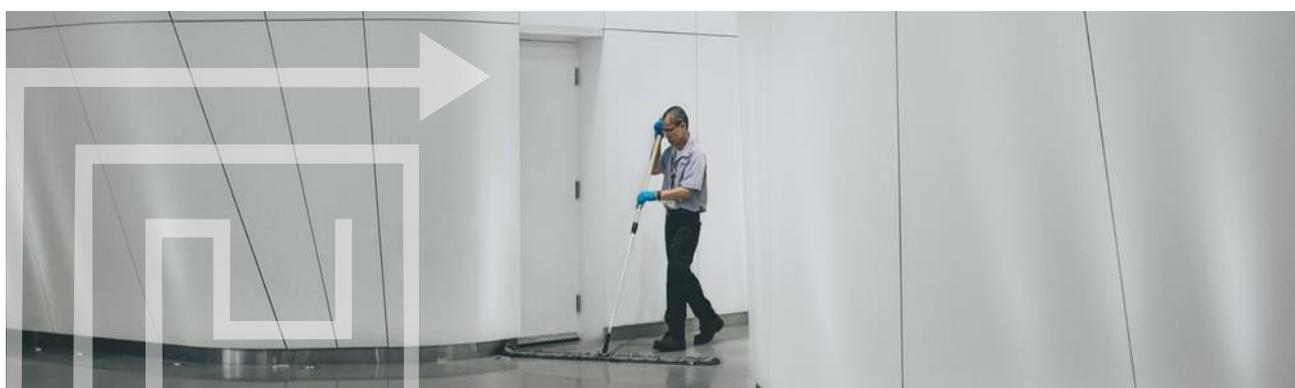
Finally, **digital CH**, consists of different digital media formats that serve to comprehend and preserve cultural heritage. Depending on the source of the heritage they encapsulate, digital cultural heritage can be divided into two main categories, **I. born-digital** material, covering software, digital documents, digital art and harvested web content, and **II. digitised** material, including scanned and digitised physical and cultural assets, such as sites, buildings, virtual collections and libraries/archives.

CULTURAL  
HERITAGE



## 02 | CHALLENGES & NEEDS FROM A EUROPEAN PERSPECTIVE

The Covid-19 pandemic and the measures to contain it have taken a considerable toll on all aspects of the European living environment, including the CH world. Since the outbreak of the pandemic, Europa Nostra has been working to identify specific impacts of the crisis on cultural heritage European sites and stakeholders (Europa Nostra, 2020). Europa Nostra's consultation focused on obtaining in-depth qualitative data from a representative sample of member and associate CHOs. The consultation's results revealed **six main categories of both immediate and medium-to-long challenges** and needs for the CH sector from a European perspective, which will be elaborated on below: **I.** Challenges for personnel and security of jobs; **II.** Challenges to the security of heritage sites, contents and visitors; **III.** Socioeconomic challenges; **IV.** Cultural challenges; **V.** Financial challenges, and **VI.** Ensuring proper communication and keeping networks alive challenges.



### I. Challenges for personnel and security of jobs

Employment in the cultural heritage sector is particularly vulnerable due to the prevalence of micro-organisations, NGOs and not-for-profits, self-employed, freelancers, and volunteers.

In the short term, the COVID-19 crisis may affect about **7.3 million cultural and creative jobs** across the EU. Of this number, over 30% are self-employed and lack adequate social protection (Culture Action Europe, 2020). In many CHOs, professionals in managerial positions, e.g., directors, communication and project managers, have worked remotely even during the lockdown. However, this was not the case for the staff dealing directly with the public or in maintenance and restoration works at heritage sites. In

addition, many conservation and restoration professionals had to take **unpaid holidays** as projects in museums and monuments were suspended, and budgets had significantly shrunk. Many museums have also put their **contracts with freelancers on hold**, creating an uncertain situation for freelancers and temporary workers (Europa Nostra, 2020).

Regarding more long-term challenges, heritage networks, contributing significantly to the organisation and representation of the sector at the European national level, are at **risk of collapse** (Europa Nostra, 2020).



## II. Challenges to the security of heritage sites, contents and visitors

The COVID-19 pandemic has brought to light the need for risk preparedness in the event of health disasters and man-made and natural hazards. The pandemic-induced difficulty in **maintaining measures around the security and preservation** of collections has raised concerns in several UNESCO member States' museums (UNESCO, 2021).

During the lockdown, heritage sites worldwide **closed indefinitely** for both their staff and visitors. In some cases, staff could still work remotely, but this created major challenges in ensuring proper security for the sites and their contents. In addition, some heritage sites faced **risks of decay**, i.e., unattended open spaces where maintenance works were suspended (Europa Nostra, 2020). In a few cases, some European governments have been tempted to use the COVID-19 "opportunity"

to advance controversial plans relating to iconic heritage sites. That would entail, for example, **demolishing endangered CH sites** and not preserving buildings to replace them with new constructions (Europa Nostra, 2020). The crisis has also been **hindering the post-disaster reconstruction of CH sites**. For example, following the devastating earthquake in Zagreb, Croatia, on the morning of 22 March 2020, cross-border mobility of experts was impossible due to the travel bans (Europa Nostra).

In the long term, it will be necessary to **review the safety rules** regarding public access to heritage sites. New routes should be created by giving alternative entrances to museum structures, while emergency exits, access stairs and other spaces need to be in line with new rules of social distancing in public areas (Europa Nostra, 2020).



## III. Socioeconomic challenges

In addition to posing a critical threat to public health, the COVID-19 pandemic has also posed severe social challenges, with a latent risk of broadening social inequalities among individuals

and countries. The crisis has led to an **essential loss of human and social capital** in the heritage sector, as volunteers - who are numerous in the field – had to stop their activities.

In rural areas, where cultural participation relies primarily on physical attendance, **outreach programmes were suspended**, and **social links were significantly weakened**. The quarantine period also prevented people's direct relationship with the territory, isolating the most distant locations far from communication and information exchange circuits. With the lockdown-imposed travel bans, international knowledge exchange and networking have also slowed down during the past two years (Europa Nostra, 2020).

If not adequately addressed through pertinent policies, the social crisis created by the COVID-19 pandemic may **increase inequality and exclusion in culture** and education both in the medium and long term. **Cultural events will be vital for people's mental and social recovery** after the pandemic. The benefit of positive, interactive and exciting events following a period of isolation will be extremely important (Europa Nostra, 2020).



#### IV. Cultural challenges

As cultural and heritage ecosystems rely on audiences, visitors and participation, these sectors have been heavily affected by the emergency measures to contain the pandemic. The sudden **interruption of traditional museums' educational activities** (e.g., school visits, guided tours, workshops) due to the pandemic was a painful experience for schools. **Museum attendance has fallen sharply** in all UNESCO Member States. Even for institutions that remained open with sanitary measures in place, the drastic **decrease in world tourism** resulted in a drop in attendance of 70%. The digital divide between regions and heritage organisations (e.g., smaller vs bigger) has been a significant obstacle to fulfilling the educational function of museums in the context of the lockdown (UNESCO, 2021). It can also lead to a worrying lack of diversity in cultural and heritage content (for example, crafts museums tend to be smaller and have less budget for digital tools). Many heritage actors in rural areas did not have the necessary digital skills to stay active during the

lockdown (Europa Nostra, 2020). In a survey conducted by MuseumNext, a leading network for museum leaders, 16% of the respondents (17,500 people) believed that a **lack of in-house digital skills made running museums difficult**, and 13.2% of respondents highlighted a **lack of knowledge regarding digital platforms and marketing as a significant challenge**. Moreover, 14% of the survey respondents said that a **lack of resources presented further struggles**, while another 14% highlighted that the staff shortage made working conditions increasingly difficult (MuseumNext, 2021). Another important implication of the pandemic relates to intangible heritage. The festivals and ceremonies related to spring, for example, whose cultural value is guaranteed by their cyclical renewal, were suspended (Europa Nostra, 2020). Finally, **lending and borrowing artworks among museums were suspended** due to the closing of international borders (Europa Nostra, 2020).



## V. Financial challenges

The pandemic has led to general economic difficulty, with the European Commission recognising in 2020 that the European economy was expected to shrink by more than 7%.

Economic damage is proving gravely serious for the CH sector in the short term. Responding to the 2020 UNESCO survey report, 83% of UNESCO's Member States **took measures to close museums in 2020**, either totally or partially, with the average closure time being over 150 days, and 43% of museums faced closures in the first quarter of 2021. Based on estimates from the survey's results, in 2020, the **revenues of museum institutions have decreased** between 40% and 60% compared to the revenues from 2019, **public subsidies for national museum institutions have also decreased** (UNESCO, 2021), and tourism, the third economic sector in the EU, has been severely hit (Europa Nostra, 2020). Moreover, **sponsors have been withdrawing their funds** and offering them to other social, medical and economic causes (Europa Nostra, 2020).

In the long run, the **financial sustainability of many heritage organisations is threatened**. Due to the COVID-19 crisis and the drastic decrease in both the number of museum visitors and the revenue they bring, museums have felt the need to seek support outside the market – from public authorities on the one hand and from the residents of their respective locales, on the other (UNESCO, 2021). Public authorities ought to act to financially support CHOs in this difficult period and prepare for the future (UNESCO, 2021). However, the

coming years **will undoubtedly see budgetary cuts in the public sector. Public funding for culture and heritage might dry up** with other urgent social needs attracting the funds instead (Europa Nostra, 2020).

On 9 April 2020, the Ministers of Finance of the Eurogroup welcomed the Commission's intention to adapt its current EU multiannual financial framework (MFF 2021-2027) proposal to reflect the impact of the crisis and the size of the challenges ahead, by setting priorities to ensure cohesion within the EU through solidarity, fairness and responsibility. Thereby, the European Cultural Foundation and Culture Action Europe urge the European Parliament, European Commission, and the EU Member States to recognise cultural and creative sectors as an integral part of the economic, social and environmental recovery plan for Europe within the MFF and to **support these sectors with at least 7% of the Recovery Fund over the first programming years** (Culture Action Europe, 2020). Moreover, **matching public and private resources for a more significant impact can help to pave the way toward rebuilding the world after COVID-19**. New cooperation models and innovative financial tools must be developed for European philanthropy to unfold and serve Europe in partnership with the European institutions, the Member States and civil society actors (Culture Action Europe, 2020).

Moving forward, the crises will **differ significantly from one country to the other**, as heritage actors

receive different levels of support from National Ministries, with a risk of widening the already existent gap between cultural ecosystems in EU countries. Moreover, an important part of the annual budgets of heritage and cultural institutions

is **retrieved from selling tickets**. This economic loss will probably be evident in a scarcity of cultural activities in the year to come (Europa Nostra, 2020).



## VI. Ensuring proper communication and keeping networks alive challenges

Throughout the COVID-19 crisis, often **heritage staff**, given the dependency of CHOs on public subsidies, **cannot plan for the long-term future** and are generally waiting for government regulations, which, in the function of the yet unknown reality, tend to change often. This unclear situation is challenging to communicate future plans to staff, volunteers and the audiences (Europa Nostra, 2020).

During the pandemic, faced with closing their physical sites, many CHOs and CH sites **were not sufficiently prepared to work remotely** (e.g., due to lack of full access to files, lack of experience in facilitating home-office in the past, etc.). Nonetheless, many CHOs have seized this occasion to **reengage with their audiences and reach out to new ones through creative and innovative digital solutions** such as virtual exhibitions, free online content, social media challenges, concerts, or webinars. These initiatives required CHOs to re-

organise their staff's responsibilities to ensure the development of online activities. CHOs often require capacity building in order to take on duties for which they have not been trained. However, this also creates an immense playground for testing new methods and developing online tools (Europa Nostra, 2020).

In the future, it is very likely that **digital tools will have a lasting effect** on how CHOs work and engage with their audiences and upskill their staff. In fact, many CHOs have been exploring **how to streamline the effects of teleworking into their future work under "normal" conditions**. Such practices may have a lasting impact after the pandemic, as well as a much-needed contribution to climate action (e.g., more video conferences instead of physical meetings, less printing, travelling only when strictly necessary, etc.) (Europa Nostra, 2020).

## Summary of Challenges and Needs from a European Perspective

The main threats to CHOs are related to **the decrease in revenue** and its **impact on the organisation of the CH sector**

in general, as well as to the overall consequences of the crisis on the conservation or security measures of the institutions, and their relations with the public.

Regarding the **impact of the crisis on the CHOs' surrounding communities**: there is an awareness of the impact of closures and drop in attendance on the surrounding communities, on wage cuts and job losses (one third of responses), and overall on all jobs linked to the tourism sector and heritage-related activities which are all suffering from the crisis in the long term.

There is a need to provide platforms for the CH sector to continue the dialogue **on the impacts of COVID-19** and to **ensure cooperation between CHOs at an international level**.



## 03 | CHALLENGES AND NEEDS FROM REGIONAL PERSPECTIVES

In this section, the consortium's six organisations describe the CH sector's challenges and needs from the regional perspectives of their countries; Ca' Foscari University of Venice gives an overview of the CHOs' status quo in Italy, University of Copenhagen of Denmark, University of Vienna of Austria, and Momentum of Ireland, respectively.



### 3.1 CHOs' status quo in Italy

#### Introduction

While the pandemic appears to be coming to an end, it leaves many consequences in its wake. The containment measures and lockdowns each country had to put in place for civilian protection translated into massive shutdowns for the cultural and creative sectors.

In our society, cultural and creative industries play an important role as drivers of innovation in local development contexts. CHOs also represent places where the community can meet and learn through the experiences the organisations offer. The crisis generated by COVID-19 has elicited an immediate reaction from CH institutions who, almost immediately after the shutdown, started providing free access to their content through digital platforms. Although this reaction resulted from the willingness to maintain their relationship with the community, it may be seen as a missed opportunity to develop new business models to keep the cultural industry sustainable in moments of change like the one caused by the pandemic. Therefore, for CHOs to survive, it is now becoming urgent for them to actively rethink the industries' most-used models, adopt new sustainable

approaches to accompany the ones that are already applied, and exploit the potential disruptive force of the pandemic. The main challenge now seems to be the design of a new, sustainable way to support CHOs, reduce the negative impacts in the short term, and identify new opportunities in the medium term.

This section aims to analyse the impact of COVID-19 on cultural heritage organisations in Italy, with some examples related to the city of Venice, where the Ca' Foscari University is based and has its main point of observation.

#### Challenges and Needs of CHOs in Italy

The COVID-19 pandemic and the measures to contain it have had a substantial impact on all aspects of Italians' lives, personally and professionally, as well as in every dimension of the cultural heritage value chain. Listed below are the main challenges that were identified for the Italian context and their relation to the six main categories of challenges from the European perspective:

**Job security (I. from a European perspective):** while those in management roles could continue to work remotely, the scenario was different for public-facing staff or those involved in maintenance and restoration works. Many of these professionals were forced to take unpaid holidays because projects were suspended and budgets saw significant reductions. Many museums, in turn, put their contracts with freelancers on hold.

**Social consequences (III.):** the crisis led to a significant loss in terms of human and social capital in the heritage sector. For example, many volunteers had to stop offering their help. In rural areas in the country that rely on physical attendance for cultural initiatives, outreach programmes were suspended. Due to the quarantine measures, many CHOs also experienced an isolation phenomenon which weakened their relationship with the communities.

**Enhancement of inequalities (III.):** although COVID-19 made the digital transformation process of the CH sector faster, it simultaneously contributed to increasing inequalities between large and small museums. While larger CHOs have the capacity to share their materials on digital channels, smaller organisations are missing out on these opportunities as a result of budget limitations.

**The intangible heritage model needs a complete redesign (IV. And VI.):** In addition to the previous challenges, a new need emerged during these past two years: to design a new interaction approach that mixes the physical with the digital experience that doesn't reduce its value. This would mean

there are no virtual or physical users, just an audience that is free to join using any channels made available. Moreover, the impossibility for communities to get together for celebrations, including religious celebrations and festivals, albeit necessary, was difficult to manage, especially in smaller communities where the presence of digital tools is less prominent and where the digital gap is particularly high due to the older age of the population.

**Financial challenges (V.):** The current crisis affecting the CH industry brought a sudden and essential loss of revenue opportunities and still presents a structural threat for many firms and workers in this field. Even those players, such as public museums, libraries, and theatres that can benefit from public support, experienced significant budget issues. Moreover, sponsors started to withdraw their funds and put them towards other causes, such as medical ones. Heritage organisations funded by philanthropy and tourism similarly began experiencing a strong negative impact.

**The need to build new communication approaches to engage with audiences (II.):** after the closure of their physical locations, CHOs, and museums in particular, had to transform their offerings into digital ones, such as virtual exhibitions. Many heritage actors have re-organised their staff's responsibilities to ensure the development of online activities. This required a lot of internal trust and engagement since many staff members had to take on responsibilities they had not been trained for. On the other hand, this scenario has created a playground for testing new methods and approaches.

In addition to the slogan “tutto andrà bene” (i.e., everything will be all right) another one was circulating during the lockdown in Italy: “la cultura non si ferma” (i.e., culture doesn’t stop). To entertain, educate and support the Italians while they were forced to stay at home to reduce the spread of the virus, several museums, theatres, and cultural centres have made their programming available online. Below are some examples:

- San Carlo Theatre of Naples, the oldest opera house in the world, was streaming operas and ballets through their social channels at 8 pm.
- Luxury estate Monteverdi in Tuscany launched a digital artist-in-residence series, collecting musical performances by musicians and singers who had performed there in the past.
- The Raffaello exhibit that celebrates the 500<sup>th</sup> anniversary of his death was available at Rome’s Scuderie del Quirinale and made available online.

In addition to the special streaming and one-off events, Natalie Aldern Kennedy of the “An American in Rome” online blog has also curated a list of six beautiful Italian museums people could visit virtually. Eventually, many famous Italian chefs went virtual, for example, Michelin-starred chef Massimo Bottura virtually invited Italians into his home every evening for Kitchen Quarantine, cooking together for an hour.

### Status quo of CHOs in Italy and Venice

**The effect of the tourism shutdown:** The CH and tourism fields have suffered the greatest damage from the COVID-19 pandemic. The closure of borders and the stop to circulation within and between regions throughout the country led to a drastic block to the entire production chain, compromising revenues and generating an enormous loss in terms of opportunities. Due to the impossibility of public gatherings, cinemas, theatres and the whole entertainment and cultural sector were forced to close. The lockdown imposed by the government starting from March 9th, 2020, mandated the suspension of public access to all cultural institutions, churches, entertainment sites and events. For the first time in peacetime, Italy experienced a state of almost total inaccessibility to cultural heritage. This has made it necessary to define new models for managing the security of both the personnel and visitors, and new business models to make the industry sustainable in such an uncertain moment. In the case of Venice, the closure of Italian borders led to the abrupt stop of the twenty million tourists visiting the city every year. As a result, Venice became a ghost town overnight, populated only by its residents, approximately 50,000 people.

