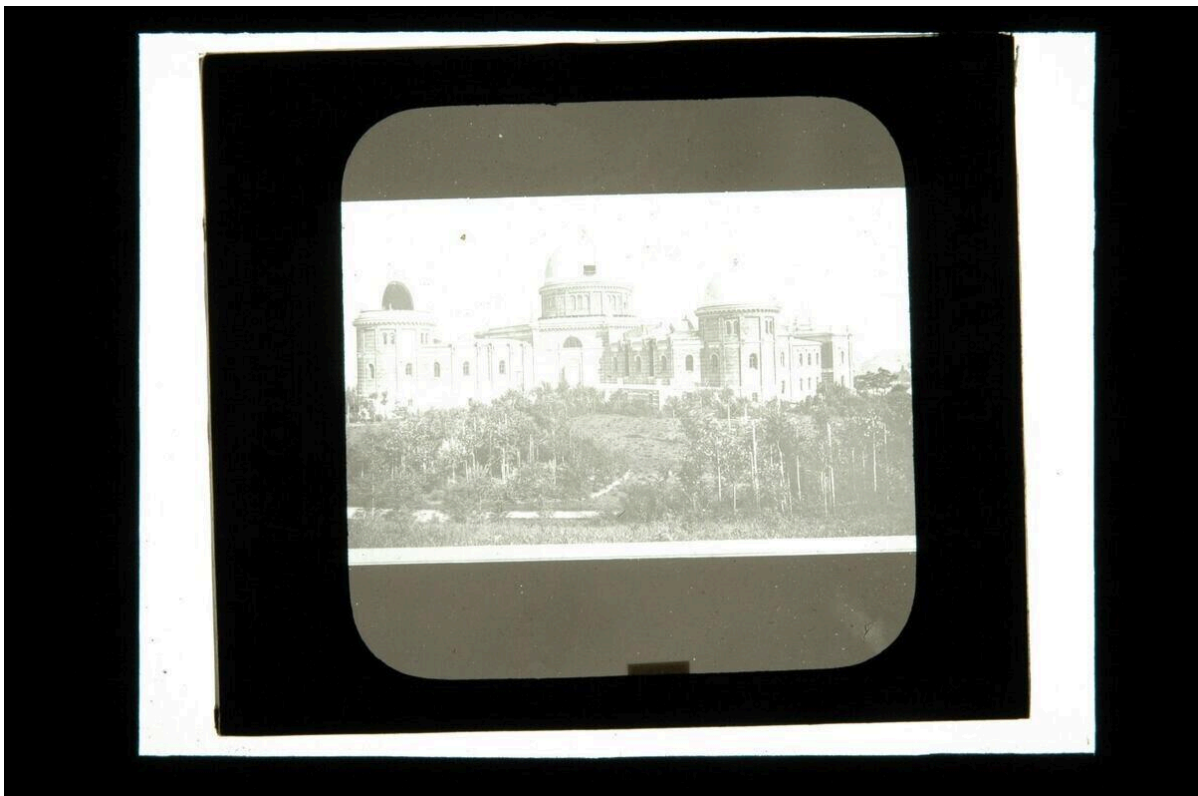# Europeana Initiative PESTLE and Future Scenarios report

Lauren Vargas (Your Digital Tattoo) and Nicole Mc Neilly (Europeana Foundation), September 2024

Wiener Sternwarte by Bruno Meyer (Künstler_in) - Albertina, Austria - Public Domain.
https://www.europeana.eu/item/15508/FotoGLV2000_14591_79

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Acknowledgements

1. Introduction

Futuring, future scenarios development and strategic foresight are all related terms that are connected to the strategic study of potential ways in which the future will develop. They are methodologically sound ways of looking at the future to inform today's planning, with the goal of increasing our preparedness and ability to react and, in some cases, proactively shape how we might act in the future. The approaches are based on the identification and analysis of signals, trends and drivers that we might see around us today.

In 2024, the Europeana Initiative launched a strategic foresight process to help us explore possible futures and guide us towards the development of a vision and business plan for 2030. Over 100 participants helped to inform our thinking through a PESTLE analysis and future scenario development workshops. This expertise was hugely valuable to the process and we are sharing what we learned to strengthen future-preparedness in the cultural heritage sector and beyond.

This paper brings together:
- The consolidated findings of the [PESTLE analysis](#) (and parallel literature review);
- A list of [uncertainties](#) that are likely to shape the future in which we operate;
- The three [future scenarios](#) developed based on a series of consultative workshops;
- An [analysis](#) of the commonalities, differences and some implications for the heritage sector in these possible futures; and,
- An [overview](#) of these resources can be used to help you in your future preparedness and to build strategic foresight into your own planning processes.

1.1 What is futures thinking and strategic foresight?

Strategic foresight is a comprehensive look at what the future reality might look like. It is based on trends or external factors that are most impactful and uncertain for our work. This is where we usually need to build preparedness. Scenarios are developed to creatively and practically explore different futures while also better understanding the present context in which we are working.

To create future scenarios, we must explore current and future societal issues. In each scenario, uncertainties play a crucial role. This means that the scenarios are not

predictions. Rather they make us question how we might respond if the future evolves in a certain way.

Scenarios can also help us backcast - from a hypothetical, but not unrealistic possible future, we can creatively look at turning points or dependencies that have to happen for us to get to this situation. We can also cultivate, or plan towards, our 'preferred' future(s)' rather than passively letting the future happen to us. A preferred future is unlikely to be any one scenario, but rather a mix of factors and contexts and a mix of possible actions and responses.

