

# The Futures of Museums and Art Institutions by 2050

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This report was created in collaboration with FutureEverything, drawing directly from insights gathered during workshops facilitated in November 2024.

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## Executive Summary

This comprehensive report is the product of a meticulously executed two-phase research process. The first phase comprised extensive preliminary surveys conducted among professionals from museums and art institutions, providing a broad range of sectoral perspectives. These responses were systematically organised using the PESTLE<sup>1</sup> framework, offering a robust analytical foundation.

The second phase culminated in a two-day workshop held at the Museum of Modern Art in Warsaw in November 2024. This workshop employed sophisticated foresight methodologies—such as the Rip van Winkle method<sup>2</sup>, weak signals analysis (Horizon Scanning<sup>3</sup>), and uncertainty mapping—to envision how cultural institutions might adapt and evolve in response to technological, social, and environmental changes.

1. Four Distinct Futures Scenarios emerged through a systematic process of scenario-building and analysis of the collected data:
  - Trust Without Boundaries envisions a blockchain and AI-enabled democratisation of cultural institutions, with token-based governance and automated management systems of the resources allocated to the shared pool,
  - Symbiotic Museums feature integration between human and non-human agents, creating complex ecosystems where different forms of intelligence collaborate,
  - Totemic Democracy and Neutrality explores tensions between institutional neutrality and social fragmentation in increasingly polarised societies,
  - Digital Abundance examines implications of complete digitalisation of cultural experiences and virtual-first engagement.

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<sup>1</sup> PESTLE analysis studies the key external factors (Political, Economic, Sociological, Technological, Legal and Environmental) that influence an organisation.

<sup>2</sup> The Rip van Winkle method was developed by RAND as part of the Assumptions Based Planning methodology. Its purpose is to identify assumptions about the future. The resulting sets of assumptions and/or uncertainties become the foundation for formulating hypotheses.

<sup>3</sup> Horizon scanning is a technique for detecting early signs of potentially important developments through a systematic examination of potential threats and opportunities.

2. Critical Uncertainties Identified: The research process revealed several key areas of uncertainty that emerged from both the preliminary survey and workshop discussions:
  - Evolution of public funding models amid competing priorities,
  - Impact of climate change on operations and infrastructure,
  - Role of artificial intelligence in curation and management,
  - Future of cultural authority in democratised society,
  - Balance between physical and digital experiences,
  - Relationship between local and global cultural networks,
  - Role of museums in addressing societal challenges.
3. Key trends and transformations analysis of weak signals<sup>4</sup> and emerging patterns from both the preliminary research and workshop discussions highlighted several significant transformational trends:
  - Shift from traditional institutional models to more fluid, adaptive organisational structures,
  - Integration of artificial intelligence and other non-human agents in decision-making processes,
  - Growing emphasis on environmental responsibility and sustainability,
  - Evolution of curatorial practice and expertise in response to technological changes,
  - Increasing importance of community engagement and social responsibility.
4. Significant Challenges: The combination of survey responses and workshop deliberations revealed several critical challenges that institutions must address:
  - Maintaining relevance while preserving cultural heritage,
  - Balancing technological innovation with human experience,
  - Ensuring accessibility while developing sustainable funding models,
  - Adapting to changing demographic and social patterns,
  - Managing the tension between local and global perspectives.

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<sup>4</sup> A weak signal is an existing thing or phenomenon that can be interpreted as an indicator of potential greater change.

5. Strategic Implications: Based on both the preliminary research phase and workshop outcomes, several key strategic considerations emerged for institutions planning their futures:

- Need for flexible and adaptive organisational structures,
- Importance of developing new competencies while preserving core expertise,
- Critical role of technological integration in future operations,
- Necessity of building stronger networks and partnerships,
- Requirement for innovative funding and resource allocation models.

The research suggests that the futures of museums and art institutions will likely be characterised by multiple coexisting models rather than a single dominant approach. Success will require institutions to balance tradition with innovation, physical with digital experiences, and institutional authority with community engagement. The findings present both significant challenges and opportunities for institutional renewal and innovation in the cultural sector.