After two years of calm, in 2022, **travelling has almost returned to its pre-pandemic levels**, and tourists are back in the city. Big CHOs are also resuming their activities. For instance, the Biennale of Art has officially started, (a month earlier than usual this year) on April 23rd and will run until the end of November. Anish Kapoor has chosen Venice to host his prestigious new arts foundation. Additionally, La Fenice has resumed its opera program, and soon social distancing and mandatory masks will be a distant memory. Conversely, glass- and gondola-making artisans have closed their businesses due to the lack of clients and the difficulty of redesigning their business models for sustainable operation during these times of uncertainty.

**Challenging the traditional business models:** The lockdowns made it necessary to **define new models for managing the security of both the CHOs’ personnel and visitors and new business models to make the industry sustainable in such an uncertain moment**. This need triggered a series of organisational initiatives regarding the management of CHOs, for instance, it became necessary to identify new security management solutions. One of the primary goals of cultural institutions in Italy is to guarantee “maximised”

public use in terms of opening time as well as “number of users”, with a strong surveillance approach. COVID-19 required the design of a new surveillance approach as a result of the need to reduce staff presence and identify an appropriate integration of surveillance and control systems. Now that CHOs are gradually reopening, organisations consider new flexible operational models that are ready to be applied in the event of future crises, like the one created by the pandemic.

**Venice has faced countless challenges and moments of crises over the centuries, but nevertheless has always managed to regenerate and revive itself.** In the 15th century, an epidemic severely impacted the city by reducing the population by two-thirds. The building of Lazzaretto Vecchio was created in 1423 and represented the world's first quarantine station. It still exists today as a symbol to remind Venetians about those hard times and how they can get back on their feet and reinvent the city. In 1797, Venice underwent a similar redesign project when Napoleon conquered the Republic of Venice. The city's population immediately

dropped from 170,000 to 96,000, with diplomats and merchants moving away. In more recent years, in 1966, Venice experienced the highest Aqua Granda (i.e., high water) in its history, with a tide that reached a peak of 194 centimetres. Even in such hard times, Venice reinvented itself, adapting to change (Allnutt, 2021).

The question now may be whether the COVID-19 pandemic could be **a new opportunity for Venice to reinvent itself once again**, designing a new sustainable model for its cultural institutions and CHOs, built to allow a balance between residents and the presence of tourists. Furthermore, the goal may also be to design a model that can be replicated by other CHOs in the country.

“  
An increased resilience and capacity to deal with transformation and even loss of specific manifestations of cultural heritage can help people adapt to new circumstances and absorb adversity in their own lives too.  
– Holtorf, 2018  
”

### Conclusion for the Italian perspective

Crisis brings fear, and **fear can result in impulsive reactions connected to the difficulty in managing uncertainty.** This chain reaction can translate into the **inability to evolve and move forward** (Furnham, 2013).

COVID-19 has **increased the existing gaps in the CH world, uncovering the lack of skills** and knowledge, lack of flexibility and agile structures, as well as lack of different revenue streams. In many cases, museums had to decrease or cancel their main activities in service to society, or worse, face the threat of permanent closure. On the other hand, there have been **museums thriving digitally**, reacting effectively to the situation, and offering alternative forms of learning digitally. It is now time to investigate ways to help museums and CHOs thrive and fully tap into their potential.

Visitor levels have dropped dramatically, enabling an examination of museums' current business models and measures of success. This new mindset opens the doors to identifying new approaches and ideas for CHOs to connect to their audiences and provide access to their collections and offers.

In sum, the COVID-19 crisis could be seen as an opportunity to **I. rethink the Italian, and additionally, the Veneto Region's strategy in the CH field** and potentially create co-design tables that can see actively working together CHOs and HEIs, to **II. develop new sustainable business models**, supported by a modular and flexible set of tools and knowledge, to **III. work on audience development**, and finally to, **IV. be prepared to face unforeseen events.**



## 3.2 CHOs' status quo in Denmark

### Introduction

When the pandemic hit Denmark in March 2020, CHOs such as museums, theatres, concert halls, cinemas, hobby and sports associations were forced to stay closed, alongside the rest of the society. In addition, the Danish citizens who could work from home were urged to do so. By mid-March, the borders were closed, and tourists and travellers without a work-related purpose in Denmark were banned from entering the country. The lockdown brought an instant halt in revenue for both public and private CHOs. Furthermore, the sudden decrease in travel activities affected the transportation sector and airports. The national tourism organisation VisitDenmark estimates a total loss of 40,6 billion Danish crowns (5,5 billion euros) in revenue from tourism in 2020 compared to 2019, with 62,1 % covering tourism coming from abroad and 4,8 % covering native Danish tourists. Copenhagen and the larger cities had an especially drastic fall in visitors compared to the coast- and rural areas (VisitDenmark, 2021). When Denmark reopened its borders in the summer of 2021, tourists slowly started returning, however, CHOs such as museums, theatres and galleries are still not back to typical visitor rates.

In the initial phase of extreme social distancing, CHOs came up with several spontaneous activities to accommodate restrictions, such as drive-in mass (Christosnet, 2020), weekly sing-alongs on the national television channel, and home delivery of sanitized books from the library. Moreover,

other activities provided recreational experiences during separation and loneliness, such as a Danish contemporary art museum's initiative to invite school children to paint artworks on the outer windows of elderly homes for older people to socialise safely. Naturally, many activities born out of a need for creativity during a time of isolation have disappeared as society reopens. However, other new habits and working structures born out of the pandemic have become a more stable part of CHOs' business models.

### Challenges and needs of CHOs in Denmark

Listed below are the challenges identified for the Danish context and their relation to the six main categories of challenges from the European perspective:

**Lack of statistics on online visits at CHOs (II. from a European perspective):** A general statistical overview of online visits to museums and galleries is still lacking in the Danish context. It is still difficult to see if the lack of other choices only caused the success of certain platforms during the lockdown or if the online visits will constitute a more permanent behaviour among users in the future. Perhaps the statistics already exist at the individual CHO level, but it has not been possible to retrieve them for this research report.

**New digital measures require extensive financial resources (V.):** The addition of new digital

measures, such as the adoption of VR technology, development of apps and platforms, digitization of collections, production of videos, podcasts etc., are costly investments. Moreover, the increased public demand for these measures comes when many CHOs still suffer from the pandemic's financial consequences.

**No direct revenue from online platforms (V.):** Revenue traditionally coming from entrance fees and tickets are not generated in the same way from online platforms. How do CHOs finance this new way of conduct? Where do you get the money from?

**Lack of equality between large and small CHOs (III.):** There is a clear picture that more prominent (and partially state funded) CHOs have adapted much quicker to the new digital requirements brought on by the pandemic. Many had already embarked upon the digital endeavour before 2020 and have therefore gained a head start in comparison to smaller organisations.

**Changing conditions in the world require agile business models (VI.):** The pandemic situation abroad has a direct impact on the Danish CHOs, which, in turn, must be agile and able to adapt their strategies quickly to comply with changing markets. This new approach includes a change in communication strategies and a more frequent renewal of exhibitions.

**Instability in sports and hobby associations (III.):** Sports and hobby associations depend on the work of volunteers and hence are vulnerable due to decreasing member rates and increasing gap in age group composition. This imbalance threatens the traditional democratic values and sense of trust and unity in the population.

**Lack of political support for 'classical' CHOs (III.):** CHOs such as museums, galleries, theatres and the opera are not a priority on the political scene. During the pandemic focus was on the healthcare system and the vaccine enrolment program, and since the beginning of the war in Ukraine, there has been a big focus on the national defence strategy along with refugee politics.

## Status quo of CHOs in Denmark

**Breakthrough of innovative online platforms for larger CHOs:** According to Stefan Jänicke, a data scientist at The University of Southern Denmark, **CHOs should make experiences available in a digital format.** By creating computer models and digital tools that allow visitors to explore the CHOs digitally and on their premises, tailored experiences can fit the interests and needs of different visitors. Simultaneously, such digital experiences will expand the boundaries of the CHOs' fixed, physical spaces (Svennevig 2021). However, the **digital cannot stand alone but needs to be an integrated part of the entire museum experience** (Sanderhoff, 2020); a challenge that calls for new, innovative solutions.

Shortly after the first lockdown, many museums quickly filled their websites with interactive, auditory and visual content informing citizens about the crisis from a historical perspective through video updates, podcasts and storytelling. In addition, some museums created outdoor travelling pop-up versions with chosen items from their collections (Sanderhoff, 2020). For two art museums - Louisiana and The National Gallery (n.d.) the pandemic catapulted a major breakthrough in their internet platforms, allowing digital visitors to explore quality content. The *Louisiana channel* features aesthetic videos about art and culture, while the National Gallery's National Gallery (n.d.) offers a massive digital collection of artwork which can be studied in detail, printed, shared and saved (Louisiana Channel, n.d.; Statens Museum for Kunst, n.d.; Sanderhoff, 2020). Such actions are a **remarkable change of direction towards more openness for museums**, including international institutions such as the Rijksmuseum in Amsterdam or The Metropolitan Museum in New York (Sohn, 2020). Furthermore, the annual film festival in Copenhagen — *CPH:DOX* — was planned to take place in the middle of March 2020, but when the pandemic hit, they changed the format in record time. Specifically, all physical activities at cinemas were cancelled, and talks, live debates, films and

workshops were instead held digitally and shown on the website. The format has proved successful, and the festival has been running a hybrid version for the last two years. As Tine Fischer, the head of the festival, puts it, “the digital space is interactive in an exceptional way. We **succeeded in creating an online universe which is a collective and social experience even though it takes place at home**” (Borelli 2020, our translation). The Royal Danish Theatre (n.d.) also launched an online platform (KGL Xtra) where users can stream (some) plays and concerts, watch behind-the-scenes videos, and interviews with directors, stage managers and costume makers, all in a very aesthetic and creative, visual universe (KGL Teater, n.d.). Despite the apparent success that some (larger) CHOs have experienced with integrating their online platforms, there seems to be a significant gap when looking at the smaller institutions. These most commonly use their online platforms in a traditional sense as a place of practical information and as a point of sale for tickets and merchandise. It takes more than just an innovative idea to enter the online universe; it also takes significant human and financial resources.

**Participatory culture and democratization of CHOs:**

A large part of the Danish population never or rarely visit museums (Jessen, 2018). A report created by the Danish Ministry of Culture shows that most museum visitors have a higher education background, which excludes a large part of the population from visiting CHOs. Museums should create exhibitions based on visitor habits, preferences and perspectives; the museums should not only target the ‘loyal cultural elite’ but, to an equal extent, address the people who would not traditionally visit them. To achieve that, amongst others, requires a greater and more creative communication effort (Kulturarvsstyrelsen, 2009: 3-17). There is a strong tendency on the CHO scene towards democratization and participatory culture where communication does not merely go from experts and curators to the public, but where the visitor becomes a central participant, particularly via

digital methods. On the Danish scene, this is visible through different initiatives such as:

- The Danish National Museum (2020) initiated a **crowdsourcing campaign** asking private citizens to tell their side of the lockdown story through text, pictures and video (Nationalmuseet, 2022).
- The Danish association for Digital Metal Detector Findings (DIME) has experienced a drastic increase in both members and registered archaeological findings by private citizens in the last three years. With more than 140.000 findings, the platform is one of the world's most significant archaeological citizen science projects, and it makes up great support for museums and professional archaeologists in Denmark (DIME, n.d.).
- Many institutions, such as the Danish Architecture Centre (n.d.), have installed ‘selfie camera stations’ in strategic places as parts of their exhibitions, inviting people to document and share their experiences as seen through their lenses. This initiative calls attention to the contrast between bygone times where ‘no photography’-signs would be the first thing you would meet at the entry to museums, and today, where many modern museums **organise their exhibitions to accommodate social media formats** (Sandberg 2019).

However, the state of participatory culture in Danish CHOs still seems to have a lot of room for improvement. A national user study of Danish museums shows that the opportunity to participate actively scores the lowest amongst users (Ministeriet Slots- og Kulturstyrelsen, 2021).

**Help packages and financial support from the government:**

The lockdown in Denmark has come in many different phases, affecting other parts of cultural life and society. In the summer of 2020, the Danish government offered CHOs a range of financial help packages to boost cultural life, which for instance, meant that museums, galleries, theatres, concert halls and some sports arenas were able to offer their visitors a 50%

discount on entrance tickets (The Danish Ministry of Culture (2020a). Following great pressure from the public, several other financial help packages for CHOs were created, including financial support to upcoming bands, debut writers, and established performing artists such as actors, dancers and musicians. A range of financial help packages has also been offered to CHOs, such as theatres, public music venues, museums, zoos, castles and knowledge centres (The Danish Ministry of Culture (2020b).

Despite this, the different help packages are subsidies and should not be considered a comprehensive security net for CHOs. Many museums and galleries were forced to fire employees who have still not been rehired, and budgets at most CHOs continuously suffer from the pandemic's consequences. These actions translate into a heavier workload for many employees and cancellations of projects (Dalgård 2022). In general, the government was criticised for prioritizing "shopping malls over culture" - a notion that refers to the fact that, unlike countries such as Italy, where museums opened two weeks before restaurants and cafes, the Danish government systematically kept theatres, museums and cinemas closed, while fitness centres, sports associations, restaurants and bars

were allowed to stay open for more extended periods (Paulsen & Rohde 2022, Hagedorn 2021).

**Changes in audience composition:** Statistics from the final quarter of 2021 show that the number of guests is more or less back to pre-pandemic levels but numbers from the first quarter of 2022 are still not available (Danmarks Statistik, 2021). One clear development, however, is the change in visitor composition. There has been a significant decrease in the number of tourists coming from abroad, largely due to the pandemic still being omnipresent in many other countries, along with the war in Ukraine, which has disrupted travelling activities in Europe. Foreign tourists usually make up a big part of visitors to museums in the capital area and larger cities (Munksgaard 2021; Dalgård 2022). Still, this market has been taken over by native-Danish visitors who are doing 'staycations' and other holiday-related activities within the country's borders. This creates a range of new requirements for CHOs, such as the more frequent renewal of exhibitions and communication that is more targeted to the Danish audience. These new requirements also increase staff workload and necessitate greater financial resources (Ministeriet Slots- og Kulturstyrelsen, 2021).

### *Sports and hobby associations - an important part of Danish national identity*

In Denmark there is a strong tradition for citizens to participate in sports and hobby associations (*'foreninger'*) where people come together to perform different sports and engage in social activities. Relying heavily on volunteers and counting almost half the Danish population as members, the sports and hobby associations are a cornerstone in Danish society. They contribute to building trusting, democratic communities where people from all walks of life can connect and make relations as equals regardless of social, geographic or educational background (DIF & DGI & DUF 2019). It often takes the shape of a local football club, a running association, dancing groups, scouts or gymnastics teams. The tradition was established in 1849 along with the Danish national law's constitution, giving all individuals the right to form communities across all layers of society. Since then, it has been a crucial part of the country's national identity, the informal education of children and teens, and an important part of building trusting relations between citizens. When repetitive lockdowns were realised in the course of 2020 and 2021, the sports and hobby associations area suffered tremendously as member and volunteer rates decreased drastically. However, some associations offering outdoor activities such as golf and tennis have experienced an increase in members during the pandemic (DIF(a) 2021).

The most active age groups in associations have, until recent years, been adults between the ages of 27 and 53, but today the elderly above the age of 72 make up a much larger part of members and volunteers than previously. According to Professor Lars Skov Henriksen, this could be due to the change in work-life balance where a growing

number of working people engage in project work beyond the 40-hour week and hence find it challenging to dedicate themselves to weekly recurring activities (Hansen 2019). In most associations, numbers are still not back to normal, although recruitment campaigns, social media posts and public schools' intranet advertisements have been used actively to promote the different local associations (DIF(b) 2021). The lower member- and volunteer rates and the uneven age group composition threaten the existence of Danish sports and hobby associations as we know them today. Not just because it is a social place of informal democratic education, but because they carry a unique sense of unity and solidarity upon which the fundamental democratic values and trust amongst citizens - a trademark of the Danish national spirit - springs from.

In this context, the abundance of music festivals held in Denmark depend on the local support from sports and hobby associations (and the many other types of associations) to survive. They are also built on the work of thousands of volunteers. In this sense, there are strong ties between the traditional values regarding non-profit work and volunteering and the existence of music festivals.

### **Conclusion for the Danish perspective**

After a drastic fall in visitors and revenue in 2020, the CHO sector is slowly recovering. Although foreign tourism has still not returned to pre-pandemic levels in Denmark, CHOs are experiencing an increased number of Danish visitors instead. This sets new requirements for communication and exhibitions. Furthermore, many people have gotten used to conducting more digitized lives, meaning that CHOs must

think of the digital space as an integrated part of the experiences they are creating. The tendency towards participation has slowly become ingrained, where users are not only spectators but co-creators of the overall experience. As well as that, there is a specific focus on democratising CHOs, which calls for creating exhibitions and experiences based on user habits, preferences and perspectives.



### 3.3 CHOs' status quo and challenges in Austria

#### Introduction

The pandemic drove significant digitisation in Austrian art and CH institutions, as well as in teaching, particularly in the area of outreach.<sup>1</sup> For many museums and CH institutions in Austria, taking action on climate policy is a new challenge (Museumsbund Österreich, 2021). For CH stakeholders, sustainability is not only important in the sense of a climate-friendly orientation of their businesses (Sustainable Development Goals) (Fuschlberger, 2021). Sustainability actions are vital in the sense of sustainable structures for long-term archiving, research and services, and the development of digital content and its preservation, which in turn is linked to sustainable financing (ZSI, 2020). In Austria, innovative projects and ideas in the field of digitisation and digital CH primarily take place at universities. Hence, it is important to expand and combine research and teaching in a complementary and meaningful way, to create "bridge functions" and to promote "interface management" (Center for Social Innovation, 2020; Museum Academy Universalmuseum Joanneum, 2021). In addition, for larger institutions, data stewards are also very important. Data stewards are experts in the field of research data management. They bring their expertise into the organisation and have an advisory function throughout the entire research data

lifecycle, whether in the run-up to a research project, data preparation, archiving or subsequent use. This is a newly established role at Austrian research institutions. (Reichmann and Hasani-Mavriqi, 2021). Many museums have already digitized large parts of their collections, which, for example, simplifies lending transactions among cultural institutions, as objects are "more visible" and "more accessible" and are, therefore, also increasingly loaned out. For the objects to be digitised in a high-quality manner, specialist expertise is required. However, many institutions lack the financial and human resources to fully digitize their collections (Museumsbund Österreich, 2019). In this regard, the Vienna Museum of Natural History (NHM) is already well-connected in terms of collection digitisation. It is involved in several international projects that promote the opening, linking, use, and application of natural science collections in the European area, such as DiSSCo, SYNTHESIS+, and COST MOBILISE (Distributed Systems of Scientific Collection [DiSSCo], n.d.; Synthesys+, n.d.; Mobilise, n.d.) Another pioneer project in "open content" takes place in the Belvedere Museum. This is the first art museum in Austria to pursue an open content policy, making images of objects that are no longer subject to copyright restrictions available for free in print

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<sup>1</sup> Examples from the federal museums bear witness to this, but smaller local museums also participated in this trend. CHOs repeatedly addressed calls for collections to their audiences. In this way, numerous "Corona Online Collections," e.g., at Wien Museum (2022), House of Austrian History (Hdgoe, n.d.) and Folk Life Museum in Graz

(n.d.) were created, which would not have come about without the participation of the public. These current collection strategies require digital tools, the handling of which is often tied to expertise in the humanities and technology.

quality on their website in order to increase the visibility of their collections and facilitate scholarly publishing (Belvedere, n.d.-a). Moreover, the Danube University Krems, the Institute for Digital Humanities of the University of Graz, the Vienna University of Technology and the ACDH-CH of the Austrian Academy of Sciences are particularly involved in innovative research projects that are partly joint and in collaboration with cultural institutions such as InTaVia, Relnherit, Time Machine, and Dust & Data (Intavia, n.d.; Reinherit, n.d.; Time Machien, n.d.; Dust and Data, n.d.)