1.2 Methodology

We started with a preliminary mapping and analysis of the *Political, Economic, Social, Technological, Legal and Environmental* (PESTLE) factors. We created a [digital questionnaire](#) to capture perspectives from the Europeana Initiative and beyond, harnessing their thoughts on the factors that could influence our work in the short, medium and long-term future. We asked about both opportunities and challenges. We received almost 70 rich and detailed responses.

In parallel, we conducted a rapid literature review, further consolidated by a review of a futures library conducted by Lauren Vargas. The references are set out in [Appendix 2](#). Having analysed and summarised the results of the responses to the PESTLE questionnaire and the literature review, participants were invited to a series of consultative workshops.

The workshops began by asking participants to categorise the factors identified in the PESTLE analysis and literature review by their impact and level of uncertainty. A series of key uncertainties were identified. The activities helped participants consider and shape the new possibilities of/for a common European data space for cultural heritage and the implications for the Europeana Initiative as a 'data steward' in these futures.

Following these workshops, three scenarios were drafted incorporating the areas of greatest uncertainty and impact the Europeana Initiative may encounter. These were shared with participants for consideration before a final workshop, where the scenarios were assessed and evaluated in terms of the Europeana Initiative's preparedness and possible adaptation strategies for each potential future.

2. PESTLE findings

Below we cluster the main trends identified in the PESTLE mapping and extended literature review. This list focuses on those that were most often referenced, assessed as critical and prioritised because of the potential impact on us directly or on the environment in which we work.

Political:
- National politics: increasing protectionism, nationalism and populism among EU Member States, rise of policies which may put pressure on the open data approach and the inclusive principles we stand for.
- Geotechnological order: a digital landscape predominantly shaped by the U.S. and China, which conflicts with the European model and its value system.
- Political environment: increase of disinformation and misinformation, threats to democracy and shrinking civic space, and a lack of trust in government, which is likely to highlight the importance of robust regulatory compliance and ethical guidelines.
- Digital governance and ethical standards: increase in security threats/risks, threats of violence to women, and a rising need for Europe to navigate and lead in cyber insecurity.
- Localisation of politics: shift towards more local and regional governance, with a more relevant role by cities and regions including in cultural matters.
- A decline in global cooperation and a proliferation and intensification of conflicts: increased scepticism about the benefits of globalisation.

Economic:
- Transformation of economic models: the EU occupies a mid-tier position in terms of economic strength - alongside economies such as China- and explores alternative models for growth focusing on innovation.
- Economic threats: potential economic threats including global conflicts (e.g. war in Europe and/or at its borders) threaten the economic sustainability of the EU and may lead to a redistribution of national budgets.
- Network economy: rise of crowdfunding, crowdsourcing and crowd content creation, highlighting the importance of building non-exploitive dynamic collaborative networks.
- Shifting economic priorities: the focus on health as a public responsibility underscores the need for comprehensive and inclusive knowledge dissemination.

- Gender gaps: economic gender gaps persist, necessitating targeted efforts to ensure inclusivity and equal opportunities in the digital marketplace.

Social:
- Cultural diversity: rising polarisation and populist concerns about threatened identities in an increasingly diverse society. Fragmentation of virtual identity reflects the necessity of promoting diverse cultural narratives and multilingual content.
- Youth culture: trends and changes in youth culture, including digital behaviours and social media influence.
- Workforce: evolving workforce dynamics, including remote work, workplace diversity, perpetuation of gender stereotypes in digital training and careers, declining work hours and changes in the workforce due to automation, and employee well-being. A higher demand for digital skills - particularly those related to AI and machine learning, along with 'soft' or 'human' skills like ethics and collaboration.
- Social trust: declining institutional and social trust, compounded by loneliness, disconnection and rising wealth inequality, weakens social cohesion and reduces civic engagement, emphasising the need for transparent and ethical knowledge and data management practices.
- Public protest: the increase of public protests worldwide indicates the importance of understanding and addressing community needs through effective intermediaries and bottom-up initiatives.

Technological:
- Technological advancements: emerging technologies heavily impact all industries and sectors, including cultural heritage and health. Immersive technology dominates cultural experiences.
- Digital transformation: societal need for increased readiness in digital transformation, influencing all business operations and defining their competitive advantage.
- Platforms: in the future, XR will be available to everyone and to harness this opportunity, decentralised, inclusive and user-friendly digital platforms are required.
- Data governance: choosing between proprietary and open source data models will require strategic leadership in digital literacy and innovation, governable spaces and data and community stewardship.
- Artificial intelligence: the rise of AI will strongly impact job markets, ethics, and will raise regulatory considerations. Tools, developed collaboratively, will be needed to

combat malicious AI behaviour and address technological threats, including the perpetuation of harmful stereotypes, effectively.

- Interconnectedness: the Internet of Things / interdependence of systems highlights a greater interconnectedness, underscoring the need for diverse and extensive partnerships.

Legal:
- Intellectual property: issues around protecting intellectual property in the digital age will gain more importance, and will be challenged by new technologies and the rise of AI.
- Compliance: organisations will be challenged to maintain compliance with changing laws and regulations, which will not always be easy for smaller and medium organisations (which dominate the heritage sector).
- Data privacy: privacy concerns and insecurity will be on the rise (in response to a dramatic increase in data breaches), paired with a lack of specialised knowledge and skills in this area.