The multi-phase research methodology employed in this study - combining broad preliminary surveys with intensive workshop discussions - ensures that the findings represent both wide sector perspectives and deep, focused analysis. The second phase culminated in a two-day workshop, co-facilitated with FutureEverything, held at the Museum of Modern Art in Warsaw in November 2024. This dual approach strengthens the reliability and applicability of the report's conclusions and recommendations.

Recommendations include developing more flexible organisational structures, creating innovative solutions that bridge traditional and new practices, building stronger networks and partnerships, investing in new competencies while preserving core expertise, and maintaining cultural missions while adapting to new social and economic realities.

This report provides a valuable framework for cultural institutions to prepare for and shape their futures in an increasingly complex and rapidly changing world. The scenarios and analyses offered serve not as predictions but as tools for strategic thinking and planning, helping institutions navigate potential futures and make informed decisions about their development paths.



## Introduction

As we near the mid-21st century, museums and art institutions stand at a pivotal crossroads, grappling with unprecedented challenges that compel a re-evaluation of their traditional roles, operational models, and fundamental purpose within society. This report, born out of an intensive two-day workshop held at the Museum of Modern Art in Warsaw on 5–6 November 2024, represents a systematic endeavour to chart potential futures for cultural institutions in an increasingly uncertain world.

The workshop brought together representatives from Polish art institutions and museums of varying scales - from major metropolitan museums to regional cultural centres, from experimental art spaces to traditional galleries. This diversity of institutional perspectives provided a rich terrain for exploring the multifaceted challenges facing cultural institutions in both urban and regional contexts. The participation of professionals from different organisational scales and geographical locations helped capture the nuanced ways in which global trends interact with local realities.

What makes this study particularly interesting is its methodological approach. By combining the Rip van Winkle method with weak signals analysis and uncertainty mapping, the research team was able to move beyond conventional trend extrapolation to identify potentially disruptive changes that might reshape the cultural sector. The Rip van Winkle method, originally developed at RAND, proved especially effective in helping participants break free from present-day assumptions and imagine radically different futures.

The analysis revealed several intriguing patterns that challenge common assumptions about the futures of cultural institutions. Perhaps most strikingly, the relationship between technology and cultural experience emerged as far more complex than the often-cited digital transformation narrative suggests. Instead of a simple progression from physical to virtual experiences, the scenarios point to the emergence of sophisticated hybrid forms where the boundaries between material and digital, human and non-human, natural and artificial become increasingly fluid and contested.

Particularly noteworthy is how environmental concerns permeate all aspects of future museum operations. Climate change emerges not just as an external threat but as a fundamental force reshaping institutional priorities and functions. The scenarios suggest that museums might need to adapt to serve as climate shelters, cooling centers during heat waves, or emergency resource



distribution hubs during environmental crises. This raises profound questions about the relationship between cultural preservation and social resilience.

The political dimension of cultural institutions' futures also features prominently in the analysis. In an era of rising authoritarianism and democratic backsliding, questions of institutional autonomy take on new urgency. The scenarios explore various possible trajectories - from complete subordination to political authority, through various hybrid models, to radical autonomy based on cooperative and commons-based approaches. These political considerations intersect with questions of funding and governance, suggesting that the traditional model of public funding might need to be reconsidered.

A recurring theme across all scenarios is the transformation of curatorial practice and expertise. As artificial intelligence and other non-human agents become increasingly sophisticated, traditional notions of curatorial authority and artistic creation are being challenged. The scenarios suggest various possible responses to this challenge, from resistance and preservation of human expertise to radical integration with AI systems and other non-human intelligences.

The four principal scenarios outlined in this report—Trust Without Boundaries, Symbiotic Museums, Totemic Democracy and Neutrality, and Digital Abundance—offer distinct yet equally plausible visions of the future. Each scenario delves into unique dimensions of potential institutional transformation, examining the varied ways organisations might evolve.