Only with this expertise can large-scale digitisation projects like those currently underway at several federal museums succeed. CH digitisation, in conjunction with the methods of Digital Humanities, opens up new possibilities for research, for example, digitized collections. This highlights the relevance of educational opportunities in this area, for example, the Certified Program Digital Curating in Museums and Collection Institutions at Danube University Krems.<sup>2</sup> The decisive question here is in which system digitisation takes place (see Annex 2, keyword "Linked Open Data" under heading: standards), so that the greatest possible reach, compatibility and sustainability can be ensured (Center for Social Innovation, 2020). Ultimately, it is up to the political decision-makers to create the necessary prerequisites and infrastructure.

Moving to educational initiatives to support taking action on climate policy, master programs in the field of digital humanities are currently only offered in Vienna and Graz since 2020 and 2017, respectively. Although there is an increasing demand for these courses, there are currently still too few graduates of

these (or similar) courses who have sufficient expertise at the interface of IT and the humanities, e.g., only 37 students attending the University of Vienna's "Digital Humanities" program as of January 2022 (University of Vienna, 2022). In a study on "Digital Humanities in Austria" published in 2020, staff members of the Center for Social Innovation (ZSI) led by Katja Mayer identified precarious employment conditions at the interface of humanities and technology as one reason for the low interest in the study programs; few full-time positions and temporary contracts make the field unattractive. These temporary contracts also contradict the point of sustainability, as they lead to inefficiencies in knowledge production and thus professionalisation (ZSI, 2020).

On the societal level, digital humanities must become more visible and their relevance and competencies for overcoming social challenges made clearer. Mutual understanding and respect for approaches and skills between IT and humanities scholars must also be developed (ZSI, 2020).

### Challenges and needs of CHOs in Austria

The need for a digital practice in the CH sector highlights a range of challenges for Austrian cultural professionals. Lack of knowledge was observed in the following areas:

**Lack of digital/tech literacy Staff (VI. from a European perspective:** Graduates of digital humanities could take on a bridging function between the humanities and computer science, but there are currently too few graduates with the

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<sup>2</sup> The commitment to digitise Austria's cultural heritage is anchored at the structural level in the Austrian Reconstruction and Resilience Plan (ARP) 2020-2026, published by the Federal Ministry of Finance. The ARP prioritises climate protection, ecologicalization and digitisation: a 46% share of investments are planned for climate protection purposes, as well as a 41% share for digitization measures (thereby exceeding the minimum share of at least 37% for climate protection and at least 20% for digital transformation required by EU Regulation 2021/241). Thus, the EU requirements in this area are exceeded by more than double (Federal Ministry of Finance, 2021). The arts and CH sector, which was severely affected by the pandemic, is to

use the ARP funds to take steps towards ecologicalisation and digitisation, as well as to implement concrete rehabilitation projects based on different reforms: Development of a building culture program and Development of a national digitization strategy.

These reforms will be accompanied by investments in the following projects: I. Renovation of the Austrian Museum of Folk Life and Folk Art and the Prater Ateliers in Vienna; II. Digitization offensive for cultural heritage, and III. Climate-friendly cultural enterprises investment fund (Federal Ministry of Finance, 2021).

required expertise (Centre for Social Innovation, 2020; Museumsakademie Universalmuseum Joanneum, 2021).

**Legal ambiguities (II.):** Legal ambiguities exist regarding digitisation, open data, copyright, data protection, data processing, and data enrichment (Museumsakademie Universalmuseum Joanneum, 2021; Bundesministerium für Digitalisierung und Wirtschaftsstandort/Parycek, 2021, p. 46).

**Audience targeting (VI.):** there is currently not enough known about the impact of digital interaction with audiences. Therefore, it is still largely unclear how to improve CHO's communication and engagement with audiences and there is a risk of one-way communication. The challenge is encouraging the digital audience's participation and/or reflection on the shared content (Museumsakademie Universalmuseum Joanneum, 2021).

Furthermore, the following factors must be taken into account:

- **Staff shortage (I.)** (Museumsbund Österreich, 2019; Museumsakademie Universalmuseum Joanneum, 2021).
- **Lack of financial resources (V.)** (Museumsbund Österreich, 2019; Museumsakademie Universalmuseum Joanneum, 2021).
- **Danger of "competition" with other institutions (IV.)** instead of consolidation of cooperations and knowledge exchange between institutions (Museum Academy Universalmuseum Joanneum, 2021)
- **Curators' conflict (VI.):** curators are often caught between trying to diminish the authority of the museum on the one hand and their own discomfort with alternative forms of representation on the other (Zuanni, 2021).

The following approaches and considerations can help overcome the above challenges:

- **Figuring the digital sphere as a central component:** the digital should no longer be

thought of as a separate approach for the CHOs.

- **Comprehensive digital strategy:** Offers in cultural education (both analogue and digital) should no longer be understood as opposing each other, but as intertwined and committed to a common content strategy of museums (Museum Academy Universalmuseum Joanneum, 2021).
- **Building digital literacy:** promote interdisciplinary collaboration between humanities and IT (ZSI, 2020).
- **Process orientation:** Interdepartmental processes as well as the further development of digital competencies among employees, should be understood as a process (Museumsakademie Universalmuseum Joanneum, 2021).
- **Relevance of "bridge functions":** The relevance of the "interfaces" or "bridge functions" between the areas must be anchored in the consciousness of the institutions' executive managers, as executive support of these processes is key (Museum Academy Universalmuseum Joanneum, 2021).
- **Strengthening of in-house competences:** Anchoring of methodological competencies for the moderation of joint work processes in the museums themselves (Museumsakademie Universalmuseum Joanneum, 2021).
- **Defining the target groups for digital content:** defining and understanding the needs of the relevant target groups will ensure audiences' better appreciation and interaction with digital content.
- **Defining "success" for digital projects:** it is necessary to look for alternatives to a purely quantitative assessment based on "clicks" (Museumsakademie Universalmuseum Joanneum, 2021).

## CHO status quo in Austria

The Austrian Museum landscape consists of approximately 800 registered museums, more than half of which are voluntary. A study conducted by the Museumsbund Österreich in 2019 shows that museums had a positive attitude toward digitization even prior to the COVID-19 pandemic; although the physical objects are still the focus of museum work, digital transformation has become indispensable in both curatorial and educational work. A CHO's social media presence and the running of its own website is also considered essential. In 2019, only 18% of the institutions participating in the study had an online collection, likewise, only 18% of the full-time museums had a digital strategy. The absence of such a strategy is mainly due to the lack of human resources available to develop a digital strategy (56% full-time and 63% volunteer museums) but also due to the lack of monetary resources (39% full-time and 50% volunteer museums). This competency is lacking in 16% of full-time and 36% of volunteer museums (Museumsbund Österreich, 2019). The pandemic, however, resulted in a "digitisation shock" or a "digitisation frenzy" for the CH sector (Stimmer/Grebe, 2021). Quite a few museums in Austria turned to the public with a collection call resulting in online Corona collections and cultural education offers being translated into digital formats. Austria is still in its beginnings when it comes to participatory methods such as citizen science or crowdsourcing, although the online "Corona Collections" mentioned above are certainly a step in the right direction (ZSI, 2020, p. 182; Seltmann et al., 2017).

In natural history museums such as the Inatura Dornbirn, citizen science and public participation have been used long before Corona, namely through the "expert advice" offered (Inatura, n.d.). The museum receives about 3500 inquiries from the public annually, about topics such as the origin of insects, plant parts or rocks, which are then answered in a consultation. Unfortunately, it is not

possible for the museum to further advertise this offer due to a lack of staff (Museumsbund, 2019).

The House of Austrian History (HDGÖ) also tries to motivate the public to participate beyond the "corona collection" with web exhibitions available to join (Haus der Geschichte Österreich, n.d.-b).

The Belvedere21 developed a special format of their programming that continued during the pandemic called, "Video Messages from the Neighbourhood." With their community outreach program, they address the different groups and communities in the social and spatial environment of Belvedere 21 and actively involve them. In concrete terms, this involves joint projects on thematic focal points that are implemented outside the museum and in public space (Belvedere, n.d.-b).

The numbers of online visitors and interactions have been included in the official museum statistics of the Museumsbund Österreich since 2020 (ARGE Digital Museum, 2021). Though online visitors and user numbers increased rapidly in the beginning, they later stagnated. It became clear that analogue offers in cultural education could not be translated one-to-one into the digital realm, and that the museums would have to create their own formats (Stimmer/Grebe, 2021, p. 22).

This, in turn, leads to new questions about the legal prerequisites of digital use. Provenance research is necessary to clarify the legal requirements for online publication of CH collections. One-third of the museums participating in the Museumsbund Österreich in (2019) study conduct provenance research. In connection with the digitization of collection holdings and the accompanying opening up of data, the clarification of legal framework conditions, exploitation logic and ethical principles increasingly gain significance. In addition to technical innovations, legal foundations must therefore be created, i.e., digitization-suitable laws and legal innovation spaces to enable the testing and regulation of digital services

(Bundesministerium für Digitalisierung und Wirtschaftsstandort, 2021).

Although cultural heritage institutions use different approaches depending on their orientation, some common features can be identified across disciplines in terms of methods and tools used: procedures around digitization, running and accessing archives, useful collaborative tools for annotation, handling research data, as well as the contemporary production, preservation, and curation of digital editions. Furthermore, the following tools and methods are increasingly used: visualization, text and data mining, digital cartography, working with geospatial information, audio data, as well as app design and database development.

Currently, the methods and tools used in Austria's CHOs include methods like machine learning, artificial intelligence, augmented reality, and virtual reality is considered future trends (see, Annex 2 for an overview of the methods and tools currently used in Austria's CHOs), some of which are already being used and further developed, e.g., at the Austrian Academy of Sciences and the Austrian National Library of Sciences, included in the digitisation strategies of some institutions (ZSI, 2020).

Furthermore, in the context of digitisation, and free accessibility, usability and reusability of scientific findings and research data, i.e. open Science, Austria has several networks that are important in the implementation and further development of Open Science, such as the Austrian University Conference (uniko), the Forum of Austrian University Libraries (ubifo), the Austrian Science Fund (FWF), the Austrian Library Network and Service GmbH (OBVSG), the Cooperation E-Media Austria (KEMÖ), and the Open Science Network Austria (OANA), for the exchange of ideas, collaboration and networking

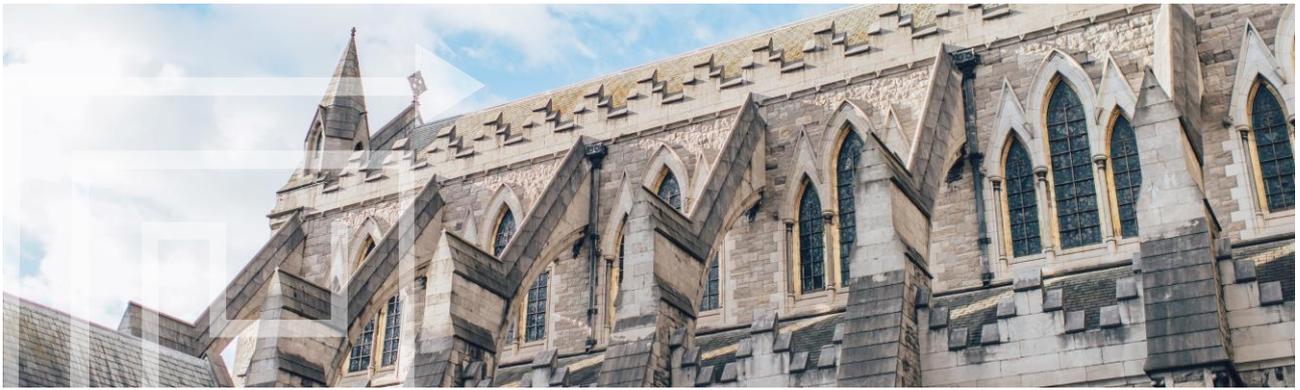
in the field of Open Science (Bundesministerium für Bildung Wissenschaft und Forschung, n.d.).

Austria is also participating in the "European Open Science Cloud" program. This cloud is intended to give European researchers access to first-class computing, storage and analysis capacities located in Europe. This should also facilitate the open exchange of data.

Measures to advance Open Science can already be found in the Digital Humanities-Austria strategy of 2015, which focuses primarily on expanding the use of Creative Commons licenses, strengthening the dialogue with society through Citizen Science, as well as Open Access and Open-Source strategies. In her study "Digital Humanities in Austria", Katja Meyer from ZSI identifies that steps have already been taken to further Open Access and Open-Source strategies, but the other measures have been neglected. (ZSI, 2020, p.185.).

### **Conclusion for the Austrian perspective**

Since the Austrian Centre for Digital Humanities (ACDH-CH) founding the Austrian Academy of Sciences in 2015, the Austrian landscape of digital CH has visibly changed. The pandemic has affected art and cultural institutions, but it has also affected the scientific community and has given a boost to digitization. Many services and ideas that emerged in this first phase of the "digitalisation shock" were well received by the public and those working in the field of digital cultural heritage. But the Corona pandemic also revealed a lack of competencies and knowledge gaps in the field of digital cultural heritage. Although the recommendations for action formulated by ZSI in 2020 have already been partially implemented, many goals have yet to be achieved.



### 3.4 CHOs' status quo in Ireland

#### Introduction

Ireland has not been immune to recent economic and social shocks caused by the COVID-19 pandemic. In fact, from a CH standpoint, Ireland has arguably been one of the worst affected countries. Its geographical position puts the country two bodies of water from the European mainland and relies heavily on air travel to invite tourists to experience the country's heritage. In a time when air travel was drastically limited and tourism practically non-existent, Ireland's cultural heritage sector was severely affected.

However, the pandemic also changed how Irish people viewed their local culture and their local heritage, and like many other nationalities, they gained a new appreciation of their natural heritage and cultural landmarks. They had to stay local and get outdoors regularly, which led to the discovery of a plethora of previously unknown or ignored facets of culture and heritage around them. Additionally, this year, the 'Decade of Centenaries'<sup>3</sup> comes to an end. This decade has brought Irish culture and heritage to the fore in Irish society again; remembering Irish men and women who helped forge the nation a century ago. Although the 'Decade of Centenaries' was disrupted by COVID-19, as both now come to an end, the place of Irish CH is now more optimal for

the long-term future and prevalent in Irish people's hearts and minds.

Ireland has enormous potential to capitalise on the greater interest of its people in our CH. This potential will be strengthened by the return of tourists and diaspora now that COVID-19 is no longer a barrier to foreign travel. Culture and heritage are now seen as an essential facet of Irish identity and society, acknowledged by the public, the government, and the organisations in the sector itself. CH provides economic development, tourism and innovation, and individual and societal wellbeing. Nonetheless, it took a pandemic for Ireland to realise that CH is an integral part of the multicultural societal fabric.

The following section analyses the current status quo for the CH sector in Ireland, evaluates how it has been affected by COVID-19, outlines the guiding policies and courses, identifies the challenges and needs of staff, and makes recommendations based on gaps and opportunities for CHOs.

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<sup>3</sup> During the 'Decade of Centenaries' the events from 1912 to 1922 were remembered, beginning with the signing of the Ulster Covenant in 1912, followed by the 1916 easter Rising and War of Independence (1919-21) and ending with civil

war and the partition of the island in 1922. The celebrations of the 1912-1922 events during 2012-2022 marked a significant period in Irish history and redefined local communities' understanding of Irish culture.

## Challenges and needs of CHOs in Ireland

Listed below are the identified challenges for the Irish context and their relation to the six main categories of challenges from the European perspective:

**Impact of the Pandemic on CHO's and Staff (I. from a European perspective):** Like almost every sector of Irish society and economy during the pandemic, the CH sector faced widespread closures, job losses, and delays to construction and development due to restrictions. The extent of these problems was mapped out by the Irish Heritage Council using a survey of over 500 workers in the heritage sector in April 2021. The survey offered an understanding of the impacts made by COVID-19 and to see what suggestions and actions could come from the government to set the cultural heritage sector on the way to recovery.

The 500+ respondents included individual staff of CHOs as well as CH bodies and agencies representing varying areas within CH, such as biodiversity, museums, community heritage, historic buildings, archaeology and landscapes. 61% of respondents came from CHOs with full-time employees and the remainder from voluntary organisations. Of that 61%, three quarters worked in CHOs with ten or fewer full-time employees, indicating the prevalence of small or micro-organisations in the CH sector and their vulnerability to events such as COVID-19. (Covid-19 Heritage Sector Survey - Heritage Council, 2021). Other key findings from the report include:

- Two-thirds (66%) of CH sector workers suffered loss or postponement of work due to COVID-19;
- 52% of respondents had experienced temporary closure;
- 51% experienced postponement or cancellation of events;
- 46% experienced a lack of revenue streams;
- 20% experienced staff well-being issues;
- 17% believe their business or CHO would be unlikely to survive the next 12 months without major intervention, and

- 75% of CHOs did not have a recovery plan in place.

These impacts had a detrimental effect on CHOs, causing an overall 20% drop in full-time, part-time, and volunteer employment, with 65% of the job decreases among sole traders and private sector organisations (Covid-19 Heritage Sector Survey - Heritage Council, 2021). The key statistics above are the near half of CHOs that experienced a lack of revenue streams and the three quarters that did not have any recovery or contingency plan. These facts show a need for Irish CHOs and their leaders to diversify their avenues for income, innovate, and build resiliency into their business model for future setbacks.