Environmental:
- Sustainability: the importance of sustainable practices will underscore corporate reputation and operational efficiency. These will be a requirement for all organisations, including in the heritage sector.
- Climate change: an aggravated climate crisis will impact business operations and long-term planning; extreme weather events will require resilient partnerships and cooperative efforts. Specific environmental threats will have the potential to disrupt business activities. Action will be hampered by increasing debt and a lack of investment in the sustainable development goals in lower income countries.
- Environmental impact: the increasing environmental impact of digital tech will underscore the need for sustainable technological tools and solutions to reduce environmental impact and reduce and/or measure carbon emissions.

How to use the PESTLE findings
This list can be reviewed and revised over time, as part of efforts to document emerging trends, signals and drivers. The revised list can then be prioritised in terms of key uncertainties, as set out below.

3. Key uncertainties

To structure the consultative workshops and to prioritise the outcomes of the PESTLE analysis and literature review, key uncertainties were identified. These uncertainties are set out below as 'polarities': that is to say, going from one possible extreme to another. Each extreme has different implications, opportunities and challenges for the Europeana Initiative and our wider network.

Polarity 1	Strategic Issue (uncertainty)	Polarity 2
Reliance on EU-backed and state-funding	Arts, Culture & Heritage Funding	Reliance on self funding (eg crowdsourcing, philanthropic funding)
Acceptance of Big Tech via US and China	Big Tech & Digital Economy Dominance	Pushback of Big Tech from EU
Increase of extreme weather conditions	Climate Change	Decrease of extreme weather conditions
Global/Pan-European	Cultural Heritage Collaboration	Regional/Local
Cultures and customs blend together	Cultural Heterogeneity	Distinct cultural identities and values
Increase in security threats/risks	Cybersecurity	Decrease in security threats/risks
Reliable	Data Collection	Unreliable
Restricted access and use	Data Regulation	Unrestricted access and use
Users prefer centralised technology	Digital / Social Media Consumption	Users prefer decentralised technology
Conscious consumption	Digital Consumption Driver	Convenience is king
A public/employer responsibility	Digital reskilling	An individual's responsibility
Increase of digital literacy	Digital skills training	Decrease of digital literacy
Cultural heritage seen as inclusive	Diversity	Cultural heritage seen as non-inclusive
Green energy source dominant	Energy Source	Conventional energy source dominant
Centralised policy and governance	Governable Spaces	Decentralised policy and governance

Policy informed change	Governing Systems	Grassroot-led change
Increase of funded green digital infrastructures	Green Infrastructures	Decrease of funded green digital infrastructures
Increase of misinformation/disinformation	Handling of Misinformation	Decrease of misinformation/disinformation
Increase of demand/interest	Immersive Spaces	Decrease of demand/interest
Reliable tech deployment and use	Immersive Technology	Unreliable tech deployment and use
Increase of shifts due to conflict and climate trauma	Migratory Shifts	Decrease of shifts due to conflict and climate trauma
Strong populist sentiments	Political Ideologies	Strong elitist sentiments
Health as a public responsibility	Public Health	Health as an individual responsibility
More time spent alone	Social Connections	More time spent with others
Increase of biodiversity	State of Biodiversity	Decrease of biodiversity
Globally distributed tech production	Tech Production	Centralised US and China tech production
Restricted use	Tech Regulation	Unrestricted use
Acceleration	Technology	Deceleration

Table 1. Prioritised uncertainties.

How to use these uncertainties
These uncertainties were assessed in a workshop setting for the scale of their uncertainty and their potential impact. They can be adapted and new priorities can be set out based on emerging trends. They can be discussed collaboratively and used to shape future scenarios that respond to future contexts.

4. Three future scenarios

4.1 How to read these scenarios

We recommend reading the scenarios at least twice, giving yourself space to reflect between each reading. Take notes and document any questions or points of discussion that you may have. Don't focus on any of the scenarios as 'good' or 'bad': instead consider how you might respond in each, and what the good or more negative consequences might be (and what you might learn from them now).

Ask yourself:
- Who does this future benefit?
- What is a signal of hope in this scenario?
- How do we keep what is core to our values?
- What do we need to let go of so as not to make matters worse?
- What have we already tried that we can bring back to help us with upcoming challenges?
- What negative or positive developments or actions will we have to accept in light of upcoming crises? Where do we have little or no agency?

Below you can read the abstracts of each of the three future scenarios developed as a result of the consultative workshops. The full scenario and an analysis of the implications of the scenario for the Europeana Initiative and the common European data space for cultural heritage are set out in the appendices.

4.2 The scenarios - a summary

Scenario A

The New Digital Iron Curtain: How U.S. and China Tech Wars Are Reshaping Europe's Culture
By 2035, the digital landscape is dominated by a few Big Tech companies controlling content creation and dissemination, leading to the prioritisation of profit over educational and cultural values in the European data space amidst a backdrop of regulatory failures, privacy concerns, and geopolitical tensions, challenging the

preservation and diverse representation of Europe's cultural heritage. Europe failed to establish data sovereignty and regulate technology, with increased privacy concerns and pervasive surveillance, leading to a decline in trust for EU institutions. Technologies like virtual/augmented reality, AI and biotech have transformed daily experiences, industries and human-computer interactions. Communities face forced migration, climate trauma, economic inequalities and increased conflict. They demand for diversity and a return to cultural richness. Yet the cultural sector, starved of consistent funding, has responded mainly with passivity.

Read the scenario and its analysis in full.