"Trust Without Boundaries" investigates the possibilities of radical democratisation through technological means, imagining futures where blockchain and AI systems enable new forms of institutional governance and cultural participation. This scenario raises important questions about the relationship between technological infrastructure and democratic practice in cultural institutions.

"Symbiotic Museums" explores the potential for deep integration between human and non-human agents in cultural institutions, imagining museums as complex ecosystems where different forms of intelligence - human, artificial, and biological - interact and co-create. This scenario challenges anthropocentric assumptions about cultural production and curation.

"Totemic Democracy and Neutrality" examines the tensions between institutional neutrality and social fragmentation, imagining futures where museums must navigate increasingly polarised societies while maintaining their role as spaces for dialogue and reflection. This scenario raises crucial questions about the political role of cultural institutions in divided societies.

"Digital Abundance" analyses the implications of complete digitalisation of cultural experience, imagining futures where physical artifacts become secondary to virtual experiences. This scenario explores both the opportunities and risks of digital transformation in the cultural sector.

The research also identified several critical uncertainties that will likely shape the futures of cultural institutions:

1. The evolution of public funding models in an era of competing priorities and fiscal constraints,
2. The impact of climate change on institutional infrastructure and operations,
3. The role of artificial intelligence in curatorial practice and institutional management,
4. The futures of cultural authority in an increasingly democratised and fragmented society,
5. The balance between physical and digital experiences in cultural institutions,
6. The relationship between local and global cultural networks,
7. The role of museums in addressing social and environmental challenges.

These uncertainties interact in complex ways, creating a web of possible futures that institutions must navigate. The scenarios presented in this report are not intended as predictions but rather as tools for strategic thinking and planning. They help illuminate the range of possibilities that cultural institutions might face and the strategic choices they might need to make.

Importantly, the research suggests that the futures of cultural institutions will likely be characterised by multiple coexisting models rather than a single dominant paradigm. Different institutions might need to adopt different approaches based on their specific contexts, resources, and missions. This multiplicity of possible futures underscores the importance of institutional adaptability and strategic foresight.

The findings presented in this report have significant implications for cultural policy, institutional strategy, and professional practice in the cultural sector. They suggest that museums and art institutions need to develop new capabilities, rethink their organisational models, and perhaps most importantly, reimagine their role in society. The challenges ahead are substantial, but they also present opportunities for institutional renewal and innovation.





## Introduction to Scenario Building

The development of futures scenarios for museums and art institutions followed a systematic and collaborative process that combined various foresight methods and analytical approaches. The process was designed to capture both the complexity of potential futures and the practical implications for cultural institutions.

The scenario development process consisted of several interconnected stages:

### 1. Identifying and Clustering Uncertainties

The process began with the Rip van Winkle technique, originally developed at RAND. This method helps identify key yet vulnerable assumptions about the futures through a series of yes/no questions. Participants were asked to imagine waking up after 20 years and having the opportunity to ask questions about the future world. The questions revealed areas of uncertainty that participants considered most critical for the futures of museums and art institutions. This constraint helped identify clear points of uncertainty rather than general areas of curiosity about the futures.

The identified uncertainties were then grouped into thematic clusters, creating coherent areas of potential change. This clustering process helped identify the main drivers of change that would form the foundation of the scenarios.

You can find the full list of uncertainties in [Annex 1](#) at the end of the report.

## Understanding Uncertainties and Their Clustering

Uncertainties represent key factors that could significantly influence the futures but whose outcomes remain unclear. In futures studies, identifying and analysing uncertainties is crucial for understanding potential future developments and preparing strategic responses. Unlike trends or weak signals, which indicate emerging changes, uncertainties point to areas where multiple different outcomes are possible and equally plausible.

The collected uncertainties were wide-ranging, covering various aspects of museum operations and their role in society. They included questions about technological integration, social relevance, governance models, environmental impact, and the very nature of art and cultural experience. These individual uncertainties were then analysed and grouped into thematic clusters to identify broader patterns and key areas of uncertainty that could form the basis for scenario development.