**Digitalising CHOs' offerings of the Pandemic on CHO's and Staff (VI.):** Nonetheless, there were some silver linings identified in the survey as well. 68% of CH sector workers believed that lifting COVID-19 restrictions would lead to a renewed appreciation for heritage and culture, and 62% of respondents had adapted to creating online heritage-related content. Two-thirds of respondents agreed that the pandemic would lead to better use of digital technology and nearly half (45%) felt it would lead to more time working from home. (Covid-19 Heritage Sector Survey - Heritage Council, 2021).

Virginia Teehan, Chief Executive of the Heritage Council, summed up these green shoots for the sector: "The social restrictions imposed as a result of COVID-19 have had a silver lining - a reawakening of interest amongst Irish people in our local heritage. Throughout the 2km and 5km restrictions, we have seen individuals, families and communities the length and breadth of the country taking the time to really explore their local heritage, looking at the local monuments, historical sites, waterways, landscapes, plants, trees, birds and animals, and we believe this will engender a long-term interest in our built and natural heritage." (Covid-19 Heritage Sector Survey - Heritage Council, 2021).

## Status quo of CHOs in Ireland

**Cultural Heritage Policy Drivers:** The policies shape Ireland's current cultural policy are mapped out in:

- **I. the Government's Culture 2025 policy framework**, launched in late 2017, which is Ireland's first Framework Policy to embrace the whole cultural sector. Among others, it encourages ambition, risk, innovation and excellence in the creative and cultural sectors, creates opportunities for increased citizen participation, especially for those currently excluded or at risk of exclusion, and ensures that culture is seen as a core component of the work across Government (See, Annex 1 for the policy's extensive features and objectives).
- **II. the Creative Ireland Programme (2017-2022)** launched in 2017 and mapped the government's local, regional, national and international value system around culture and heritage. Among others, it encourages everyone's right to participate in the Irish cultural life, as well as the importance of the Irish tangible and intangible CH; the country's cultural diversity, informed by the many traditions and social backgrounds; the value of culture as a means of fostering a more sustainable future for Ireland, including through economic and social policy, and the value of culture in presenting Ireland to the world (See, Annex 1 for the policy's extensive features and objectives).
- **III. Heritage Ireland 2030**, which was released in 2022, as a long-term plan for the development of the heritage sector for the next decade. The plan outlines a number of key actions related to developing skills for the heritage sector. The key actions related to skills development are outlined in the below table, yet the actions remain broad and there is no data in the strategy related to skills gaps. In fact, the only mention of CHO's adapting to a post-pandemic world refers to the 'remarkable level of innovation by museums, agencies and the private sector in building

engaging heritage projects during a time of great stress for individuals and communities' (Department of Housing, Local Government and Heritage, 2022). As seen below, there are plans to develop a specific strategy for skills development in the heritage sector, which is not yet published (See, Annex 1 for the policy's extensive features and objectives).

- **IV. Investing in Our Culture, Language and Heritage (2018-2027) Policy** by the Government of Ireland (2018) maps the national goals related to the CH sector's strengthening. The Policy addresses the national CHOs' longstanding infrastructural issues, as well as the need for securing economic investment to develop a vibrant Media Production and Audio-Visual sector. Among others, it presents actions related to the upskilling of the CHOs' staff on digitalisation and funding securing for content production (See, Annex 1 for the policy's goals and planned actions).

**Political Issue with Culture and Heritage:** A political issue facing representatives and organisations in the cultural heritage sector is the mixed level of importance, interest and time given by the government of Ireland to the sector. Despite numerous plans, documents and strategies in the areas of culture and heritage, politically, there is confusion over the government's vision. Three different members of the Irish government have the words 'heritage' or 'culture' in their portfolio, and the country's national monuments fall under the responsibility of a fourth. The ministers responsible for heritage and culture also preside over areas such as media, sport, arts, tourism, local government, housing and the Gaeltacht in their portfolios and, therefore, are not able to commit fully to cultural heritage. While some of these areas overlap with heritage and culture, the convoluted responsibilities, and absence of a minister whose sole priority is culture and heritage, is a disadvantage for Ireland and a missed opportunity to prove that CH is a valued sector by the government. This has led to culture and

heritage being seen as an additional token portfolio by some politicians, who use cultural organisations as a means to boost their PR, attend events and pay lip service to innovate the sector. Not enough attention or political will is paid towards research, curation, collecting, preserving, and educating. There is a danger that work will be carried out in silos, that departments will be stuck in rigid agendas and those clear synergies will be ignored (O'Brien, 2020). Furthermore, the CH sector is not acknowledged or mentioned in Ireland's National Skills Strategy for 2025, another example of how the government view the sector's importance (Ireland's National Skills Strategy, 2021).

**Regional/Local Insights and Needs:** In 2019, in anticipation of the launch of Ireland's future policy on Heritage (Heritage Ireland 2030) the Department of Culture, Heritage and the Gaeltacht asked the Heritage Council to carry out a consultation and review process involving members of the public and people working in the heritage sector. The consultation process comprised three meetings, two with the general public and one specifically aimed at workers in the sector. The two public meetings, which took place in Kilkenny (Midlands and Southeast Region), and Galway (West and Mid-West Region), provided a local context to issues in the heritage sector that expanded into regional and national concerns (Heritage Council, 2019).

### **Conclusion for the Irish perspective**

As evidenced from the sectoral and governmental policies, the political reality, the needs of the public and challenges for the CH sector all mentioned above, much is happening around cultural heritage in Ireland. However, this may not necessarily be of benefit; too many policies and strategies that combine, overlap and supersede each other has the potential to create divided and

aimless ideas and objectives for the sector. The presence of specific policies for heritage and culture (Heritage Ireland 2030 and Culture Ireland 2025) as well as a joint policy on both (Investing in our Heritage, Culture and Language 2018-2027) means the environment to cultivate the sector, develop skills for staff and capabilities of organisations should be ripe with potential as we emerge from the pandemic. It is important that this potential is realised and not wasted by an overload of conflicting agendas, policies and targets for our cultural heritage sector that are overseen by organisations and departments with different leaders, goals and visions.

The consultations gathered concerning the launch of the Heritage Ireland 2030 strategy highlighted a need for one clear vision for the cultural heritage sector and more efficient cooperation between the different policy makers and organisations that drive Ireland's long-term strategies for the sector. It is a positive sign that within the Irish public and CH sector there is a great concern and passion for protecting Irish history, culture and heritage and that the government is open to consulting with these groups in order to influence policy. The goal to develop a heritage skills plan is welcome but releasing a ten-year strategy before mapping out the skills gaps and needs for the sector is a missed opportunity.

Given the detrimental effect COVID-19 has had on almost every sector of society and economy, most departments, organisations, and higher educational institutes are re-evaluating their pre-COVID policies and priorities. The decision-makers in the Irish CH sector should consider a similar approach, given the changes that have occurred in the last few years.

## 04 | COMPETENCY GAPS OF CHOs & RECOMMENDATIONS

The term competencies can be conceptualised as the triad of attitudes, knowledge and skills (Williams, 2022) that an individual draws upon to bridge between different actors within their organisation and the ecosystem beyond the organisation. Therefore, the umbrella term competencies incorporate one's **knowledge**, defined as the theoretical understanding of a specific subject or a number of areas and disciplines. On the other hand, we define **skills** as practical know-how, which includes applying and spreading knowledge, mobilising resources and achieving goals. Finally, **attitudes** encompass norms, beliefs and/or values that mobilise one's behaviour.



### 4.1 CHOs' Competency Gaps in Italy

#### Competency Gaps of CHOs' staff

In addition to training workers on mandatory hygiene and physical distancing measures to prevent future spreads of the COVID-19 virus, the pandemic pointed out the importance of a new skill set that needs to be developed within each cultural heritage organisation in Italy in order to allow them to thrive even in hard times.

#### Digital competencies:

- **Expand the ability to work in a digital environment:** The need to build technical awareness and digital knowledge to allow employees to identify new ways to engage with audiences and combine physical experiences with virtual ones.
- **Develop the ability to interpret data:** The ability to work with data is becoming incredibly important in order to design new strategies and identify new models.
- **Multiplatform storytelling:** Ability to build narratives that can be easily adapted on

different platforms and that can allow users to “immerse” themselves in those stories and feel part of them.

#### Legal

- **Copyright management:** The presence of innovative content production and the potential sharing of these contents with other players makes it relevant to develop a stronger skillset in the world of copyright.

#### Change management:

- **Adaptability and resilience skills:** Develop paths of personal, as well as team growth so that people can develop a toolkit, they can use to manage time, boundaries and mental wellness to develop resilience.

#### Innovation:

- **Models redesign:** Critical thinking, problem solving, and creativity are all required skills, combined with project management, to work on the challenges of a rapidly evolving context.

This also includes cultural heritage organisations and the redesign of their approaches and models.

- **Co-design:** In such a new context with blurred lines between being visitors/spectators, and being a content creator, it is necessary to develop participatory design skills that can be applied by cultural heritage organisations to improve engagement with their communities.

### **Recommendations for CHO staff and leadership in Italy**

Italian CHOs may consider introducing a set of measures designed to protect their staff and their jobs, in case of unexpected occurrences, in line with the Italian legislation.

As well as that, it would be very important for cultural organisations to develop digital skills and new technical infrastructures to improve their digital presence and offerings through a comprehensive strategic approach. Such an approach includes the knowledge and ability to collect and read data, track performances of digital activities, and design successful user experiences; these are all activities that cultural heritage organisations still seem to struggle with. Many museums received support during the pandemic to develop their digital tools, which is an important step to help museums stay relevant and to encourage innovation. However, small and mid-

sized museums seem to need specific coaching in their digital transformation path since they face the additional challenge of a lack of resources and human capital to progress in their digital transition. This reflects the importance of carefully managing the online presence of cultural institutions by identifying a set of new ways to generate income from virtual visits and online shows; collaborations with renown artists or the opportunity to ask for voluntary donations for virtual tours can be options to consider.

CHOs and operators should also work on improving 'softer' skills around leadership in order to strengthen their ability to become more resilient. This may be achieved by developing and engaging in a transnational collaboration and exchange of practices and learnings, working closer together with other institutions to share concerns and needs, and co-designing new approaches.

Eventually, it would be important for CHOs also to consider their prominent social role within the community. The pandemic increased the risk of individual loneliness, and public spaces accessible for dialogue and inspiration were few and far between. Museums and theatres have the potential to serve as safe spaces where wellbeing is supported, public interaction is encouraged, and all forms of learning are stimulated.



## 4.2 CHOs' Competency Gaps in Denmark

### Competency Gaps of CHOs' operators

- **Creative digital skills:** Producing podcasts, videos and VR tools are skills which are not traditionally a part of operating CHOs. This might be easier for larger organisations with a broader portfolio of professional employees in-house, but complicated for smaller CHOs where each employee carries out several functions.
- **SoMe knowledge:** Knowledge on how to extract and analyse user data on social media and, subsequently, how to incorporate this into media and marketing strategies
- **Change management:** CHO Leaders need knowledge within the field of change management. There is a massive and complex communication task in changing direction at such a fast pace, as was the case during the pandemic, and it is crucial that employees are included in the process.

### Recommendations for CHO staff and leadership in Denmark

**Focus on the potential users:** Target those who would not typically visit the museum. Making the knowledge and CH experiences relevant to a larger crowd is a way to strengthen the sector and democratize the CHOs.

**Creative communication:** To reach people who are not a part of the 'loyal user group', meeting people where they are and making information

available to them in their own space can make a change - be it in the form of a pop-up traveling exhibition or opening of a Tik Tok account. CHOs should not be afraid of stepping into new arenas of communication.

**Using unique end-user knowledge more advantageously:** CHOs have better opportunities to access the preferences and habits of online users than with physical users. Engagement and specific areas of interests can be directly measured. This provides a unique opportunity to tailor marketing campaigns to the crowds they wish to attract. Make use of knowledge from other disciplines such as machine learning, programming, content and value marketing.

**Crowdsourcing and citizen science:** Tendencies point towards an increase in participatory culture and democratization of CHOs. This makes an excellent opportunity for CHOs to engage with their users by making them co-creators of the cultural and scientific experience. In this context collaboration between CHOs, HEIs and the public is important in order to safeguard the quality, communication and structural framework of different initiatives.

**Integrate the digital in the experience:** The digital experience cannot stand alone; it should be an integrated part of the entire cultural experience.

**Train leaders in change management:** In times of pandemic, war, and climate change, CHOs must be prepared to change gear on short notice.



### 4.3 CHOs' Competency Gaps in Austria

#### Competency Gaps of CHOs' staff

There is a widespread difficulty in attracting talent indicates how difficult it is to find experts in digitalization for cultural heritage institutions. Among those working in the field of cultural heritage, we identified the following knowledge and skill gaps:

**Lack of IT knowledge:** The greatest gap in knowledge is the lack of technical/IT knowledge among those currently working in the CH field. Depending on the institution's needs, the competencies, methods and tools shown in Annex 2, would have to be expanded.

**Lack of interface management:** There is a lack of knowledge of agile project management methods/tools, such as "Design-Thinking" and "Scrum", the development of personas and user stories, which would facilitate the development of digital projects. In most cases, however, these methods are not carried out in-house but by external agencies, which means that their methodological potential is only exploited to a limited extent and for a limited period. The goal should be to consolidate the methodological competencies of agile project management in-house (Museum Academy Universalmuseum Joanneum, 2021).

**Lack of legal knowledge in digital humanities:** there is a lack of experts in the legal aspects of digital humanities.

**Lack of interdisciplinary cooperation:** Currently, there are still too few graduates from the fields of digital humanities in Austria who could take on an interface function between technology and the humanities in CHOs. Besides that, the lack of professionalisation within the discipline also plays a major role; programming cannot simply be learned in a workshop but must be taught in an academic environment (ZSI/Andrews, 2020, p. 126). However, trying to pack all competencies into a degree program cannot be the goal. Instead, teamwork and interdisciplinary cooperation should be promoted and further offers in cultural education for CH representatives should be made more visible and accessible (ZSI, 2020).

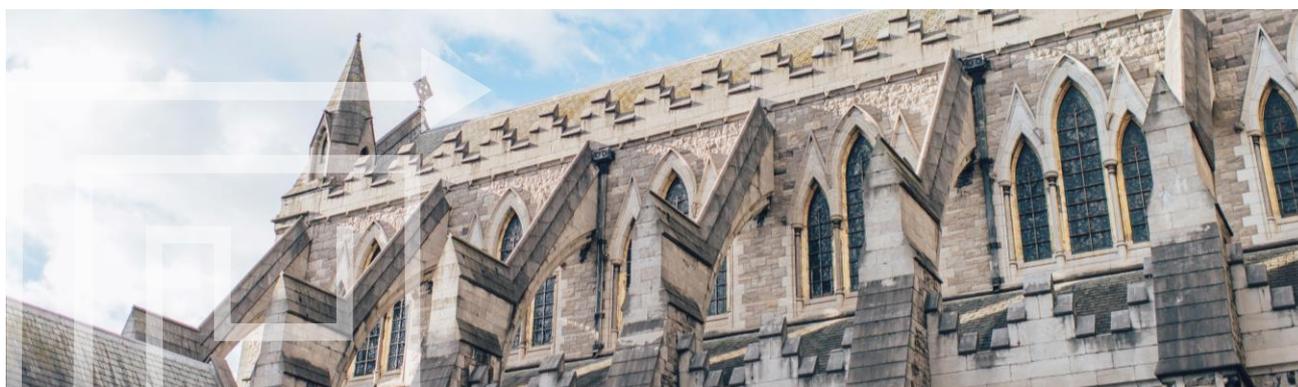
#### Recommendations for CHO staff and leadership in Austria

In the context of pan-European policies for the CH sector, at the structural level, Austria will meet the requirements of EU Regulation 2021/241 regarding planned investments in the area of digitization (see footnote 2). Additionally, a lot has happened in Austria in recent years in the sector of education and training in the field of digital CH. The Digital Humanities Course Registry website provides an overview of current education and training programs in the field of digital humanities. With 17 entries, Austria (i.e., along with Germany at 29, and Switzerland at 25) is among the countries with the largest range of educational

programs in this field (Digital Humanities Course Registry, 2022). However, this listing also makes it clear that opinions differ on what content, skills, and methods should be taught within the courses. This can be seen as a reason why there is still no Erasmus Mundus Master's program for Digital Humanities (ZSI, 2020).<sup>4</sup> In summary, the following general recommendations emerge:

- Scientific and technical **networking** should continue to be strengthened nationally and internationally
- **Infrastructures and digitization** must continue to receive **sustained support** in terms of technology, law and financing
- **Standards and services** to promote openness of data, methods and infrastructures should be developed and communicated transparently according to supply and demand. Quality criteria and standards should be introduced that allow the interoperability and further use of research results.

- The **relevance of the digital humanities** and, along with it that of the digital cultural heritage should be more **visibly anchored in societal discourse** (Center for Social Innovation (ZSI), 2020).
- **Expansion of the range of educational programs combining the humanities and technology**: Academic curricula and those of further education programs are, in part, too rigid and inflexible. This prevents targeted teaching and therefore runs the risk of societal irrelevance. Further education opportunities outside of university, and cooperation with businesses and companies on further training can counteract this. The focus here is on complementarity.
- Efforts should be made to **attract more people with an IT background to study digital humanities**. Well-trained programmers are needed to maintain quality standards (ZSI, 2020).



## 4.4 Competency Gaps of CHOs in Ireland

### Competency Gaps of CHOs' staff

In 2019, in anticipation of the launch of Ireland's future policy on Heritage (Heritage Ireland 2030) the Department of Culture, Heritage and the

Gaeltacht asked the Heritage Council to carry out a consultation and review process involving members of the public and people working in the

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<sup>4</sup> In terms of sustainable knowledge exchange among students, such a program would be desirable. Monika Voglgruber (Head of Communications & Digital, Belvedere) gives a positive testimony to the exchange of knowledge within Austrian museums. However, the research infrastructure must be further expanded. Christian Huemer (Belvedere, Head of Research Centre) proposes that the

Netherlands is a role model in this regard: "There, substantial funding programs have made it possible for several institutions with complementary collections to join forces and use the same Linked Open Data technologies" (Museumsbund, 2019, p. 61.).

heritage sector. The consultation process comprised of three meetings, two with the general public and one specifically aimed at workers in the sector. The two public meetings, which took place in Kilkenny (Midlands and Southeast Region), and Galway (West and Mid-West Region), provided a local context to issues in the heritage sector that expand into regional and national concerns (Heritage Council, 2019).<sup>5</sup>

The absence of CH in Heritage Ireland 2030 was widely criticised as many felt that CH allowed people to connect with other heritage elements, and it was a critical centre-point from which communities could engage with heritage. Other key issues related to CH, CHO's and their staff's skills that were recurrent throughout all the meetings included:

- **A lack of focus on biodiversity loss and climate change within CHOs.**
- **An attitude of enabling communities:** CH was singled out as an enabler for communities to come together and engage in CH. Professional support of softer communication skills was essential in supporting CH professionals and those working in statutory agencies' voluntary community activities.
- **Need for education, engagement and empowerment:** The need to engage and work with young people was highlighted strongly.
- **Technology was identified as both a threat and an opportunity:** The idea of an online portal to support communities in navigating the heritage infrastructure was frequently identified as a potential heritage resource.
- **Infrastructure:** The importance of creating an infrastructure for heritage networks (local, regional and national) that can address sectoral fragmentation.
- **Specificity to Irish culture:** The absence of references to the Irish language, dialect and

placemaking and naming were all considered to be lacking (Heritage Council, 2019).