Scenario B

EU Leads the Charge in Global 'Regulation Era' Governance, Setting New Standards for Data Transparency

By 2035, the world has evolved into a multi-polar, technologically advanced society with decentralised yet tightly regulated governance systems, led by the EU in the 'Regulation Era,' emphasising accountability and transparency, leveraging data as a strategic asset in public-private partnerships, and focusing on sustainable practices and immersive technologies to address global challenges and transform interactions and cultural engagements. In this scenario, public funds are used more efficiently, enhancing accessibility, effectiveness, and impact. Addressing climate change is a central focus. Thanks to immersive technology, individuals actively shape and participate in digital environments, which are hubs for cultural expression and engagement with social and political discourses. Protection of rights and social policies in the digital realm progress, yet the pace at which new technologies develop often outstrips the rate at which legal and ethical frameworks can adapt. Fostering an environment conducive to innovation while protecting creators and consumers requires continuous regulatory vigilance. Europe distinguishes itself by exemplifying an ethical and sustainable governance.

Read the scenario and its analysis in full.

Scenario C

Europe's Digital Decade: A Groundbreaking Era of 'Coopetition' Sparks Innovation and Inclusivity

By 2035, Europe has transformed into a collaborative, innovative powerhouse, prioritising digital literacy, green infrastructure, and ethical governance, strongly emphasising personal data sovereignty and a commitment to sustainable, inclusive progress. There is a thriving economy centred around data integrity and utility, and a learning society where individuals are well-equipped to thrive in a digital-first economy. The rise of philanthropy and active non-governmental organisations (NGOs) drives social change and innovation. The 'layered EU digital decade' has fully materialised and is characterised by significant cross-disciplinary creativity and excellence in digital practices. This period has also seen a concerted effort to integrate digital conservation with cultural heritage preservation, responding to the increasing threats posed by climate change to Europe's rich historical legacies.

Read the scenario and its analysis in full.

5. Key take-aways

This section sets out areas of significant interest for the common European data space for cultural heritage. The content presented here is drawn from [Lauren Vargas's](#) analysis of the three scenarios and their assessment in consultative workshops with members of the Europeana Initiative and from wider afield.

5.1 Summary of the three scenarios

Scenario A emphasises Europeana's opportunity to focus on community-driven initiatives to establish trust and counter a landscape dominated by big tech and one-size-fits-all solutions.

Scenario B challenges Europeana to focus on public-private partnerships and data infrastructure. As data becomes a national asset and primary currency, Europeana must be a conscious steward of how this data is cultivated and accessed.

Scenario C highlights the importance of Europeana in promoting digital literacy and inclusive access to help shape an environment of cooperation and competition (coopetition).

5.2 Similarities between the scenarios

The similarities that occur across the scenarios can be seen as priority areas to be discussed in preparedness and risk planning.

- **Technological integration:** Leveraging immersive technologies such as AI, AR, and VR to enhance cultural engagement and education.
- **Privacy and cybersecurity:** Ensuring robust privacy and cybersecurity measures to protect individual data and maintain public trust.
- **Collaboration and networks:** Enhancing regional, national, and international collaborations to strengthen cultural initiatives.
- **Regulatory implementation:** Enactment, enforcement of new regulations, and compliance with updated frameworks.
- **Adoption of immersive technologies:** Increased AR/VR and AI use in cultural heritage projects and education.
- **Public engagement with heritage:** Metrics showing increased public participation and awareness.

In terms of needs common across the scenarios, there is a need for:

- **A shared understanding and definition of data spaces.** Participants found it difficult to consider 'what if' and 'what could be' when there is confusion about Europeana and the data space's current mission, purpose and role. This highlights the impact that uncertainty and a lack of strategic direction can have not only for our own actions but also how we engage others in delivering a cross-sectoral initiative and transformation.
- **The need for the development of an AI strategy and (advocacy) position.** In this and other cases, we see that we need to resolve the tension between Europeana as a 'follower' and an 'advocate / leader'.
- **The continuous development of people**, involving the cultivation of specialised, fit-for-purpose skills including in particular digital / AI skills and community stewardship. Being ready and able to respond to fast-moving technical developments will help address those who feel despondent about the future, or who feel that they have no agency to influence how this evolves.

Across the scenarios, there are shared challenges for Europeana as a steward of the common European data space for cultural heritage and more broadly for a sector that is transforming in terms of its digital obligations and the expectations of its audiences and funders. These challenges include:

- **Regulatory challenges:** Navigating and complying with complex and evolving regulations is difficult for a small organisation to deal with.
- **Funding issues:** Securing adequate and sustained funding will be difficult in view of reduced available funding and short-term and grant-based funding.
- **Technological barriers:** Keeping pace with rapid technological advancements and ensuring even access across regions.
- **Privacy concerns:** Addressing heightened privacy and surveillance issues that impact public trust.

5.1.2 Differences across the scenarios

There are a number of differences and nuances across each scenario, as set out in the table below. These have been assessed and are shared according to a number of different categories.

	Scenario A	Scenario B	Scenario C
Key dimensions	Emphasises grassroots movements, community-driven initiatives and diverse funding sources with a focus on national and regional funds.	Highlights the role and growth of public-private partnerships and developing data infrastructure.	Focuses on digital literacy and skills development, inclusive digital access, and philanthropic and civic power and the implementation of green practices in infrastructure.
Challenges	Highlights monopolistic tech control and economic inequality as significant obstacles.	Focuses on intellectual property challenges and talent shortages.	Emphasises skill gaps and collaboration barriers.
Opportunities for data stewardship	Focuses on fostering community-driven projects and setting standards for ethical data management.	Emphasises leadership in regulation and leveraging data-driven insights.	Highlights leadership in digital literacy and promoting philanthropy and civic engagement.
Skills	Focuses on storytelling, business skills, and building local and volunteer networks.	Need for professionals, data users and policymakers with a focus on regulatory mindsets.	Emphasises AI and digital skills, creativity, and the impact of task forces and fit-for-purpose training.
Direction	Emphasises lobbying power, cybersecurity, and the need for an AI strategy.	Highlights the need for a clear vision, decentralised infrastructure, and stakeholder adaptation.	Emphasises readiness for practical implementation, fit-for-purpose initiatives, and EU cultural identity.