The clustering process revealed several significant patterns in how stakeholders view potential future changes and challenges for museums and art institutions:

### *1. Management and Decision-Making*

Multiple clusters focus on governance and control issues, particularly through the lenses of "AI cultural managers", "AI curatorial centaurs", and "Responsibility in museums". This pattern suggests a fundamental uncertainty about future decision-making processes in cultural institutions. Key questions include:

- The balance between human and artificial intelligence in institutional leadership;
- The potential for hybrid decision-making systems combining human judgment with AI capabilities;
- The transformation of traditional hierarchical structures;
- The role of democratic processes in institutional governance;
- The changing nature of curatorial authority and expertise.

### *2. Environmental Response and Adaptation*

The "Carbon intensity and role in the fight against climate change" cluster reflects a growing recognition of museums' environmental responsibilities. This extends beyond basic operational concerns to question:

- The active role of cultural institutions in addressing climate challenges;
- The transformation of museum architecture and infrastructure;
- The balance between preservation requirements and environmental impact;
- The potential for museums to model sustainable practices;
- The institution's role in climate education and advocacy.

### 3. *Social Function Evolution*

Several clusters ("Changing social, political and cultural function", "Relationship with audience", "Public interest in art") demonstrate profound uncertainty about museums' future social role. This pattern encompasses questions about:

- The potential transformation of traditional museum functions;
- The relationship between institutions and their communities;
- The relevance of current museum models to future societies;
- The balance between entertainment and education;
- The role of museums in social change and activism.

### 4. *Physical vs. Digital Reality*

The clusters around "Spaces for the reception of art" and "Reception of art in physical or virtual space" reveal ongoing uncertainty about the future nature of art experience. Key aspects include:

- The continued relevance of physical presence in art experience;
- The potential for hybrid physical-digital experiences;
- The transformation of exhibition spaces;
- The role of new technologies in art perception;
- The changing nature of collection accessibility.

### 5. *Identity and Democracy*

The clusters dealing with "Who creates narratives", "Role of progressive museums", and questions of democracy point to fundamental questions about:

- Representation and authority in cultural institutions;
- The balance between different voices and perspectives;
- The role of museums in identity formation;
- The relationship between institutions and political power;
- The tension between neutrality and advocacy.

## 6. *Human-Nature-Technology Interface*

Several clusters ("The role of non-human agents", "Art by non-human beings") indicate growing uncertainty about the relationship between human and non-human actors. This pattern raises questions about:

- The changing definition of artistic creation;
- The role of artificial intelligence in creative processes;
- The integration of natural systems into institutional operations;
- The potential for new forms of art and expression;
- The evolution of curatorial practice in response to non-human actors.

These patterns in the clustering suggest that cultural institutions face multiple overlapping transformations that could fundamentally reshape their nature and purpose. The uncertainties reflect not just operational or technological changes, but deeper questions about the role of cultural institutions in an evolving society.

Moreover, these clusters indicate that future changes are likely to be interconnected - shifts in one area (such as the integration of AI in management) will likely have ripple effects across other areas (such as the relationship with audiences or the nature of artistic creation).

This analysis suggests that cultural institutions need to prepare for fundamental transformations that go beyond incremental changes to existing models. The patterns of uncertainty point to the potential emergence of entirely new paradigms for cultural institutions, requiring innovative approaches to planning and adaptation.

## 2. Developing Alternative Futures Hypotheses

For each driver of change, multiple futures hypotheses were developed. These hypotheses explored different possible outcomes and their implications for museums and art institutions.

You will find all the clusters of uncertainties and the associated hypotheses about the futures in [Annex 2: Clusters of Uncertainties and Hypothesis About Futures](#).

### Developing Alternative Futures Hypotheses from Uncertainty Clusters

The process of developing alternative futures hypotheses represents a crucial step in scenario building, where identified uncertainties are transformed into possible futures states. In our study, this involved taking the clustered uncertainties and exploring different possible outcomes for each major area of concern.