**Major changes** that could impact Irish Heritage Organisations and staff included:

- The effects of climate change – wind, heat, flooding – on built heritage.
- **Social media**, in terms of its contribution to the **decline of community** and the oral history tradition, but also as an **opportunity to enhance access** to heritage.
- The **lack of access to technology** in parts of the country is isolating communities from resources, information and support.
- **Indigenous crafts and skills** to support the maintenance of our vernacular buildings and structures are declining; skills taught in the home such as basic gardening and own food production are no longer being passed down.
- The loss of cultural heritage will have a huge impact – we are not recording enough for the future. **The lack of visibility of cultural heritage** is a poor statement of support for its place in heritage

Ideas related to CHO's and **community engagement** that were raised include:

- A '**learn by doing**' approach to heritage; active participation and experiential, hands on activities.
- The development of a '**heritage summit**', brings together stakeholders at all levels to enhance knowledge sharing.
- There needs to be a stronger focus on how heritage can connect communities and individuals socially; the emphasis on connecting our tourists with heritage can overshadow the important role which heritage can play among those living in Ireland.

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<sup>5</sup> Attendees of the two public meetings were also asked three questions regarding the draft plans for the Heritage Ireland 2030 strategy, first, what is missing/what is most important? Secondly, what

changes happening now may impact our heritage? And finally, how can we work together to engage communities?

- There needs to be a greater investigation into **how heritage may be able to help those who are out of work**; such as offering support and training.
- **Social media and access to information** using technology can be a great resource.
- There are not enough heritage officers: the role should be supported with more staff in every county.
- **Heritage week** currently takes place in the summertime – it should instead happen during the school year when young people are around (Heritage Council, 2019).

The third consultation differed in that it was prepared to accommodate the thoughts and ideas of people who represented the heritage sector, staff, leaders and organisations. The focus of this sectoral consultation was on the three themes of the Heritage 2030 strategy, Leadership, Partnerships and Communities. Points related to CHOs and Leadership were raised:

- There are too many **demands on the time of local Heritage Officers** to effectively lead on a local level; more support should be given to Heritage Officers to work with communities
- There is too much **fragmentation in the heritage sector**; it should speak with one voice and consider itself holistically.
- A sound infrastructure for heritage management is needed to support **leadership and collaboration**, for example, through the creation of national, regional and local heritage networks.
- Tourism should not be the driver for heritage management

In the theme of Partnerships, key points for CHO's to ponder included:

- The sector should **work more with sporting organisations** / communities to reach a broader – and younger – audience, for example the Gaelic Athletic Association (GAA).
- There is a need for more public heritage champions and there should be **more**

**engagement with journalists** on the value and importance of heritage.

- Ireland's heritage sector needs to **engage more on a European level** – both in terms of EU institutions and opportunities, and with the heritage sector in other jurisdictions (knowledge-sharing, joint initiatives, joint history, etc.).
- The heritage sector should **work more with academia**; there should be a needs analysis of heritage disciplines in the third-level sector.
- Heritage and domestic skills need to be supported and maintained, including **heritage-focused apprenticeship programmes**

Areas of interest for CHO's within the theme of Communities:

- The linkages between cultural heritage and our built heritage need to be better aligned for the interpretation, **public engagement and communication** heritage stories.
- Heritage professionals and the sector need to **communicate better**: learn to listen and learn to communicate in a clear and understandable way.
- **Teenagers need to be engaged** specifically: there are limited opportunities for them to engage in the school system.
- Ireland needs to **recognise new heritage and culture too**: HI 2030 should also consider the need for other cultures to tell their story and be part of Ireland's future heritage (Heritage Council, 2019).

### Recommendations for CHO operators and representatives in Ireland

This report has looked at the different policy drivers for the Irish cultural heritage sector that will guide the development of Irish CHO's into the 2030's and beyond (see full policies in Annex 1).

Having analysed these policies, the pre-pandemic public and sectoral consultations and the post-pandemic survey of the CH sector, it is clear there

is a need for some changes, adaptations and reprioritising within the sector to thrive in this “new normal.”

- **A sector-wide skills mapping initiative** needs to be carried out with the government and the sector working together. This should take into account the skills of CHO staff, their strengths and weaknesses, and how they can share skills within and across organisations. This initiative should consider the CHO staff who have lost their jobs as a result of COVID-19 and who have been unable to regain them, to ensure their valuable skills aren't lost forever. This skills mapping initiative will give a realistic account of what skills are needed by CHO staff and leaders, allowing the sector and the government to move forward with retraining and educational initiatives to address any shortages.
- A **sector recovery/resiliency plan for future crises** should be put in place to ensure ways to mitigate job and revenue losses in CHOs. The lessons learned from COVID-19 cannot be forgotten, despite the tough decisions, memories and a general desire to move onwards and upwards.
- **Increased access to educational opportunities** in the CH sector should be made available, with a focus on practical apprenticeships in areas such as building, architecture and conservation, and internships in new skills areas such as using digital technology.
- CH needs to be made **more common and relevant in Irish society**. Dedicated events such as festivals, campaign weeks and open days should be organised and accessible to Irish people and tourists in conjunction with national holidays, celebrations and during peak tourist season. It is particularly important that students and young people have access to these events.
- **Unity in leadership and purpose** should be pursued by leaders in the sector and government representatives. Many organisations and groups within the sector are competing for time, funding and skills. A more aligned and collaborative approach should be prioritised so the sector can have more presence and stronger influence. This could be achieved through new networks devised by local, regional and national leaders.

## 05 | COOPERATION POTENTIAL OF HEIS WITH CHO

The rich and diverse CH across the EU shines evidence on the role that HEIs have played in the creation and cohesion of European identities. Study and research programs promote interdisciplinary collaboration, in response to an increased demand for training in research and management of CH assets. As an interdisciplinary study area, CH contributes to understanding identities and promoting cohesion in communities disrupted by change and economic instability.

CH reserves a central role in European policies and strategies that aim to raise awareness of Europe's cultural heritage through education and maximise the impact of the Erasmus+ programme within this field. Additional, European policies outline how empowering the younger generations through actions in schools, Erasmus+, Discover EU and the European Solidarity will benefit Europe's CH; a tool for education, youth development and active citizenship (European Commission, n.d.).

### 5.1 HEI-Society Collaboration for Cultural Heritage preservation

How do the different actors in a Triple Helix collaboration relate to each other and to the preservation of CH? An exploratory study by SAUL Saung Angklung Udjo, UNESCO's recognized institution in preserving cultural heritage, implemented a triple helix scheme to preserve cultural heritage within the tourism industry. Through adopting a qualitative approach, SAUL aimed to develop an in-depth understanding of the relationship between cultural heritage and the Triple Helix concept. For the preservation of cultural heritage, the study shows a promising scheme in which art idealism, commercialization, and Triple-Helix concept complement each other in a harmonic way (Setyagung et al., 2013). Figure 1 illustrates how these elements and the triple helix can work

together to support the preservation of cultural heritage.

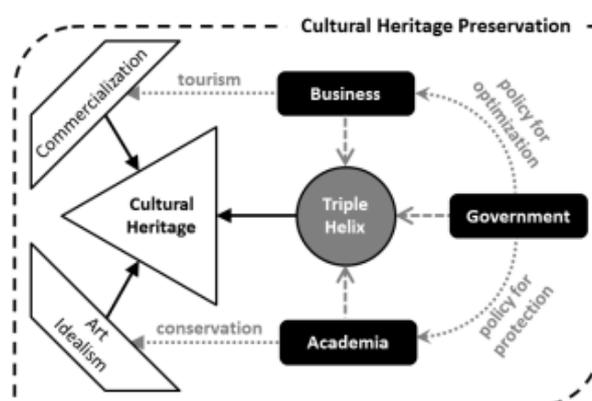


Figure 1. The harmony between art idealism, commercialization and triple-helix collaboration (Setyagung et al., 2013).

### 5.2 Barriers and motivators for HEI-CHOs collaboration

Through the ongoing and previous cooperation between CHOs and HEIs, multiple projects have identified the main barriers and motivators of these collaborations. The Collaborative Arts Triple Helix (CATH) project, based at the Digital Humanities Hub at the University of Birmingham has conducted research into triple helix collaborations of three sectors: higher education (HE), including arts and humanities researchers and staff from the partner universities' cultural collections; small cultural organisations (SCOs), including galleries, archives,

country houses, theatre groups, a rugby club and a library and; small and medium sized enterprises (SMEs), including graphic designers, design agencies, and software developers (UK Research and Innovation, n.d.). The main **benefits**, or motivators for HEIs and CHOs, are the following:

- Access to HEI research
- Conducting research and surprising research findings for HEI

- Reputational gains from working with prestigious HEI partners
- Access to technical expertise of organisations
- Improved knowledge and understanding of other sectors
- Improved problem solving
- Development of future grant applications
- Development of new products

These motivators are comparable to the main motivators for University-Business Collaboration (UBC) in general, which are the access to knowledge, research and technologies (Davey et al., 2018). On the other side there are also barriers to collaboration. The main **barriers** that they identified are (UK Research and Innovation, n.d.):

Different language (understanding of terms)

- Lack of mutual trust between individuals engaged in collaboration
- Lack of role clarity amongst partners
- Lack of financial compensation for SMEs and small CHOs
- Case flow challenges for SMEs and small CHOs

The Pioneering Places projects in the UK, in which CHOs involve local communities to explore new visions for ‘lost’ or overlooked heritage sites, have also identified the lack of funding as one of the main barriers (Jones-Hall, 2020). Although collaborations are possible without funding, these are likely to be limited in scope and scale.

These barriers are very similar to the general main barriers to UBC, which are related to the **lack of funding** and other resources by businesses, university and the government, followed by **cultural barriers**, i.e., the lack of scientific knowledge within business, different modes of communication and language, different time horizons, and different motivations (Davey et al., 2018).

A research assessment for developing a model to sustain digital CH found that partnerships between CHOs and external institutes and partners are not always beneficial. Grants and collaborations with

other more well-resourced institutions and partners have long been the norm for CHOs in supporting digital initiatives. However, for CHOs in less-resourced regions of the world, these relationships have often been extractive. A common scenario is that the partner collaborators that support a digitisation project keep digital copies of the developed digital tools and methods. On the surface, this action ensures the content’s longevity, but the reality feels different to those on the ground. The source CHO is left with the developed digital tools and methods, but not with the means to sustain them, a matter that raises the topic of “digital colonialism.”<sup>6</sup> On the other hand, partnerships, including regional and global networks, are desired by CHOs, so that challenges and solutions can be shared in mutually beneficial ways (ICCRUM, NISV and AVP, 2021).

### 5.3 Facilitators for successful CHO-HEI collaboration

Knowing that there are many benefits to collaboration but also barriers, it is important to share the facilitators and common key elements of successful CHO-HEI collaborations. These key elements are the following (UK Research and Innovation, n.d.):

- **Shared understanding** of what each partner is seeking with this collaboration, both individually and collectively
- Commitment to a **common goal**
- **Clear understanding of time commitments** required from all partners and participants.
- Education, communication and understanding of the history and heritage of the site but also an understanding that this heritage is shared – i.e., the importance and meaning of the heritage and history of site can come equally from the community and/or educational partners, as well as from the heritage partner

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<sup>6</sup> The “digital colonialism” term refers to a modern-day “Scramble for Africa” where largescale tech companies extract, analyse, and own user data for profit and

market influence with nominal benefit to the data source.

- Whilst collaboration works best when all partners are seen as equals, a **lead partner** is essential to help drive the process forward

These items build upon the main facilitators for cooperation between HEIs and businesses, which are the existence of mutual trust, a shared goal, funding, and mutual commitment (Davey et al., 2018).

## 5.4 Shapes and sizes of CHO-HEI collaborations

The collaboration of CHOs and HEIs can exist in many different formats, and even involve several types of activities. Not only do we see a role for academics to support or lead an investigation, but students also play their role in supporting CHOs (albeit mostly indirectly).

There are many examples to be found of institutions, projects, and labs that conduct research together. The Cultural AI Lab, for example, is a collaboration between HEIs, institutes and CHOs, that actively tries to bridge the gap between HEIs and CHO. Their aim is to explore and utilise the potential of AI for cultural research such as the analysis of digitalised cultural collections (ICAI, n.d.).

Perhaps more important within the scope of this project, is the involvement of students in collaboration with CHOs. One of the ways in which the collaboration can work is by promoting cultural heritage sites and museum collections to students. Examples include creating awareness of the importance of the preservation of cultural heritage amongst students in engineering and computer science (Redweik et al., 2017), or implementing VR applications to improve the accessibility of cultural heritage in education, such as in the REVEALVR project (CORDIS, n.d.), or through gamification (Bonacini & Giaccone, 2022). Another example, in which students are more actively involved, are two student projects that were hosted at Royal United Services institute (RUSI) museum. In these projects, students were involved in supporting the front-end aspects of digitization initiatives through weekly hour-long lectures and seminars over the course of two semesters.

However, the involvement of students in supporting CHOs, rather than only receiving education through CHOs is still lacking in examples and should be further explored.

## 06 | COMPETENCY GAPS OF HEI ACADEMICS AND STUDENTS

In the highly digitalized post-Covid-19 world, there is a noticeable gap in knowledge, skills and attitudes necessary to deliver digital challenge-based and problem-based learning approaches among the HEI academic staff and educators. By equipping HEI academic staff and educators with knowledge, skills and resources to engage with cultural heritage sector representatives in educational activities, they can organize problem-based learning interventions in multidisciplinary student teams. In general, we see a trend that there is already a lot of ongoing cooperation between the CHOs and HEIs, and that it is following an upwards trajectory. At the same time, it is also acknowledged that there is much untapped potential (Markham et al., 2019). A research report commissioned by Newcastle University shows that the collaboration between the CHOs and HEIs is stronger in some areas than in others. One such example of a 'cold spot' (where there is a lower level of engagement) is the wider historic environment. To support the upwards trajectory of ongoing cooperation, it is important to know the main motivations and facilitators for this cooperation, but also the different barriers that play a role.



### 6.1 Competency Gaps of HEI Academics and Educators in Italy

The Covid-19 pandemic generated several unforeseen new challenges that HEIs had to face, looking for solutions at a very fast pace. The external and internal challenges that HEIs face, such as financial changes decided by local governments, innovation, educational policy updates, youth unemployment, mobility of experts etc., are not new issues, even though they represent ongoing matters that researchers work on to identify potential solutions (Gibb and Haskins, 2013; Kitson et al., 2009; Mitra, 2012).

Like any other organisation, **HEIs had to identify ways to adapt to the pandemic** so that they could continue to manage their activities effectively with students, as well as researchers, academics and with the administrative staff (Nandy, Lodth & Tang, 2020).

An immediate consequence of the pandemic was that **HEIs had to stop or dramatically reduce face-**

**to-face interactions with students** and move towards virtual interaction or blended classes, where both physical and virtual presence are allowed. To confront this unforeseen scenario, HEIs needed to identify and adopt a resilient recovery model (Nandy, Lodth & Tang, 2020) to leverage their ability to adapt to the threats created by the pandemic. Such a resilience model may create opportunities to translate the HEIs experience to other fields, such as the one represented by CH organisations, which is very close to the Education field where HEIs operate.

Thanks to the important role in their community, **HEIs may become stronger drivers for co-design and partnership models** that will involve students, citizens, workers, tourists, entrepreneurs, teachers, the public administration and cultural institutions. In this scenario, universities may act as facilitators to promote cooperation among a

diverse set of stakeholders. Moreover, HEIs can co-create new sustainable models to support CHOs in this moment of transition, whilst generating innovative learning environments for civil society, industries and local governments.

This approach may strengthen the resilience attitude of HEIs and motivate stakeholders to co-operate to rebuild the system and adapt to the “new normal.”



## 6.2 Competency Gaps of HEI Academics and Educators in Denmark

“Teachers at HEIs are still primarily hired and rewarded for their research. Therefore, the development of digital teaching skills is often a slow process that relies on individual initiatives” (University of Copenhagen, n.d.). During the pandemic, the need for digital skills amongst educators exploded and most have had to adopt a ‘learning-by-doing’ method in order to comply to the new and ever-changing conditions imposed by repetitive lockdowns, openings and partial openings (Aarhus School of Business and Social Science, 2022). These unstable measures have forced educators to adapt to a more digitised way of teaching in record time - not only through a virtual format but also through a hybrid one. These new formats have brought along a range of challenges, such as Zoom fatigue, technical difficulties with sound, picture and internet connection, along with a lack of opportunities for informal social interaction. The hybrid format, however, seems to be the least preferred of all - at least by educators who often experience difficulties in accommodating the needs of all students and being equally present with two different audiences. To conduct a hybrid class, one must spend extra time setting up the technical equipment and pay attention to both questions in

the chat and in the classroom. Ideally, hybrid teaching would entail both a (technical) facilitator and an educator present in the classroom at the same time. It is a completely new style of teaching, and it is therefore crucial that universities equip educators with the proper didactical tools and knowledge needed to conduct classes in a hybrid format (Højsgaard 2020). According to Rikke Toft Nørgård, associate professor in educational design and technology, there is an important distinction between an understanding of ‘hybrid’ as “a technical solution or set-up,” versus an “understanding of hybridity as a certain kind of institutional or academic being connected to deep structures of theory, method and practice within the field of hybrid higher education” (Nørgård 2021).