Networks	Highlights decentralised and regional networks, with a focus on Europeana's role beyond the EU.	Emphasises new networks, collaboration for value services, and overcoming current network challenges.	Focuses on community management, proactive collaboration, and competitive but collaborative environments.
Knowledge	Stresses the ethical use of data, cybersecurity awareness and local knowledge.	Focuses on content curation, AI, personalised experiences and ethical/legal strategies.	Highlights multi-lingual data access, evidence-based data and inclusive tools.
Tools	Emphasises physical preservation, affordable tools, AI and decentralised platforms.	Discusses multilingual, interoperable tools, proof of concepts and scaling tools.	Emphasises virtual worlds, linked data systems, and addressing the digital divide.
Rules and norms	Discusses survival guides, EU/national regulations and strong frameworks.	Highlights green regulations, ethical frameworks, and EU adaptability.	Discusses copyright, licensing, decentralised processes and ethical/regulatory frameworks.

The differences set out above highlight how the Europeana Initiative and the wider sector must be prepared to respond to policy or practice that might pull in widely different directions. The aspects listed are not new: what might be new is the context and the priority afforded to them in each scenario.

6. How to use the scenarios in your work

These scenarios can be used by anyone to build their resilience, adaptability and future preparedness. There are a number of ways to begin building a futures-orientated culture in an organisation.

Wind-tunnelling - stress-test plans and strategies
The scenarios can be used for 'wind-tunnelling'. This involves 'stress-testing' a plan or strategy for its relevance and effectiveness in different futures. This is a creative and collaborative exercise from which you can draw out learnings to improve and adapt your planning. This can build your future preparedness and shape both short and long-term actions. In turn, this can create a stronger sense of agency in shaping different possible futures, moving from reaction to proactivity.

Build a future-ready vision
The scenarios can help to shape a vision that is relevant (at a high-level) in many different potential futures. Back-casting from this vision can help you plan to create impact, for example, through a Theory of Change. This can also increase a sense of agency in shaping what might be seen as an otherwise abstract future.

Inspire future planning using future scenarios' similarities and differences
The key take-aways and analysis can be used to inspire possible courses of action and strategies that respond to priorities that may emerge in potential futures.

Build a futures library
Building a futures culture starts with being aware of where to find and collect the type of information that documents emerging trends, signals and drivers: namely, a futures library. The bibliography presented below can help you start on this journey. Your library must evolve over time - you must look for new sources of information as they emerge.

Build a futures-oriented organisational culture
The actions above and the monitoring and ongoing sense-making of identified signals, trends and drivers, supports a futures culture in an organisation. Being open to regular discussions of factors that are likely to influence your work is a mindset change for many. It's helpful to remember that this is a creative, enriching and beneficial process both in the short and long-term that deserves attention and input across your organisation.

7. Conclusions

7.1 Focus topics for discussion

This process has identified a number of areas of greatest uncertainty and potential impact across the PESTLE mapping and scenario development process. These include: funding, big tech dominance, immersive technology, green infrastructure and cyber security.

The similarities and differences across the three future scenarios also set out specific areas to discuss and keep in mind when developing future strategies and plans, and which can serve as inspiration for a first discussion of possible futures and factors that may influence the context in which Europeana works.

7.2 Futures literacy in the Europeana Initiative and wider sector

Looking at the responses to the PESTLE survey, the fewest contributions related to environmental, climate change and sustainability. Similarly, there was less focus on social factors and their impact or influence. These are areas in which capacities to scan, analyse and interpret should be developed. Responses focussed predominantly on the short to medium term horizon, namely, the next two to five years. The literature and futures library review complemented this by taking the longer-term horizon (five to more than 10 years in the future).

This demonstrates a need for wider futures literacy in the Europeana Initiative. There is not yet a culture of horizon scanning or foresight: this must be built. This report is one step towards achieving this aim.

7.3 Opportunities and implications for the Europeana Initiative

There is no single preferred scenario or future for Europeana. Neither can the Europeana Initiative predict exactly what trends will shape the wider context in which it operates, or how and when these changes might take place.

While the Europeana Initiative may have a preference for how the world should develop, it must identify where it believes it will have enough agency to be meaningful and impactful.

Considering many relevant and preferred actions and responses allows the Europeana Initiative to actively shape its futures rather than passively letting them unfold.

Furthermore, this report sets out a specific moment time. The Europeana Initiative must be ready to scan for and make sense of new trends, signals and drivers as they emerge.

7.4 Vision for increased futures literacy in the cultural heritage sector

The Europeana Initiative is not the only initiative considering possible futures, and their implications, for the heritage sector. It is hoped that the publication of these resources add to the documentation already available to help heritage professionals build preparedness in their organisations and working cultures, thus supporting Europe's heritage organisations to digitally transform, democratise access to culture, foster a culture of openness and boost Europe's creative capital.

8. Contact information

Europeana Foundation

For questions about this topic in the Europeana Initiative, please contact impact@europeana.eu.

Dr. Lauren Vargas - Your Digital Tattoo

By day, Dr. Lauren 'L' Vargas is a digital dragon wrangler with 20 years of experience assisting organisations with their community, communication and collaboration strategies. Vargas is based in the Netherlands and is the principal of Your Digital Tattoo, an independent research and consultancy practice operating at the intersection of community and technology. She uses her research and consulting practice to further meaningful connection, purposeful inclusion, and digital civility.