## The Development Process

For each of the 34 identified clusters of uncertainties, multiple hypotheses were developed to explore different possible futures states. These hypotheses were not simple extrapolations of current trends, but rather distinct and plausible futures that might emerge from the interplay of various factors. The process aimed to:

- create clearly differentiated futures states;
- maintain internal consistency within each hypothesis;
- explore both expected and unexpected outcomes;
- consider interconnections between different areas of change.

## Selected Examples of Clusters and Their Hypotheses

Below we present a few representative examples from the full set of hypotheses developed during this process. These examples illustrate the range and depth of future possibilities considered, though they represent only a small portion of the complete analysis.

### *1. Relationship Between Museum Programs and Non-artistic Reality*

Selected hypotheses from this cluster include:

- Museums operating in complete artistic autonomy, focused solely on aesthetic issues;
- Museums as activist spaces engaged in sociopolitical change;
- Museums as pure entertainment venues.

### *2. Spaces for Reception of Art*

Key hypotheses in this cluster explore varying degrees of physical-digital integration:

- Hybrid spaces combining physical and virtual elements;
- Fully virtual museums with no physical presence required;
- Traditional physical-only spaces.

### *3. Role of Non-human Agents in Museum Management*

Representative hypotheses include:

- Complete AI management replacement;
- More-than-human paradigm including nature;
- Traditional human-only management;
- Human-AI centaur model.

### *4. Carbon Intensity and Climate Change Role*

Selected hypotheses from this extensive cluster include:

- Partial success in sustainability efforts;
- Complete carbon neutrality achievement;
- High carbon intensity continuation;
- Green-washing scenarios.

## Patterns in Hypothesis Development

Several notable patterns emerge from the full set of hypotheses developed across all clusters:

1. Most clusters generated 3-6 distinct futures states;
2. Hypotheses often represent gradients from traditional to radical change;
3. Some hypotheses introduce unexpected reversals or backlash scenarios;
4. Many clusters include "hybrid" or "middle ground" futures;
5. The hypotheses often reflect tensions between different institutional values and priorities.

## Implications for Scenario Development

The complete set of developed hypotheses served as building blocks for the final scenarios, with compatible hypotheses from different clusters combined to create coherent futures worlds. This process required careful consideration of how different hypotheses might interact and influence each other, leading to the four distinct scenarios presented in the final analysis.

The examples presented above represent only a portion of the entire analysis but illustrate the depth and complexity of the futures considered in this study.

## 3. Mapping Weak Signals

The next stage involved identifying and analyzing weak signals - early indicators of potential future changes. These signals were categorized using the PESTLE framework (Political, Economic, Social-Cultural, Technological, Legal, and Environmental factors). This systematic approach helped ensure comprehensive coverage of different aspects that might influence the futures of cultural institutions.

### Identifying Weak Signals (Emerging Issues of Change)

Weak signals represent early indicators of potential future changes - subtle signs in the present that might evolve into significant trends or disruptions. In foresight methodology, identifying and analysing weak signals is crucial for understanding possible future developments and preparing for emerging challenges and opportunities. These signals, while often overlooked in day-to-day operations, can provide valuable insights into transformative changes that might reshape entire sectors or systems.

The process of identifying weak signals requires a careful balance between sensitivity to emerging changes and the ability to distinguish meaningful indicators from background noise. In the context of cultural institutions, this becomes particularly challenging as these signals may emerge from various domains - from technological innovations and social movements to environmental changes and political shifts.

As part of our foresight process, we collected and analyzed responses from a survey distributed among cultural institutions professionals. Their insights and observations helped identify emerging

issues that might influence the futures of museums and art institutions. These signals were then systematically categorised using the PESTLE framework (Political, Economic, Social-cultural, Technological, Legal, and Environmental factors), allowing for a comprehensive mapping of potential future changes.