Digitization of teaching has long been a strategic priority in Danish universities. At the University of Copenhagen, the researchers at the centre for university pedagogy (TEACH) are involved in a number of initiatives that aim to develop educators’ competencies in digital teaching (University of Copenhagen, n.d.-b). They develop practical tools and guides that help educators in their daily work, such as how to conduct a hybrid class by activating students as co-facilitators and

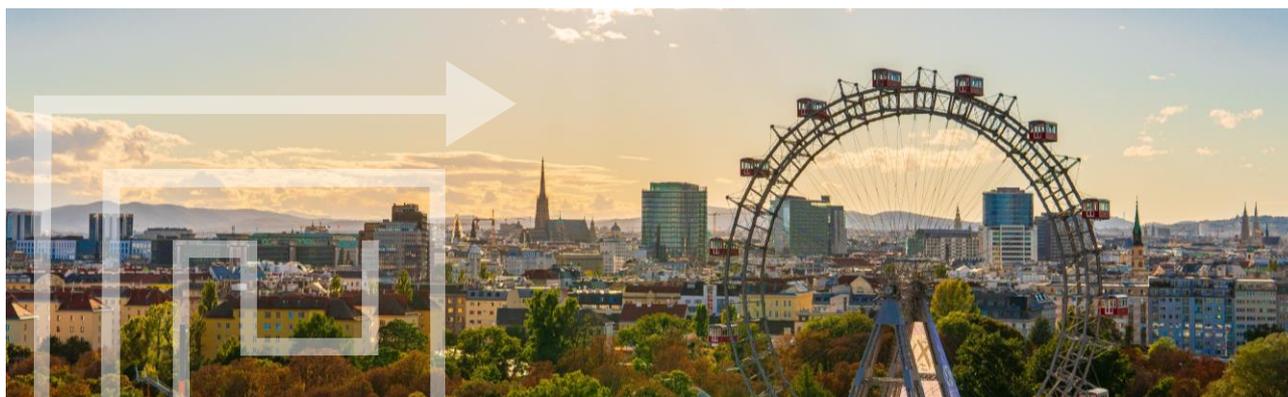
how to use podcasts and videos as an effective didactic tool. The TEACH centre is also leading the European project CUTE - Competencies for Universities using Technology in Education, which intends to map the current institutional approaches to digital competence development and subsequently develop a strategy for digital competencies for university teaching (University of Copenhagen, n.d.-a).

Another initiative is the project 'Digital Curriculum', which is a partnership between five Danish universities that "aims to accelerate and support the development of digital knowledge, digital methods and digital competencies required in the disciplines of higher education" (Aarhus University, 2022). The purpose of the project is to equip teaching staff in the SSH with the right competencies to educate students with sufficient

and up-to-date digital skills that match the expectations and demands of both employers and society

To summarise, the knowledge, skills and competency gaps of HEI educators are:

- A general 'best-practice' on how to conduct virtual teaching as opposed to solely learning from peers or learning by doing; recognising that not all subjects are suitable for virtual teaching.
- Technical skills to master virtual and hybrid teaching.
- A comprehensive framework of theory and methods on how to master hybrid education programmes.
- Knowledge of the use and potential of digital communication forms such as video, podcasts and screencasts.



### 6.3 Competency Gaps of HEI Academics, Educators and Students in Austria

At Austrian universities, there are currently two master programs offered in Digital Humanities, one in Graz (since 2017) and one in Vienna (since 2020).<sup>7</sup> The programs target humanities and cultural studies graduates with a corresponding

bachelor's degree and a completed EC (enhancement curriculum) in Digital Humanities, in which the basics of programming languages and digital humanities theories are taught. Computer scientists are not excluded from the master's

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<sup>7</sup> In addition to the courses offered in Graz and Vienna, Danube University Krems deserves special mention. Although there is no program there that explicitly deals with digital humanities, there are several educational programs that focus on digitization and cultural heritage: Master program Image Sciences, Master program Media Arts Culture, Master program MediaArtHistories, Certified Program Crossmedia, Certified Program Cultural Data Studies, Certified

Program Digital Collecting, Certified Program Digital Cultural Education in Museums and Collection Institutions, and the Certified Program Digital Curating in Museums and Collection Institutions. Danube University Krems also offers degree programs and certified courses in digital transformation in management and law, and in digital communications and new media.

program at the University of Graz, but the basics of societies are not taught, as this knowledge is presupposed.<sup>8</sup> However, it must be mentioned that the university programs tailored for students in the humanities do not bring sufficient expertise to maintain the quality standards in the field. Without the enduring participation of well-trained computer scientists, sustainable digital transformation in the CH sector doesn't stand a chance (ZSI/Andrews, 2020).

Hence, while **computer-aided analysis methods** and indexing procedures have already found their way into the curricula to the greatest possible extent, courses on methods from the fields of publication and communication structures, standards, as well as the field of (long-term) archiving are rarely available. Such provided methods in the students' curricula should be expanded at the academic level and in further training opportunities for digital CH professionals (ZSI, 2020).

Moreover, **methods of visualization such as 3D modelling**, 4D and augmented reality are mainly taught at technical universities, with the Technical University of Vienna leading in this teaching. Methods that deal with virtual, collaborative work environments, as is the case in game studies, for example, also tend to be taught at technical universities.

In addition to the courses offered in Graz and Vienna, Danube University Krems deserves special mention. Although there is no program there that explicitly deals with digital humanities, there are several educational programs that focus on digitization and cultural heritage: Master program Image Sciences; Master program Media Arts Culture; Master program Media Art Histories; Certified Program Crossmedia; Certified Program

Cultural Data Studies; Certified Program Digital Collecting; Certified Program Digital Cultural Education in Museums and Collection Institutions; and the Certified Program Digital Curating in Museums and Collection Institutions.

More programs covering competency gaps important for the sector transformation is the Danube University Krems, which also offers degree programs and certified courses in digital transformation in management and law, and in digital communications and new media.

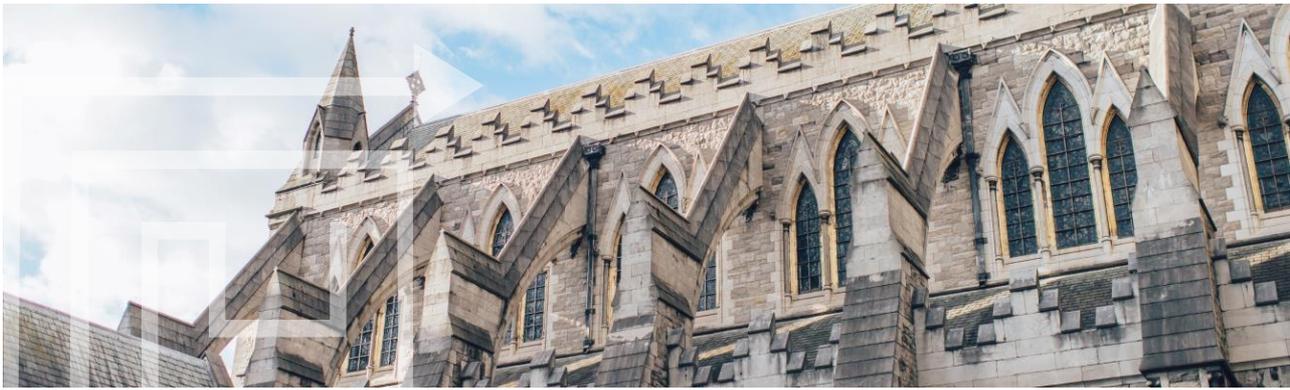
Austrian universities of applied sciences also offer courses at the intersection of these two fields. For example, the exhibition design course at the Joanneum University of Applied Sciences in Graz or courses in applied computer science such as Data Science and Artificial Intelligence. Moreover, The University of Applied Arts in Vienna offers the university course ECM (educating, curating and managing), which explores methods and theories from the fields of digitization and cultural heritage.

It is worth noting that most part-time and further education courses are fee-based, and some full-time programs such as the Vienna Digital Humanities program, explicitly states that studies cannot be completed alongside employment. This raises the question of whether the costs and courseload are an obstacle for employees to take up these offers.

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<sup>8</sup> This discrepancy is also reflected in the curriculum of both courses: programming languages such as R, Python, JavaScript are on the agenda, as well as

network analysis or the creation of digital editions (see curriculum of the respective study programs).



## 6.4 Competency Gaps of HEI Academics, Educators and Students in Ireland

There are several opportunities for students entering third level education to pursue their interests and a career in the CH area. Many of these courses rely on and foster strong relationships with CHOs to provide expanded knowledge and practical experience for students beyond classroom learning.

Trinity College Dublin offer an M.Phil. / P.Grad.Dip in Public History and Cultural Heritage that prepares graduates for management of CHOs and sites. Collaboration with CHO's comes in the form of a three-month internship at organisations which have previously included: Dublin City Gallery; Dublin City Library and Archive; Glasnevin Trust; the National Gallery of Ireland; the National Library of Ireland; the National Museum of Ireland; and St Patrick's Cathedral. There is also engagement with CH leaders and practitioners through discussion workshops with novelists, artists, museum directors and heritage policy makers (Trinity College Dublin, 2022).

National University of Ireland Maynooth offers a level 8 Certificate in Irish Cultural Heritage through the Centre for Irish Cultural Heritage, School of

Celtic Studies. The certificate involves a combination of lectures, field trips, seminars and workshops with a particular emphasis on archaeological, literary, historical and linguistic evidence. Practical experience is a key element of the programme and there is field work carried out at CH monuments such as the UNESCO World Heritage sites of Newgrange and Knowth, the Hill of Tara, and the monastic settlement of Clonmacnoise (Maynooth University, n.d.)

University of Limerick offer an online master's in Public History & Cultural Heritage that includes modules focused on contemporary issues in public history, including controversies, collaborations, and communications. Students primarily go on to work in the areas of culture, heritage, education, tourism, local history and civic development. This programme is also aimed at CHO staff in museums, archives, cultural heritage sites or freelancers to continue their professional development (University of Limerick, n.d.).

## 07 | ANNEXES

### Annex: 1: Cultural Heritage Policy Drivers in Ireland

**Table 1: Government's *Culture 2025* policy framework.** The table summarises the policy's key features and objectives (Ireland 2017 report, 2017)

Cultural Heritage Policy	Key Features	Key Objectives
<p><b>Culture 2025</b></p> <p><b>Scope:</b></p> <p>I. Local ; II. Regional ; III. National ; IV. International</p> <p><b>Agencies Responsible:</b></p> <p>I. Department of Arts, Heritage; Regional, Rural and Gaeltacht Affairs</p> <p>II. Arts Council;</p> <p>III. Heritage Council;</p> <p>IV. Local authorities and councils</p>	<p>Culture 2025 is Ireland's first Framework Policy to embrace the whole cultural sector.</p> <p>It is the beginning of a journey - rather than a destination - that will bring together all those involved in the arts, film, broadcasting, visual arts, cultural heritage, the Irish language and Gaeltacht with Government departments, State agencies and local authorities.</p>	<ul style="list-style-type: none"> <li>• Encourage ambition, risk, innovation and excellence in the creative and cultural sectors;</li> <li>• Create opportunities for increased citizen participation, especially for those currently excluded or at risk of exclusion;</li> <li>• Ensure that culture is seen as a core component of the work across government;</li> <li>• Recognise and support the cultural contribution of the voluntary sector;</li> <li>• Ensure the robustness of systems which safeguard and promote Ireland's cultural heritage;</li> <li>• Support a thriving Irish language, with vibrant Gaeltacht communities and other language networks;</li> <li>• Promote Ireland's culture on the international stage, and</li> <li>• Finance this vision with well-designed funding mechanisms.</li> </ul>

**Table 2: Creative Ireland Programme (2017-2022).** The table summarises the policy's key values and expected results (Ireland 2017 report, 2017).

Cultural Heritage Policy	Key Values	Expected Results
<p><b>Creative Ireland</b></p> <p><b>Scope:</b></p> <p>I. Local</p> <p>II. Regional</p> <p>III. National</p> <p>IV. International</p> <p><b>Agency Responsible:</b></p> <p>I. Government of Ireland</p>	<ol style="list-style-type: none"> <li>1. The value of culture and heritage to our lives and our communities;</li> <li>2. The right of everyone to participate in the cultural life of the nation;</li> <li>3. The importance of the Irish language, our CH heritage, folklore, games, music and the uniqueness of our Gaeltacht areas;</li> <li>4. The value of cultural diversity, informed by the many traditions and social backgrounds now in Ireland;</li> <li>5. The value of culture as a means of fostering a more sustainable future for Ireland, including through economic and social policy, and</li> <li>6. The value of culture in presenting Ireland to the world.</li> </ol>	<ul style="list-style-type: none"> <li>• A national plan to enable every child in Ireland to access tuition in music, drama, art and coding</li> <li>• A Culture and Creativity plan in every county</li> <li>• A Culture Team, Director-led, configured to local needs, in every county</li> <li>• The Departments of Arts, Heritage, Regional, Rural and Gaeltacht Affairs and Social Protection will work together to devise a mechanism to assist self-employed artists who have applied for Jobseekers Allowance. This would be a pilot scheme.</li> <li>• A plan for the development of each National Cultural Institution to 2022</li> <li>• A five-year capital investment programme for the culture and heritage sector</li> <li>• An industry-wide, long-term plan, for Ireland as a global hub for the production of Film, TV Drama, and Animation</li> <li>• A unified international identity and communications programme for Ireland</li> <li>• A new Creative Ireland Forum conference to showcase the best national and international thinking will have taken place.</li> </ul>

**Table 3: Heritage Ireland 2030.** The table summarises the policy’s key themes and actions related to skills development (Department of Housing, Local Government and Heritage, 2022).

Cultural Heritage Policy	Key Themes	Actions related to skills development
<p><b>Heritage Ireland 2030</b></p> <p><b>Scope:</b></p> <p>I. Local II. Regional III. National</p> <p><b>Agencies Responsible:</b></p> <p>I. Department of Housing, Local Government and Heritage</p>	<p>Theme 1: National Leadership and Heritage</p> <p>Theme 2: Heritage Partnerships</p> <p>Theme 3: Communities and Heritage</p>	<ul style="list-style-type: none"> <li>Invest in heritage skills training, continuous professional development and apprenticeships, increasing professional capacity and new education and training opportunities</li> <li>Improve use of digital technology to inform evidence-based decision-making in heritage and to make information on heritage accessible and available to all</li> <li>To develop and maintain knowledge and skills in traditional building, conservation architecture, site conservation and protection, heritage interpretation and collections management and care</li> <li>Review and audit heritage skills and address gaps in heritage skills education/training opportunities.</li> <li>Establish a National Centre for Traditional Building, Conservation and Maritime Skills in conjunction with third-level institutions and the HEA.</li> <li>Develop and implement a Heritage Skills Action Plan in conjunction with the National Skills Strategy and an accredited traditional-building skills programme in collaboration with Higher Educational Authority</li> </ul>

**Table 4: Investing in Our Culture, Language and Heritage (2018-2027) Policy –** The table summarises the policy’s goals related to CH sector and CHO’s and Related Actions (Government of Ireland, 2018).

Cultural Heritage Policy	Goals related to CH Sector and CHO’s	Actions related to CHO Skills
<p><b>Investing in Our Culture, Language and Heritage (2018-2027)</b></p>	<ol style="list-style-type: none"> <li>Strengthen Ireland’s reputation as a leader in the cultural arena through the development of a world-class network of cultural and heritage infrastructure;</li> <li>Address longstanding infrastructural issues in our National Cultural Institutions;</li> <li>Secure our national literary and archaeological collections through the provision of storage facilities of an international standard, and</li> <li>Develop a vibrant Media Production and Audio-Visual sector, bringing new economic investment</li> </ol>	<p><b>Digitisation:</b></p> <ul style="list-style-type: none"> <li>Enhance Institutions outreach and education programmes through greater access to the collections held</li> <li>Increase the quality and quantity of metadata that Ireland shares on the Europeana platform</li> <li>Allow for the display and discoverability online of more collections</li> <li>Work in partnership with other organisations to support digitisation projects of collections of national significance</li> </ul> <p><b>Audio Visual Sector:</b></p> <ul style="list-style-type: none"> <li>Co-production funding to support the development and production of more projects such as Room and Brooklyn which were Irish and international co-productions;</li> <li>Development funding to increase the value of Irish productions in the marketplace by ensuring they are fully developed before entering production;</li> <li>Funding to encourage the production of new Irish TV drama content.</li> <li>A Regional Production Fund aimed at assisting with the cost of filming outside of the Dublin and Wicklow regions</li> <li>Additional Training of film workers and crew particularly in the regions.</li> </ul>

## Annex 2

**Table 5: Overview of the methods and tools currently used in Austria's cultural heritage institutions,**  
source: Zentrum für Soziale Innovation (ZSI), 2020, p. 96.

Process	Mentioned Method, Activity and Keyword (Selection)
(Long-term-) archiving	Digital restauration, digitization, take-over of collection and reworking, analysis of sources (material, technique) and forensic, (further-) development of repositories and management system
Edition and exploitation process	Automatic recording and recognition (Scans and OCR), spectroscopy (multispectral analysis), transcription, digitization, information extraction, pattern recognition, speech recognition, scripture recognition, digital editions (works, notes, literature), linking of data and objects, contextualisation, metadata, information modelling, data cleaning and correcting, source analysis, palaeography, coding, eye tracking
Computer-assisted analytic process	Learning corpora, machine learning, big data, search engines, computer vision, classification, simulation, semantic processes and text analytics, natural language processing, recognition of patterns, text and data mining, topic modelling, argumentation mining, network analysis, word embedding, APIs, knowledge modelling, statistics, GIS, R, Python, Perl, JavaScript, Hadoop
Visualisation	3D-modelling, 4D, augmented reality, design of interfaces, storytelling, visual analytics, network-visualisation, reconstruction of lost places, longitudinal /temporal visualisation, holograms
	Crowdsourcing, Virtual Reality, Deep Space (AEC), Gamification, Tagging, collaborative annotating and coding, commenting
Virtual collaboration work environment	TEI, MEI, Linked Open Data, RDF, Semantic Web, terminology, controlled vocabulary, ontology, domain dictionary, quality assurance, indicators for evaluation, recommendations, instructions
Standards	App development, subtitles, synchronisation, online catalogues, licensing, reviews, online open access journal platform development, e-learning, deep space (AEC), research data management, open data guidelines, FAIR principles, meta-data, data papers
Publication and Communication Culture	