As a consultant, Vargas helps mission-based organisations worldwide courageously acknowledge and work through and within continuous change. She uses inclusive and regenerative methods, sensemaking, play, scenario planning, systems mapping, and maturity assessments to help individuals, teams, and organisations of any size become more confident in understanding, managing, using, and creating digital experiments, products, and services.

As an independent researcher, Vargas is an Honorary Research Fellow at the University of Leicester Institute of Digital Culture and Head of Research Practice for the Future Museum (Phase III) initiative led by Museum Booster.

If you are interested in learning more about Digital Transformation Strategy / Strategic Foresight, please visit Your Digital Tattoo and email Dr Lauren Vargas (VargasL@YourDigitalTattoo.com).

Appendix 1. PESTLE questionnaire

We asked about PESTLE trends in a digital questionnaire, using the following questions and open text response boxes.

1. What kind of **political trends or influencing factors** do you see on the horizon that are likely to influence the work of the Europeana Initiative?

Please consider both positive (strengths, opportunities) and negative factors (threats, weaknesses).

2. What kind of **economic trends or influencing factors** do you see on the horizon that are likely to influence the work of the Europeana Initiative?

Please consider both positive (strengths, opportunities) and negative factors (threats, weaknesses).

3. What kind of **social trends or influencing factors** do you see on the horizon that are likely to influence the work of the Europeana Initiative?

Please consider both positive (strengths, opportunities) and negative factors (threats, weaknesses).

4. What kind of **technological or digital trends or influencing factors** do you see on the horizon that are likely to influence the work of the Europeana Initiative?

Please consider both positive (strengths, opportunities) and negative factors (threats, weaknesses).

5. What kind of **legislative, policy or legal trends or influencing factors** do you see on the horizon that are likely to influence the work of the Europeana Initiative?

Please consider both positive (strengths, opportunities) and negative factors (threats, weaknesses).

6. What kind of **environmental and sustainability trends or influencing factors** do you see on the horizon that are likely to influence the work of the Europeana Initiative?

Please consider both positive (strengths, opportunities) and negative factors (threats, weaknesses).

7. If there is anything else you'd like to add, you can do so here. You can also use this chance to go back to any of the earlier questions and review or edit your answers.

Appendix 2. References

- Future Today Institute Tech Trends Report 2024
- United Nations Development Programme Trends Report 2024
- World Economic Forum Global Risks Report 2024
- Copenhagen Institute for Futures Studies Megatrends Catalogue
- Futures of Big Tech in Europe Report
- The Megatrends Hub | Knowledge for policy
- ARCHE project outputs (various)
- Towards a new policy framework to make cultural heritage institutions ready for the digital age
- Sustainability and cultural heritage
- The networked shift: A creative industries foresight study
- Hoe ziet de wereld er over 20 jaar uit? 4 scenario's van DEN
- JRC Publications Repository - European Data Spaces - Scientific Insights into Data Sharing and Utilisation at Scale
- Future Making in the Anthropocene Blog | The urgencies in the field of heritage
- TrendsWatch: The Scenario Edition
- JRC Publications Repository - Reference foresight scenarios: Scenarios on the global standing of the EU in 2040
- Ten issues to watch in 2024
- The Internet Is About to Get Weird Again
- 2024 set to be a groundbreaking year | ArtsProfessional
- Here's your life in 2040 — if the EU's climate plan works – POLITICO

Appendix 3 - Scenario A - "The New Digital Iron Curtain: How U.S. and China Tech Wars Are Reshaping European Culture"

Assessment

This scenario explores Europeana's preparedness in the face of technological conflicts. It highlights common themes across various frames, emphasising improved infrastructure, strategic alignment, talent development, collaborative networks, knowledge acquisition, tool accessibility, and updated regulations. Key differences include varying focuses on lobbying, AI strategies, cybersecurity, local networks, ethical data use, and the role of regional and international partnerships. Readiness ratings drawn from workshop participants show moderate preparedness across most areas, with specific gaps identified in AI strategy, local network building, SEO, and tool development.

Full scenario

By 2035, the digital world has become increasingly centralised, with a few dominant Big Tech companies exerting control over the creation and dissemination of content. The companies that once led the Web 2.0 era, particularly in social media, have been overtaken by new conglomerates pioneering and unifying the fields of Artificial Intelligence and connected devices. This control extends to the common European data space for cultural heritage, leading to a situation where the algorithms dictating content delivery consistently prioritise user engagement and profit at the expense of educational and cultural value.

Initial attempts to establish data sovereignty and regulate technology in Europe fell short. They lacked effective accountability mechanisms and inadvertently stifled European innovation and the economy. The European populace, largely passive in their digital content consumption, has come to accept this new norm, along with the heightened privacy concerns and pervasive surveillance it entails.

The monopolistic tendencies of these corporations and their impact on cultural representation have only added to the declining trust in EU institutions, a decline further exacerbated by market rules that disproportionately benefit these large entities. Moreover, the geopolitical digital sphere has become polarised due to the ongoing tensions between

the United States and China, making it challenging for the European cultural narrative to assert itself against the backdrop of louder American and Chinese content and control.

In this context, the richness and diversity of European heritage are often overlooked by platforms and algorithms in favour of content from countries leading technology development. The EU digital infrastructure could support a diverse cultural expression, yet it does not due to a lack of political will, leading to a homogenization of content. In communities most impacted by forced migration, there is a rising discontent and a push for digitising and preserving cultural assets for future generations, especially amid climate trauma and increased conflict, which indicates an underlying recognition of their importance.