The following compilation presents the weak signals identified through this survey process. They range from shifts in audience behavior and technological developments to environmental challenges and changing social dynamics. Each signal has been documented with its potential implications for cultural institutions, providing a rich foundation for developing future scenarios and strategic responses.

## The List of Identified Weak Signals

**The list of signals below is presented exactly as described by the study participants. We have not corrected any grammatical or linguistic errors, nor edited the content in any way.**

### POLITICAL

#### *Authoritarian Turn*

The impact of disturbing political factors on institutions/museums is usually overlooked. Even in the survey so far, no questions or suggestions linking institutions to political systems have emerged, as if there is an 'end of history'. The current institutions in Poland are based on a model created under the (socialist) welfare state, somewhat transformed due to the 'reforms' in the 1990s. As authoritarian tendencies develop, the institution/museum model will change. This is evidenced by the flourishing of identity institutions and history museums. This changes the way we think about the institution, restricting its models to one acceptable model.

#### *Segmentation/Fragmentation of the Public Sphere*

The segmentation of the public sphere results from the breakdown of the public sphere and the creation of its privatised segments or even fragments. These are mostly identity-based, but often use identity narratives as a pretext. Segmentation/fragmentation not only creates bubbles, but depoliticises the institution, which means that it loses the agency.

#### *Local vs global crisis*

Is the division between local and global still relevant in the future, as we observe shifts into local/national perspectives.



### ***Neutrality***

The advocacy for neutral/non-partisan/"transpolitionality" of art institutions. This is particularly dangerous for museums as a safe space/sanctuary, in times of geopolitical upheavals (e.g. solidarity with Palestine, BDS movement).

### ***Militarization of public life***

There are official announcements in the public space that the current generation will stand up to fight with weapons in hand. Military exercises are being organized for employees of various institutions. An air defense system is being tested in Warsaw for the first time in years. This means changes in the structure of budget spending shifted towards defense at the expense of science and culture. Changes in the social climate, less openness, more fear and distrust. Potential impediments to conducting international art projects, impediments to travel, dividing artists into those from friendly and hostile countries.

## **ECONOMIC**

### ***Energy crisis***

The inefficiency of the electricity transmission system in Poland prevents the full use of alternative sources of energy production. The cost of maintaining the building, energy bills are consuming an increasing part of the budget. This implies a potential further reduction in financial outlays for substantive activities, the need to look for new ways to finance activities through external resources or commercial activities.

## **SOCIETAL-CULTURAL**

### ***Decentralization***

After the pandemic, a flight of young people from major cities to towns and peripheries was observed. The art world is highly centralized, with the vast majority of artistic life taking place in capitals and major cities.

### ***Posthumanist philosophies***

Historical artworks whose creation involved the death of animals are no longer socially acceptable. This can cause both the need to decide the fate of already existing artworks and influence the search for other, more ethical methods of working with non-human species in the field of art.



### ***Dehierarchization***

There are new, collective ways of decision-making. It could change programming decisions of art institutions and make them more socialized, better connected to their communities and better prepared to serve them.

### ***Building translocal programs in an on-going manner***

Bringing knowledge (that is not superficial, forgotten, or treated as curiosity) from outside of our own culture circles and building solidarity and trust. This can be witnessed in moments of crisis (such as war in Ukraine and e.g. Słonecznik initiative in MoMA Warsaw), however, I see a potential of bringing this further - as a program not only for the regions that are close geographical proximity and, therefore, with close cultural ties, but rather for countries that have less in common or are more divided apart. This could introduce diverse and equality approach, bringing known concepts into unknown perspectives, enriching the working people and the visitors with not only "aesthetic" or "shock" value, but with actual learning and unlearning from one-another, breaking down of prejudices and enriching the approach towards ways of governing the institutions, realising programmes, approaching the audience, etc.