## 08 | REFERENCES

- Aarhus School of Business and Social Sciences. (2022) *Rapport om coronaerfaringer*. Retrieved May 17, 2022. [www.medarbejdere.au.dk/fakulteter/bs/naevn-og-udvalg/universitetspaedagogisk-styregruppe/rapport-om-coronaerfaringer](http://www.medarbejdere.au.dk/fakulteter/bs/naevn-og-udvalg/universitetspaedagogisk-styregruppe/rapport-om-coronaerfaringer).
- Aarhus University (2022) *Digital Curriculum*. Retrieved from [www.digitalcurriculum.au.dk/](http://www.digitalcurriculum.au.dk/)
- Agrawal, S., De Smet, A., Lacroix, S. & Reich, A. (2020). To emerge stronger from the COVID-19 crisis, companies should start reskilling their workforces now. *McKinsey Insights (Issue May)*. Retrieved from [www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/to-emerge-stronger-from-the-Covid-19-crisis-companies-should-start-reskilling-their-workforces-now](http://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/to-emerge-stronger-from-the-Covid-19-crisis-companies-should-start-reskilling-their-workforces-now)
- Allnutt, C. (2021). *Can Venice reinvent itself?* Financial Times. Retrieved from [www.ft.com/content/ff4c32eb-b34e-4638-a0c9-1c6656906b02](http://www.ft.com/content/ff4c32eb-b34e-4638-a0c9-1c6656906b02)
- ARGE Digital Museum. (2021). *Empfehlung der ARGE Digitales Museum im Rahmen des Museumsbunds Österreich*. Retrieved from: [www.museumspraxis.at/?p=2640](http://www.museumspraxis.at/?p=2640).
- Belvedere (n.d.-a) *Open Content*. Retrieved from [www.belvedere.at/en/open-content](http://www.belvedere.at/en/open-content)
- Belvedere (n.d.-b) *Community Outreach*. Retrieved from [www.belvedere.at/community-outreach](http://www.belvedere.at/community-outreach)
- Bonacini, E., & Giaccone, S. C. (2022). Gamification and cultural institutions in cultural heritage promotion: A successful example from Italy. *Cultural trends*, 31(1), 3-22.
- Borelli, B. (2020, April 1). Coronakrisen får kulturlivet til at satse online. *Akademikerbladet*. Retrieved May 17, 2022, from [www.akademikerbladet.dk/aktuelt/2020/marts/coronakrisen-faar-kulturlivet-til-at-satse-online](http://www.akademikerbladet.dk/aktuelt/2020/marts/coronakrisen-faar-kulturlivet-til-at-satse-online)
- Brunton, J. (2022, April 20). Has the pandemic changed Venice for ever? What visitors to the city can expect this year. *The National News*. Retrieved from: [www.thenationalnews.com/travel/2022/04/20/has-the-pandemic-changed-venice-forever-what-visitors-to-the-city-can-expect-this-year/](http://www.thenationalnews.com/travel/2022/04/20/has-the-pandemic-changed-venice-forever-what-visitors-to-the-city-can-expect-this-year/)
- Bundesministerium für Bildung Wissenschaft und Forschung. (n.d.). *Open Science*. [www.bmbwf.gv.at/Themen/HS-Uni/Hochschulgovernance/Leitthemen/Digitalisierung/Open-Science.html](http://www.bmbwf.gv.at/Themen/HS-Uni/Hochschulgovernance/Leitthemen/Digitalisierung/Open-Science.html)
- Bundesministerium für Digitalisierung und Wirtschaftsstandort. (2021). *Digitalisierungsbericht 2021*. Now for tomorrow. Digitalisierung für Wachstum und Zukunftssicherung. (p. 46). Retrieved from [www.digitalaustria.gv.at/digitalisierungsbericht.html](http://www.digitalaustria.gv.at/digitalisierungsbericht.html).
- Bundesministerium für Finanzen. (2021). Österreichischer Aufbau- und Resilienzplan 2020-2026. Retrieved from [www.parlament.gv.at/PAKT/VHG/XXVII/III/III\\_00311/index.shtml#](http://www.parlament.gv.at/PAKT/VHG/XXVII/III/III_00311/index.shtml#).
- Cacciatore, S., Panozzo, F. (2022). Strategic mapping of cultural and creative industries. The case of the Veneto region. *Creative Industries Journal*, 1-17. [www.tandfonline.com/loi/rcij20](http://www.tandfonline.com/loi/rcij20)

- Christosnet (2020). Drive-in gudstjenester – Danmark from [www.chrnet.net/en/dk/drive-in/](http://www.chrnet.net/en/dk/drive-in/)
- ChristosNet (2020). *Drive-in services – Denmark*. Retrieved from: [www.chrnet.net/en/dk/drive-in/](http://www.chrnet.net/en/dk/drive-in/)
- CORDIS. (n.d.). *Realising Education through Virtual Environments and Augmented Locations*. [www.cordis.europa.eu/project/id/732599](http://www.cordis.europa.eu/project/id/732599)
- Culture Action Europe (2020). The Future of Culture and Creative sectors in post-COVID-19 Europe. Retrieved from file:///C:/Users/Administrator/Downloads/CAE-ECFstatementPost-COVID-19Europe.pdf
- Dalgård, C. (2022, April 20). *Corona-krisen skyld i nedskæringer og fyringer: Nu tvinges museer til at tænke alternativt*. TV2 Lorry. Retrieved on May 17, 2022. [www.tv2lorry.dk/koebenhavn/corona-krisen-skyld-i-nedskaeringer-og-fyringer-nu-tvinges-museer-til-at-taenke-alternativt](http://www.tv2lorry.dk/koebenhavn/corona-krisen-skyld-i-nedskaeringer-og-fyringer-nu-tvinges-museer-til-at-taenke-alternativt).
- Danmarks Statistik. (2021). Gæsterne er vendt tilbage til museerne. Retrieved from [www.dst.dk/da/Statistik/nyheder-analyser-publ/nyt/NytHtml?cid=40265](http://www.dst.dk/da/Statistik/nyheder-analyser-publ/nyt/NytHtml?cid=40265)
- Davey, T., Meerman, M., Galan Muros, V., Orazbayeva, B., & Baaken, T. (2018) *The State of University Business Cooperation in Europe*. [www.ub-cooperation.eu/pdf/final\\_report2017.pdf](http://www.ub-cooperation.eu/pdf/final_report2017.pdf)
- Department of Housing, Local Government and Heritage. (2022). *Heritage Ireland 2030* (pp. 47-67). Retrieved from [www.file:///C:/Users/con\\_m/Downloads/216633\\_d5e7370d-ee0e-41a8-81b5-9bc46bc75e17.pdf](http://www.file:///C:/Users/con_m/Downloads/216633_d5e7370d-ee0e-41a8-81b5-9bc46bc75e17.pdf)
- Devane, A. (2020, October 29). Covid-19 crushes Italy's culture. *Wanted in Rome*. Retrieved from: [www.wantedinrome.com/news/Covid-19-crushes-italys-culture.html](http://www.wantedinrome.com/news/Covid-19-crushes-italys-culture.html)
- DIF & DGI & DUF. (2019). *Politisk udspil om foreningsliv og frivillighed - værdier og anbefalinger*. [www.dif.dk/media/lyqcsego/06528-forenings-og-frivillighedsudspil-danmarks-idrtsforbund\\_190329\\_low\\_final.pdf](http://www.dif.dk/media/lyqcsego/06528-forenings-og-frivillighedsudspil-danmarks-idrtsforbund_190329_low_final.pdf). 17 may 2022.
- DIF(a). (2021). Corona stopper flere års fremgang i idrætsforeningerne. Retrieved May 17, 2022 from [www.dif.dk/nyheder/2021/04/20210408\\_coronastopperflerersfremgangiidrtsforeningerne](http://www.dif.dk/nyheder/2021/04/20210408_coronastopperflerersfremgangiidrtsforeningerne).
- DIF(b). (2021). Ny kampagne skal kickstarte foreningslivet efter corona. Retrieved May 17, 2022 from [www.dif.dk/nyheder/2021/08/20210831\\_nykampagneskalkickstarteforeningsliveteftercorona](http://www.dif.dk/nyheder/2021/08/20210831_nykampagneskalkickstarteforeningsliveteftercorona).
- Digital Humanities Course Registry (2022). Retrieved from [www.dhcr.clarin-dariah.eu/?country\\_id=9](http://www.dhcr.clarin-dariah.eu/?country_id=9)
- DIME (n.d.) *Om DIME*. Retrieved August 10, 2022 from [www.metaldetektorfund.dk/information/?om](http://www.metaldetektorfund.dk/information/?om)
- Distributed Systems of Scientific Collection (n.d.) *DiSSCo*. Retrieved from [www.dissco.eu/](http://www.dissco.eu/)
- Dust and Data (n.d.) *The Project – Dust and Data*. Retrieved from [www.dustanddata.at/project/](http://www.dustanddata.at/project/)
- EU Heritage. (2019). *Skill Profile for Cultural Heritage Report*. Retrieved from [www.euheritage.eu/wp-content/uploads/2021/12/EUHERIT\\_GENERALREPORT\\_-EN.pdf](http://www.euheritage.eu/wp-content/uploads/2021/12/EUHERIT_GENERALREPORT_-EN.pdf)
- Europa Nostra (2020). *COVID-19 & Beyond: Challenges and Opportunities for Cultural Heritage, Europa Nostra Organisation*. Retrieved from [www.europanostra.org/wp-content/uploads/2020/10/20201014\\_COVID19\\_Consultation-Paper\\_EN.pdf](http://www.europanostra.org/wp-content/uploads/2020/10/20201014_COVID19_Consultation-Paper_EN.pdf)
- European Commission (2020). EU Policy for cultural heritage. Retrieved from [www.culture.ec.europa.eu/cultural-heritage/eu-policy-for-cultural-heritage](http://www.culture.ec.europa.eu/cultural-heritage/eu-policy-for-cultural-heritage)

- European Commission. (n.d.). *Culture and Creativity*. Retrieved August 10, 2022 from [www.culture.ec.europa.eu/cultural-heritage/cultural-heritage-in-eu-policies/cultural-heritage-and-education](http://www.culture.ec.europa.eu/cultural-heritage/cultural-heritage-in-eu-policies/cultural-heritage-and-education)
- European Cultural Foundation. (2020). The Future of Culture and Creative sectors in post-COVID-19 Europe. Retrieved from: [www.culturalfoundation.eu/stories/future-of-culture-and-creative-sectors-in-post-Covid-19-europe/](http://www.culturalfoundation.eu/stories/future-of-culture-and-creative-sectors-in-post-Covid-19-europe/)
- European Cultural Heritage Skills Alliance. (2021). Cultural heritage education & training in Europe – pathways to qualifications. Retrieved from [www.charter-alliance.eu/wp-content/uploads/2021/10/d31\\_final\\_v2.pdf](http://www.charter-alliance.eu/wp-content/uploads/2021/10/d31_final_v2.pdf)
- European Parliament. CULT Committee. (2021) Cultural and creative sectors in postCOVID-19 Europe. Retrieved from: [www.europarl.europa.eu/RegData/etudes/STUD/2021/652242/IPOL\\_STU\(2021\)652242\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2021/652242/IPOL_STU(2021)652242_EN.pdf)
- European Parliament. CULT Committee. (2021) The Situation of Artists and Cultural Workers and the post COVID-19 Cultural Recovery in the European Union. Retrieved from: [www.europarl.europa.eu/RegData/etudes/STUD/2021/652250/IPOL\\_STU\(2021\)652250\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2021/652250/IPOL_STU(2021)652250_EN.pdf)
- Folk Life Museum in Graz. (n.d.) Der Alltag mit dem Coronavirus Sammlungsaufruf, Retrieved August 10, 2022 from [www.museum-joanneum.at/volkskunde/sammlungsaufruf/corona](http://www.museum-joanneum.at/volkskunde/sammlungsaufruf/corona)
- Furnham, A. (2013). The Dark Side of Leadership Management Derailment, EAWOP conference. Available at: [www.eawop.org/ckeditor\\_assets/attachments/416/worklab\\_2013\\_adrianfurnham\\_talk2.pdf?1384979822](http://www.eawop.org/ckeditor_assets/attachments/416/worklab_2013_adrianfurnham_talk2.pdf?1384979822)
- Fuschlberger D. (2021). Digitale Strategie Salzburger Landesmuseen. Land Salzburg. Retrieved from [www.salzburg.gv.at/kultur/\\_Documents/Landesmuseen\\_DigitaleStrategie.pdf](http://www.salzburg.gv.at/kultur/_Documents/Landesmuseen_DigitaleStrategie.pdf).
- García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in Psychology*, 12, 616059.
- Gibb, A. A. and Haskins, G. (2013). The Entrepreneurial University of the Future. An Entrepreneurial Stakeholder Learning Organisation. In A. Fayolle & D. T. Redford (Eds) *Handbook of Research in Entrepreneurial Education. Volume 4 – Entrepreneurial University Handbook* (pp. 25-64). Edward Elgar
- Government of Ireland. (2018). *Investing in Our Culture, Language and Heritage 2018-27* (pp. 37-39). Retrieved from [www.creativeireland.gov.ie/app/uploads/2019/12/FINAL-PLAN-FOR-WEBSITE.pdf](http://www.creativeireland.gov.ie/app/uploads/2019/12/FINAL-PLAN-FOR-WEBSITE.pdf)
- Government of Ireland. (2021) Ireland's National Skills Strategy. Retrieved from [www.gov.ie/en/publication/69fd2-irelands-national-skills-strategy-2025-irelands-future/#:~:text=Background%20to%20the%20strategy%20%27Ireland%E2%80%99s%20National%20Skills%20Strategy,working%20here%2C%20and%20those%20hoping%20to%20work%20here](http://www.gov.ie/en/publication/69fd2-irelands-national-skills-strategy-2025-irelands-future/#:~:text=Background%20to%20the%20strategy%20%27Ireland%E2%80%99s%20National%20Skills%20Strategy,working%20here%2C%20and%20those%20hoping%20to%20work%20here).
- Hagedorn, M. (2021, August 16). Værdipolitikken fyldte mere end kulturpolitikken med Joy Mogensen som minister. *Altinget.dk*. [www.alinget.dk/kultur/artikel/vaerdipolitikken-fyldte-mere-end-kulturpolitikken-med-joy-mogensen-som-minister](http://www.alinget.dk/kultur/artikel/vaerdipolitikken-fyldte-mere-end-kulturpolitikken-med-joy-mogensen-som-minister). 17 may. 2022.
- Hansen, J.H. (2019, May 15). Her er de tre største forandringer, Foreningsdanmark står overfor. *Altinget*. Retrieved on 17 May 2022. [www.alinget.dk/civilsamfundetsvidenscenter/artikel/her-er-de-tre-stoerste-forandringer-foreningsdanmark-staar-overfor](http://www.alinget.dk/civilsamfundetsvidenscenter/artikel/her-er-de-tre-stoerste-forandringer-foreningsdanmark-staar-overfor).
- Haus der Geschichte Österreich. (n.d-a.). Corona Sammeln – Ein Krisenjahr in Objekten. Retrieved August 10, 2022 from [www.hdgoe.at/category/corona\\_sammeln](http://www.hdgoe.at/category/corona_sammeln)

Haus der Geschichte Österreich (n.d.-b) Web-Ausstellungen. Retrieved from [www.hdgoe.at/category/web-ausstellungen](http://www.hdgoe.at/category/web-ausstellungen)

Hengel, L. (2020, April 1) *How Italy Is Inspiring The World By Coming Together Through Culture*. Forbes. Retrieved from [www.forbes.com/sites/liviahengel/2020/04/01/how-italy-is-inspiring-the-world-by-coming-together-through-culture/?sh=4a9bdfd06613](http://www.forbes.com/sites/liviahengel/2020/04/01/how-italy-is-inspiring-the-world-by-coming-together-through-culture/?sh=4a9bdfd06613)

Heritage Council. (2019). *Report on Heritage Ireland 2030 Public and Sectoral Meetings*. Department of Culture, Heritage and the Gaeltacht (pp.10-36). Retrieved from [http://file:///C:/Users/con\\_m/Downloads/216636\\_6162ba85-1aa6-4cdf-9c54-4a46c047b18a%20\(4\).pdf](http://file:///C:/Users/con_m/Downloads/216636_6162ba85-1aa6-4cdf-9c54-4a46c047b18a%20(4).pdf)

Højsgaard, L. (2020, October 6). Nu skal underviserne være hybride. *Akademikerbladet*. Retrieved on May 17, 2020. [www.akkademikerbladet.dk/aktuelt/2020/oktober/nu-skal-underviserne-vaere-hybride](http://www.akkademikerbladet.dk/aktuelt/2020/oktober/nu-skal-underviserne-vaere-hybride).

Holtorf, C. (2018). Embracing change: how cultural resilience is increased through cultural heritage. *World archaeology*. [www.doi.org/10.1080/00438243.2018.1510340](http://www.doi.org/10.1080/00438243.2018.1510340)

Iannelli, P. (2020). The Initiatives of Italian Ministry of Culture and Tourism for the management of Cultural Sites in relation to COVID-19 Emergency. Retrieved from: [www.preventionweb.net/news/initiatives-italian-ministry-culture-and-tourism-management-cultural-sites-relation-Covid-19](http://www.preventionweb.net/news/initiatives-italian-ministry-culture-and-tourism-management-cultural-sites-relation-Covid-19)

ICAI. (n.d.). Cultural AI Lab. [www.icaia.ai/cultural-ai-lab/](http://www.icaia.ai/cultural-ai-lab/)

ICCROM, the Netherlands Institute for Sound and Vision (NISV), and AVP (2021), *The Digital Imperative: Envisioning The Path To Sustaining Our Collective Digital Heritage, A Summary of research findings & opportunity assessment*. Retrieved from: [www.iccrom.org/sites/default/files/2021-12/en\\_0\\_sustainingdigitalheritage-findingsreport\\_iccrom\\_2021.pdf](http://www.iccrom.org/sites/default/files/2021-12/en_0_sustainingdigitalheritage-findingsreport_iccrom_2021.pdf)

Inatura (n.d.) *Fachberatung*. Retrieved from [www.inatura.at/natur-ratgeber/fachberatung](http://www.inatura.at/natur-ratgeber/fachberatung)

Intavia (n.d.) *InTavia: In/Tangible European Heritage*. Retrieved from [www.intavia.eu/](http://www.intavia.eu/)

Jessen, L.B. (2018). Hvem er museernes ikke-brugere? *Kulturministeriet*. 27 aug. 2018. [www.slks.dk/fileadmin/user\\_upload/0\\_SLKS/Dokumenter/Museer/Fakta\\_om\\_museerne/Statistik\\_om\\_museer/Brugerundersoegelse/Museernes\\_ikke-brugere\\_Line\\_Bjerregaard\\_FINAL.pdf](http://www.slks.dk/fileadmin/user_upload/0_SLKS/Dokumenter/Museer/Fakta_om_museerne/Statistik_om_museer/Brugerundersoegelse/Museernes_ikke-brugere_Line_Bjerregaard_FINAL.pdf). 17 may. 2022.

Jones-Hall, J. (2020). Positive collaborations between heritage and HE. [www.culturalplacemaking.com/2020/06/17/positive-collaborations-between-heritage-and-he/](http://www.culturalplacemaking.com/2020/06/17/positive-collaborations-between-heritage-and-he/)

Kulturarvsstyrelsen (2009) *Digital museumsformidling - i brugerperspektiv*. [www.slks.dk/fileadmin/user\\_upload/kulturarv/publikationer/emneopdelt/digitalisering/digital\\_museumsformidling.pdf](http://www.slks.dk/fileadmin/user_upload/kulturarv/publikationer/emneopdelt/digitalisering/digital_museumsformidling.pdf)

Louisiana Channel (n.d.) *Louisiana Channel – Weekly videos on art, literature, architecture, design, music produced by Louisiana Museum of Modern Art*. Retrieved from [www.channel.louisiana.dk/](http://www.channel.louisiana.dk/)

Markham, K., Pendlebury, J., Sayner, J., & Wilde, M. (2019). *Mapping collaborative interactions between Higher Education Institutions in the UK and the Heritage Sector*. Newcastle University.