The narrative of climate change and corporate influence reveals a mixed picture. On the one hand, corporate-driven green initiatives are criticised as superficial, more for show than for substantial environmental progress. On the other hand, significant penalties for carbon emissions and a push for genuine green policies are being considered at an international and national level, suggesting some level of effective action against environmental threats. Still, implementation is slow and often mired in bureaucracy and corporate red tape.

Early 21st-century technologies like voice assistants, virtual/augmented reality devices, and bio ID recognition systems have advanced AI, biotech, and interconnected devices. These innovations have transformed daily experiences by prioritising sensorial data over traditional text-based information, marking a significant shift in how we interact with technology. Instead of relying solely on written or typed information, systems increasingly utilise sensorial inputs to create immersive experiences, enhance decision-making processes, and provide intuitive human-computer interactions.

Enabled by sophisticated data processing, this shift facilitates immersive experiences and intuitive human-computer interactions, transforming industries across virtual reality, gaming, automated systems, and environmental monitoring, signalling a move towards a more holistic approach to data analytics that considers the full spectrum of human perception. Content creators, equipped with AI tools, produce a dizzying array of digital experiences, feeding a populace that craves novelty and finding others with similar interests and beliefs. While immersive technologies are widespread, formal education systems do not fully realise the potential for innovative and interactive cultural education.

Instead, such technologies often serve merely as entertainment rather than tools for deep learning.

Economic inequalities have widened due to the gig economy and automation, leading to a workforce polarised between high specialisation and obsolescence. Starved of consistent funding, the cultural sector has responded mainly with passivity. There are limited instances of community-driven and DIY cultural initiatives. This may indicate a latent desire for active participation, challenging the centralised control of cultural content and perhaps foreshadowing a shift towards a more engaged and diverse non-formal cultural ecosystem.

The 2035 narrative paints a world where centralised digital platforms dominate, leading to passive consumption of homogenised content. Still, underlying currents suggest a latent demand for diversity, active engagement, and a return to cultural richness. The future of European cultural heritage in this digital landscape is uncertain, caught between the forces of centralization and a budding grassroots desire for authenticity and participation.

Appendix 4 - Scenario B - "EU Leads the Charge in Global 'Regulation Era' Governance, Setting New Standards for Data Transparency"

Assessment

In this scenario, common themes include the importance of understanding and utilising shared data spaces, developing specialised skills, fostering strategic partnerships, acquiring essential knowledge, implementing appropriate technologies, and adhering to regulations and standards. Europe's readiness is generally moderate, with ratings around 2-3 out of 5, indicating areas for improvement. Differences include specific challenges such as a lack of clear vision and decentralised infrastructure, the necessity for specialised training, legal and ethical knowledge strategies, the development of multilingual and interoperable tools, and detailed regulatory frameworks.

Full scenario

By 2035, global society had undergone a significant transformation, evolving into a multipolar structure with a sophisticated, technologically advanced governance system. This system, decentralised yet tightly controlled by advanced oversight mechanisms, is designed to ensure a balance of power while protecting privacy. This new governance era, termed the 'Regulation Era,' witnessed the European Union taking a leadership role and emerging as a central authority in shaping global standards.

In this period, there is an increased focus on accountability, and rigorous surveillance measures are deployed to oversee all aspects of governance. The EU, spearheading this movement, enforces strict transparency and regulatory standards across member states and beyond, aiming to showcase the concrete effects of governmental investments and initiatives. Data is treated as a critical national asset, underpinning policy decisions and strategies, thus reinforcing the rationale for substantial funding towards projects that capitalise on this asset to benefit society.

In this new world, collaboration between the public and private sectors reaches new heights, driven by a shared goal and fear of punitive measures to harness data for the collective good while upholding individual privacy rights. Governments partner with private entities in an extensive sharing and utilisation of data, pooling together resources that spur

innovation and improve the delivery of public services. This collaborative model ensures that public funds are used more efficiently and brings the dynamism and innovative prowess of the private sector into public projects. The result is a significant enhancement in the accessibility, effectiveness, and impact of government initiatives, which are now more responsive to the citizens' needs and capable of quick adaptation to societal changes.

Addressing climate change has become a central focus, managed more effectively through dedicated efforts towards developing sustainable infrastructure, advancing renewable energy technologies, and adopting responsible resource management practices. Environmental awareness now extends into the tourism sector, where virtual reality platforms play a pivotal role. The fuel price has increased; thus, the number of people who can afford to travel has significantly decreased. These virtual platforms relieve physical sites from the pressures of traditional tourism by offering virtual educational and recreational experiences. This digital approach helps preserve cultural and historical sites. It allows people worldwide to explore and experience these sites without the environmental footprint associated with travel.

The immersive technology market has skyrocketed and has profoundly altered the landscape of human interaction. These technologies create virtual spaces where individuals actively shape and participate in digital environments, engaging in rich social and political discourse. These virtual arenas become hubs for cultural expression, prompting a shift in consumer values from physical possessions to immersive digital experiences. This transformation deepens individuals' connections to history and culture, enabling them to engage with cultural artefacts and narratives in interactive, personalised ways that enrich their understanding and appreciation of global heritage.

However, the swift progression of these technologies introduces complex challenges, particularly concerning intellectual property rights. Advanced algorithms are employed to ensure robust protection of these rights, which, while securing fair compensation for creators, sometimes impose barriers to the free exchange of cultural content. Additionally, the pace at which new technologies develop often outstrips the rate at which legal and ethical frameworks can adapt, creating gaps that can hinder technological innovation and application. Addressing these challenges has not been without its challenges. It requires continuous regulatory vigilance and adaptability to ensure legal frameworks keep pace with technological advancements, fostering an environment conducive to innovation while protecting creators and consumers.