Maynooth University (n.d.) *Certificate in Irish Cultural Heritage*. Retrieved from [www.maynoothuniversity.ie/larionad-gaeilge-centre-irish-language/our-courses/certificate-irish-cultural-heritage](http://www.maynoothuniversity.ie/larionad-gaeilge-centre-irish-language/our-courses/certificate-irish-cultural-heritage)

- Ministeriet Slots- og Kulturstyrelsen (2020, September 9). *Pulje til refusion for rabat på billetter og deltagerbetaling for kultur- og idrætsaktiviteter i forbindelse med Covid-19 (Ansøgning regnskab)*. Retrieved August 10, 2022 from [www.slks.dk/tilskud/stamside/tilskud/pulje-til-refusion-for-rabat-paa-billetter-og-deltagerbetaling-for-kultur-og-idraetsaktiviteter-i-forbindelse-med-Covid-19-ansoegning-regnskab](http://www.slks.dk/tilskud/stamside/tilskud/pulje-til-refusion-for-rabat-paa-billetter-og-deltagerbetaling-for-kultur-og-idraetsaktiviteter-i-forbindelse-med-Covid-19-ansoegning-regnskab)
- Ministeriet Slots- og Kulturstyrelsen (2021). *Den Nationale Brugerundersøgelse Årsrapport 2020*. Retrieved August 23, 2022 from [www.slks.dk/fileadmin/user\\_upload/SLKS/Services/Publikationer/Den\\_nationale\\_brugerundersoegelse\\_AArsrapport\\_2020\\_1.pdf](http://www.slks.dk/fileadmin/user_upload/SLKS/Services/Publikationer/Den_nationale_brugerundersoegelse_AArsrapport_2020_1.pdf)
- Ministeriet Slots- og Kulturstyrelsen (2022) *Afsluttede aktivitetspuljer*. Retrieved from [www.slks.dk/covid-19/afsluttede-aktivitetspuljer](http://www.slks.dk/covid-19/afsluttede-aktivitetspuljer)
- Mobilise (n.d.) *Mobilise Action – Mobilising Data, Policies and Experts in Scientific Collections*. Retrieved from [www.mobilise-action.eu/](http://www.mobilise-action.eu/)
- Mu.SA: Museum Sector Alliance (2017). *Emerging job profiles for the museum professionals*. Retrieved from [www.project-musa.eu/wp-content/uploads/2020/06/MuSA-Emerging-Job-Profiles-for-museum-professionals.pdf](http://www.project-musa.eu/wp-content/uploads/2020/06/MuSA-Emerging-Job-Profiles-for-museum-professionals.pdf)
- Munksgaard, M.M. (2021, August 12). *Besøgstillene begynder at blomstre på danske museer, men én ting kan stadig holde fremtidens gæster tilbage*. *Altinget.dk*. Retrieved on May 17 2022 [www.alinget.dk/kultur/artikel/besoegstillene-begynder-at-blomstre-paa-danske-museer-men-stadigen-ting-kan-holde-fremtidens-gaester-tilbage](http://www.alinget.dk/kultur/artikel/besoegstillene-begynder-at-blomstre-paa-danske-museer-men-stadigen-ting-kan-holde-fremtidens-gaester-tilbage).
- MuseumNext (2021). *Survey: Effect of Covid-19 Pandemic on Museums?* Retrieved from [www.museumnext.com/article/survey-effect-of-Covid-19-pandemic-on-museums/](http://www.museumnext.com/article/survey-effect-of-Covid-19-pandemic-on-museums/)
- Museumsakademie Universalmuseum Joanneum. (2021). *Digitale Museumspraxis, quo vadis? Offene Fragen zum digitalen Wandel im Jahr 2 mit Corona*. Retrieved from: [www.museum-joanneum.at/blog/digitale-museumspraxis-quo-vadis-offene-fragen-zum-digitalen-wandel-im-jahr-2-mit-corona/](http://www.museum-joanneum.at/blog/digitale-museumspraxis-quo-vadis-offene-fragen-zum-digitalen-wandel-im-jahr-2-mit-corona/).
- Museumsbund Österreich. (2019). *Das Museum im digitalen Raum Zum Status quo in Österreich*. Retrieved from [www.museen-in-oesterreich.at/docs/statistiken/de/MOe\\_Museum\\_im\\_digitalen\\_Raum\\_2019.pdf](http://www.museen-in-oesterreich.at/docs/statistiken/de/MOe_Museum_im_digitalen_Raum_2019.pdf).
- Museumsbund Österreich. (2021). *Das pandemische Museumsjahr 2020 in Zahlen*. Retrieved from: [www.ots.at/presseaussendung/OTS\\_20210806\\_OTS0047/das-pandemische-museumsjahr-2020-in-zahlen#:~:text=Insgesamt%20gab%20es%20um%2071,Museumstr%C3%A4ger%20haben%20das%20Stimmungsbild%20ausgef%C3%BCllt](http://www.ots.at/presseaussendung/OTS_20210806_OTS0047/das-pandemische-museumsjahr-2020-in-zahlen#:~:text=Insgesamt%20gab%20es%20um%2071,Museumstr%C3%A4ger%20haben%20das%20Stimmungsbild%20ausgef%C3%BCllt)
- Nandy, M., Lodth, S. & Tang, A. (2020). *Lessons from Covid-19 and a resilience model for higher education* [www.journals.sagepub.com/doi/full/10.1177/0950422220962696](http://www.journals.sagepub.com/doi/full/10.1177/0950422220962696)
- Nationalmuseet. (2020). *Dage med corona: Nationalmuseet indsamler din fortælling under coronapandemien*. Retrieved August 10, 2022 from [www.natmus.dk/dagemedcorona/](http://www.natmus.dk/dagemedcorona/)
- Network of European Museum Organisations (2021). *Follow-up survey on the impact of the COVID-19 pandemic on museums in Europe*. [www.ne-](http://www.ne-)

[mo.org/fileadmin/Dateien/public/NEMO\\_documents/NEMO\\_COVID19\\_FollowUpReport\\_11.1.2021.pdf](https://mo.org/fileadmin/Dateien/public/NEMO_documents/NEMO_COVID19_FollowUpReport_11.1.2021.pdf)

- Nørgård, R.T. (2021, May 8). The pandemic university is not the hybrid model we need. *University World News*. Retrieved on May 17, 2022. [www.universityworldnews.com/post.php?story=20210505104305694](https://www.universityworldnews.com/post.php?story=20210505104305694).
- O'Brien, G. (2020, July 17). *What's the government's problem with heritage?*. RTE. [www.rte.ie/brainstorm/2020/0716/1153731-heritage-culture-arts-ireland-government-ministers/](https://www.rte.ie/brainstorm/2020/0716/1153731-heritage-culture-arts-ireland-government-ministers/)
- OECD Local Economic and Employment Development (LEED). (2021) Veneto: A manufacturing region with a cultural and creative edge. Sacco, P. Retrieved from: [www.oecd-ilibrary.org/docserver/54dc699f-en.pdf?expires=1652106430&id=id&accname=guest&checksum=B530EFEC1619E77AF8C9985D2E48199E](https://www.oecd-ilibrary.org/docserver/54dc699f-en.pdf?expires=1652106430&id=id&accname=guest&checksum=B530EFEC1619E77AF8C9985D2E48199E)
- OECD. (2020). Coronavirus (COVID-19) and cultural and creative sectors: impact, innovations and planning for post-crisis. Webinar series. Retrieved from: [www.oecd.org/italy/culture-webinars.htm](https://www.oecd.org/italy/culture-webinars.htm)
- Paulsen, J.T. & Rohde, T.S. (2022, January 11). Teaterinstruktør raser: »Er den siddende regering totalt ligeglad med kultur?«. *Berlingske Tidende*. Retrieved on 17 May 2022. [www.berlingske.dk/aok/teaterinstruktoer-raser-er-den-siddende-regering-totalt-ligeglad-med-kultur](https://www.berlingske.dk/aok/teaterinstruktoer-raser-er-den-siddende-regering-totalt-ligeglad-med-kultur)
- Redweik, P., Cláudio, A. P., Carmo, M. B., Naranjo, J. M., & Sanjosé, J. J. (2017). Digital preservation of cultural and scientific heritage: involving university students to raise awareness of its importance. *Virtual Archaeology Review*, 8(16), 22-34.
- Reichmann, S. Hasani-Mavriqi, I. (2021). Institute of Interactive Systems and Data Science Handlungsfeld Forschung – Programm Digitale TU Graz. Entwicklung eines Konzepts für Data Stewards an österreichischen Universitäten. Retrieved from: [www.Users/carolineschenk/Downloads/Bericht\\_Data\\_Stewardship\\_Workshop\\_FAIR\\_Data\\_Austria.pdf](https://www.Users/carolineschenk/Downloads/Bericht_Data_Stewardship_Workshop_FAIR_Data_Austria.pdf). DOI: 10.25365/phaidra.243.
- Reinherit (n.d.) *ReInherit – Redefining the Future of Cultural Heritage*. Retrieved from [www.reinherit.eu/](https://www.reinherit.eu/)
- Sandberg, A. (2019, October 2). *Fremtidens museer skal vælge mellem Instagram-besøgende eller den traditionelle gæst*. Lixen. Retrieved on May 17, 2022. [www.lixen.dk/fremtidens-museer-skal-vaelge-mellem-instagram-besoegende-eller-den-traditionelle-gaest/](https://www.lixen.dk/fremtidens-museer-skal-vaelge-mellem-instagram-besoegende-eller-den-traditionelle-gaest/).
- Sanderhoff, M. (2020, June 18). Digital museumspraksis i en coronatid. *Danskemuseer.dk*. Retrieved on May 17, 2022 from [www.danskemuseer.dk/digital-museumspraksis-i-en-coronatid/](https://www.danskemuseer.dk/digital-museumspraksis-i-en-coronatid/). Retrieved on May 17, 2022, [www.danskemuseer.dk/digital-museumspraksis-i-en-coronatid/](https://www.danskemuseer.dk/digital-museumspraksis-i-en-coronatid/).
- Setyagung, E., Hani, U., Azzadina, I., Sianipar, C., & Ishii, T. (2013). Preserving cultural heritage: The harmony between art idealism, commercialization, and Triple-Helix collaboration. *American Journal of Tourism Management*, 2(1), 22-28.
- Sohn, S. (2020, May 29). "Vi kunne måske bare se på kunstværkerne og tale med hinanden i stedet for at kigge på vores medbragte lille skærm". *Kunsten.nu*. Retrieved on May 17, 2022 from [www.kunsten.nu/journal/vi-kunne-maaske-bare-se-paa-kunstvaerkerne-og-tale-med-hinanden-i-stedet-for-at-kigge-paa-vores-medbragte-lille-skaerm/](https://www.kunsten.nu/journal/vi-kunne-maaske-bare-se-paa-kunstvaerkerne-og-tale-med-hinanden-i-stedet-for-at-kigge-paa-vores-medbragte-lille-skaerm/).

Statens Museum for Kunst [SMK] (n.d.) SMK.Open.

[www.open.smk.dk/artwork/image/KMS3662?q=hammersh%C3%B8i&page=1&filters=has\\_image%3Atrue](http://www.open.smk.dk/artwork/image/KMS3662?q=hammersh%C3%B8i&page=1&filters=has_image%3Atrue)

Stimmer, U. (2021). *Digital und partizipativ ins Museum*. Upgrade: Das Magazin für Wissen und Weiterbildung an der Donau-Universität Krems. Ausgabe 3.21. Alles (k)eine Kunst. (S. 20-23). Retrieved from [www.donau-uni.ac.at/dam/jcr:cb650572-109b-439f-b242-d7cc4444ac63/3.21\\_DS\\_72dpi\\_NEU.pdf](http://www.donau-uni.ac.at/dam/jcr:cb650572-109b-439f-b242-d7cc4444ac63/3.21_DS_72dpi_NEU.pdf).

Svennevig, B. (2021, November 29). *Vil du med på digitalt museum?* Southern University Denmark. [www.sdu.dk/da/nyheder/forskningsnyheder/vil-du-med-paa-digitalt-museum](http://www.sdu.dk/da/nyheder/forskningsnyheder/vil-du-med-paa-digitalt-museum)

Synthesys+ (n.d.) *Synthesys - An integrated European infrastructure for researchers in the natural sciences*. Retrieved from [www.synthesys.info/](http://www.synthesys.info/)

The Danish Architecture Centre. (n.d.). from [www.dac.dk/](http://www.dac.dk/)

The Danish Ministry of Culture. (2020a). Financial subsidy scheme - 50 % ticket discount from [www.slks.dk/tilskud/stamside/tilskud/pulje-til-refusion-for-rabat-paa-billetter-og-deltagerbetaling-for-kultur-og-idraetsaktiviteter-i-forbindelse-med-Covid-19-ansoegning-regnskab](http://www.slks.dk/tilskud/stamside/tilskud/pulje-til-refusion-for-rabat-paa-billetter-og-deltagerbetaling-for-kultur-og-idraetsaktiviteter-i-forbindelse-med-Covid-19-ansoegning-regnskab)

The Danish Ministry of Culture. (2020b). Financial help packages: [www.slks.dk/Covid-19/afsluttede-aktivitetspuljer](http://www.slks.dk/Covid-19/afsluttede-aktivitetspuljer)

The Danish Ministry of Culture. (2020c). The national user survey from [www.slks.dk/fileadmin/user\\_upload/SLKS/Services/Publikationer/Den\\_nationale\\_brugerundersoegelse\\_AArsrapport\\_2020\\_1.pdf](http://www.slks.dk/fileadmin/user_upload/SLKS/Services/Publikationer/Den_nationale_brugerundersoegelse_AArsrapport_2020_1.pdf)

The Heritage Council. (2021). *Covid-19 Heritage Sector Survey*. Retrieved from [www.heritagecouncil.ie/projects/Covid-19-heritage-sector-survey](http://www.heritagecouncil.ie/projects/Covid-19-heritage-sector-survey)

The National Gallery (n.d.). SMK open from [www.open.smk.dk/artwork/image/KMS3662?q=hammersh%C3%B8i&page=1&filters=has\\_image%3Atrue](http://www.open.smk.dk/artwork/image/KMS3662?q=hammersh%C3%B8i&page=1&filters=has_image%3Atrue)

The Royal Danish Theatre online platform. (n.d.). KGL Xtra from [www.kglteater.dk/xtra](http://www.kglteater.dk/xtra)

Time Machine (n.d.) *Time Machine Europe*. Retrieved from [www.timemachine.eu/](http://www.timemachine.eu/)

Trinity College Dublin (2022). *Public History and Cultural Heritage (M. Phil./ P.Grad.Dip.)*. Retrieved from [www.tcd.ie/courses/postgraduate/courses/public-history-and-cultural-heritage--mphil--pgraddip/](http://www.tcd.ie/courses/postgraduate/courses/public-history-and-cultural-heritage--mphil--pgraddip/)

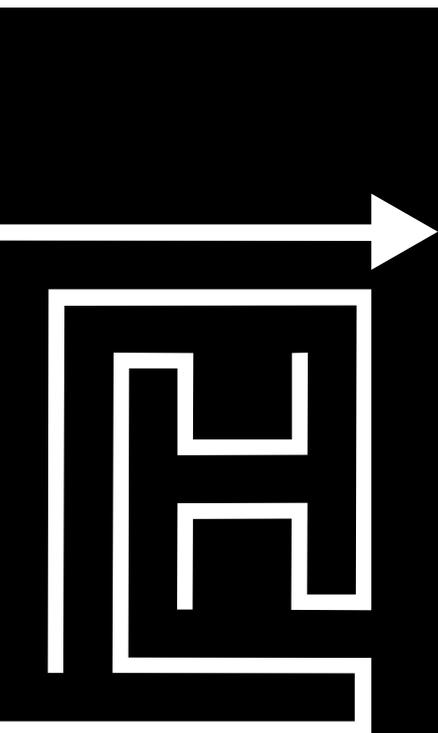
UK Research and Innovation. (n.d.). Collaborative Arts Triple Helix (CATH). Outcomes. [gtr.ukri.org/projects?ref=AH%2FK002732%2F1](http://gtr.ukri.org/projects?ref=AH%2FK002732%2F1)

UNESCO (2017) Ireland 2017 report. Retrieved from [www.en.unesco.org/creativity/governance/periodic-reports/2017/ireland](http://www.en.unesco.org/creativity/governance/periodic-reports/2017/ireland)

UNESCO (2021). UNESCO report: museums around the world in the face of COVID-19, UNESDOC Digital Library. [www.unesdoc.unesco.org/ark:/48223/pf0000376729\\_eng](http://www.unesdoc.unesco.org/ark:/48223/pf0000376729_eng)

University of Copenhagen (n.d.-a) *Competencies for Universities – using Technology in Education (CUTE)*. [www.cute.ku.dk/](http://www.cute.ku.dk/)

- University of Copenhagen (n.d.-b) *TEACH*. Retrieved from [www.humanities.ku.dk/about/administration/all2/teach/](http://www.humanities.ku.dk/about/administration/all2/teach/)
- University of Limerick. (n.d.). *Public History & Cultural Heritage – MA*. Retrieved from [www.ul.ie/gps/course/public-history-cultural-heritage-online-ma](http://www.ul.ie/gps/course/public-history-cultural-heritage-online-ma)
- VISITDENMARK (2021). Nøgletal om dansk turisme. *Visitdenmark.dk*.  
[www.visitdenmark.dk/corporate/videncenter/noegletal-om-dansk-turisme](http://www.visitdenmark.dk/corporate/videncenter/noegletal-om-dansk-turisme) &  
[file:///C:/Users/rmh573/Downloads/Turismen%20i%20Danmark%202021%20\(2\).pdf](file:///C:/Users/rmh573/Downloads/Turismen%20i%20Danmark%202021%20(2).pdf).
- Wien Museum. (2022) Corona Collection Project. Retrieved October 28, 2022 from [www.wienmuseum.at/en/corona-collection-project](http://www.wienmuseum.at/en/corona-collection-project)
- ZSI – Zentrum für Soziale Innovation. (2020). Digital Humanities in Österreich. Ergebnisse der Studie „Exploratives Mapping“, Dezember 2019.  
[www.zsi.at/object/publication/5469/attach/DigHumAT\\_Report\\_Konsultation.pdf](http://www.zsi.at/object/publication/5469/attach/DigHumAT_Report_Konsultation.pdf).
- Zuanni C. (2021, December 23). Museen in einer digitalen Welt. *Der Standard*.  
[www.derstandard.at/story/2000131905015/museen-in-einer-digitalen-welt](http://www.derstandard.at/story/2000131905015/museen-in-einer-digitalen-welt).



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