Society has adapted to these technological shifts by embracing policies designed to support those displaced by automation, such as implementing a basic income for tech-displaced workers. This shift encourages a society that values adaptability, lifelong learning, and a conscious approach to consumption. Consumers increasingly demand quality products and services and ethical practices from corporations, reflecting a broader social and environmental responsibility commitment.

Europe distinguishes itself by exemplifying a governance model that integrates traditional values with modern technological innovations. This model not only influences other regions to adopt similar governance practices but also positions Europe at the forefront of ethical and sustainable governance. Despite nostalgia for less complex times, the prevailing sentiment across society is enthusiasm and optimism. As humanity continues to navigate the complexities of balancing its historical essence with the exciting possibilities of technological advancements, there is a collective anticipation for the innovative solutions and opportunities that the future holds.

Appendix 5 - Scenario C - "Europe's Digital Decade: A Groundbreaking Era of 'Coopetition' Sparks Innovation and Inclusivity"

Assessment

In this scenario, common themes include Europeana's readiness to deliver future-aligned products, the need for specialised digital skills and training, the importance of forming partnerships, ethical knowledge management, the necessity for new digital tools, and adherence to regulations. Differences highlight various focuses: foundational readiness versus practical implementation, the need for AI skills versus creativity and cultural heritage roles, broad collaboration strategies versus detailed community management, multilingual data access versus evidence-based data, and decentralised processes versus ethical frameworks. Readiness ratings indicate moderate preparedness in most areas, with significant improvement in developing digital tools and regulatory frameworks.

Full scenario

By 2035, collaboration has become the cornerstone of workforce dynamics, strongly emphasising collective action. This transformative approach relies heavily on team-based projects and individual commitments to continuous learning, significantly enhancing digital literacy. Organisations encourage and require their employees to engage in ongoing reskilling and upskilling, particularly in digital competencies. This has fostered a resilient, adaptable workforce capable of navigating and leading the rapidly evolving technological landscape. The outcome is a dynamic work culture where innovation flourishes within collaborative effort and mutual support.

Europe has united under a bold vision of sustainability and inclusivity, leading the world in green infrastructure and cooperative policy-making. Driven by the acute awareness of climate change as a non-partisan issue, political entities across the continent have shifted towards more collaborative resource management practices. This includes the widespread implementation of renewable energy systems and green public transportation solutions, aiming to dramatically reduce carbon footprints and promote sustainability as a core societal value.

Personal data sovereignty had taken root, with individuals exercising unprecedented control over their personal information. This shift has been supported by the advent of secure, private data platforms that individuals use to manage their data. As a result, personal data has become a valuable asset that individuals can leverage for personal gain, influencing everything from consumer behaviour to political engagement. This empowerment has sparked innovation in data management technologies and services, creating a thriving economy centred around data integrity and utility.

Education systems have transformed profoundly, treating digital competence as fundamental rather than supplementary. This revolution is characterised by collective educational initiatives emphasising practical, technology-driven learning experiences. Schools and universities collaborate closely with industries to ensure that curricula are continuously updated to reflect the latest technological advancements and market needs. This approach has created a perpetually learning society where individuals are well-equipped to thrive in a digital-first economy.

Corporate incentives have evolved to prioritise team development and the collective sharing of knowledge. In this new corporate culture, acquiring digital skills, particularly those related to AI and machine learning, is highly encouraged and often mandatory. Companies invest heavily in training programs that enhance skills and foster a sense of community and shared purpose among employees. This shift has resulted in a more cohesive and innovative workforce that values ethical practices and collective success over individual achievement.

Governance structures have evolved to empower citizens better and facilitate charitable involvement. Political representation now more accurately mirrors the demographic and psychographic compositions of the population, leading to governance that is truly representative and more responsive to the needs of its constituents. Ethical governance has become the norm, with a strong emphasis on transparency and public accountability. The rise of philanthropy and active non-governmental organisations (NGOs) has also played a crucial role in this new governance model, driving social change and innovation through grassroots movements and community involvement.

The Global South has risen as a critical hub of innovation, particularly in response to the severe impacts of climate change. This region's unique challenges have spurred a wave of creative solutions and rapid technological advancements, making it a global leader in areas like renewable energy, sustainable agriculture, and disaster-resilient infrastructure. The

Global South's resilience and ingenuity have transformed its landscape and provided valuable lessons and inspiration for global climate resilience strategies.

The 'layered EU digital decade' has fully materialised and is characterised by significant cross-disciplinary creativity and excellence in digital practices. European hubs have become centres of innovation in immersive technology, robotics, and clean energy, driving economic growth and ecological stewardship forward. This period has also seen a concerted effort to integrate digital conservation with cultural heritage preservation, responding to the increasing threats posed by climate change to Europe's rich historical legacies.

The digital, cultural, and heritage sectors have embraced the concept of 'coopetition'—cooperative competition—creating a fertile environment for preserving Europe's rich cultural heritage and advancing cutting-edge technological innovations. Nonprofits and grassroots organisations are thriving, fueled by a resurgence in philanthropy and a collective commitment to addressing pressing social issues. This cooperative spirit is encapsulated in the emergence of the European Data Space, a vibrant platform for digital innovation and interaction. It reflects Europe's commitment to leading in the digital age while safeguarding its historical and cultural identity.

This expanded vision for 2035 portrays a Europe that is not only at the forefront of technological and ecological innovation but also a beacon of social, cultural, and ethical progress on the global stage.