### ***Major shifts: generational, technological and ideological leading to identity crisis***

The convergence of generational, technological, and ideological shifts is pushing museums into an "identity crisis". As younger, tech-savvy audiences demand interactive and personalized experiences, and societal movements call for more inclusive and diverse narratives, museums are forced to reexamine their core mission. Traditional models of curation, storytelling, and management are being questioned, making institutions reassess what they stand for, who they serve, and how they engage with the modern world. This ongoing transformation pressures museums to adapt rapidly, or risk becoming irrelevant, as they struggle to balance heritage with contemporary relevance.

### ***Cultural emancipation of people with disabilities***

People with disabilities create art that is a portal to a different understanding and experience of the world. Reversal of order. Until now, art has been translated into the language of the disabled. Thanks to emancipation, art becomes a medium of communication between everyone, in all directions.

### ***Hybrid body***

We already know that the human body is plural. It consists of the human and its microbiome, social and technological pressures, and is part of a complex web of life. New museum practices supporting not individual but collective reception.



### *The importance of Heritage*

How the museum and law regulation will follow dynamic civilisation and climate changes in terms of heritage definition and what we would take under consideration, when we will preserve objects, documents for the next generations. This is particularly relevant for museums in the time of climate changes and tension of global politics.

### *Accessibility*

Preparing exhibitions and events for various audiences, including those with disabilities. This influences both the design of the institutional space and thinking about the content.

### *Social involvement*

Engagement and polarization. Engagement in current social issues can, on the one hand, positively influence the shaping of public debate, but on the other hand it can exclude social groups with specific political views.

### *Dematerialisation*

Art goes immaterial (again!). The proliferation of instruction and protocol-based art practices. Zero-emission transport, shared resources, dissemination of authorship, singularity and ownership of the artwork.

### *Health issues*

After the coronavirus pandemic, we are seeing deteriorated general health in society. This is especially true of the increasingly observed traumas, neuroses, hypersensitivity to stimuli. This means that it is necessary to open up to the new needs of the public, that its new sensitivity and psychological needs must be taken into account. This situation is changing the way we think about the architecture of galleries, designing the annual budget with new needs in mind, such as organizing meetings and workshops aimed at addressing health issues.

### *New demographics*

New demographics related to climate migration and wars will affect the actions of all public institutions, including museums, which can set an example with their inclusive programs. Critical museums are spaces for resolving tensions and counteracting growing polarization. New expectations, new aesthetics, new practices.



### *Art audiences are changing*

Well-educated members of the urban middle-class in their twenties, thirties and forties, who are considered to be the traditional audience of art museums and institutions, do not visit those institutions nor do they find them and modern and contemporary visual arts in general relevant, interesting or important. When they write, think and discuss they use examples from cinema, pop culture, TV series, computer games etc. but it is very rare for them to refer to modern and contemporary art. For them a visit to an exhibition, gallery or arts festival is just not a part of their lifestyle neither do they feel that it is a "duty" of a well-educated person to do so. This might have a great impact on what art museums and institutions actually do, and what kind of experiences and activities they organize. If they do not reach their traditional audiences -- who are they reaching, then? If they are not the well-educated urban middle-class expecting the institution to be a space of learning, analyzing history and creating new languages and imaginations for the future -- then who are they? What do those people expect? Entertainment? Commerce? Party? Who knows?

## TECHNOLOGICAL

### *Developments in computing technology*

Technology is one big disruption. But the most important in the context of institutions is that this invalidates/changes the previous model of how events and programmes are received. Due to the development of technology, and especially the logic of social media, artistic events are losing their material and long-term status. They begin to function in the same sphere as a single post in a data stream. The logic of the data stream, in which posts disappear within seconds, has become a dominant model of reception. The institutions' activities will have no significance.

### *Arrival of AI in all disciplines of life*

People are no longer thinking by themselves, preferring to ask questions to AI assistants. This is crucial for the education process and everyday communication, but also for access to the cultural institutions and the way they need to communicate with the public.

### *Smart devices can give us the additional perceptive power*

Our senses can develop and perception of artworks can be changed. It can create a totally new ecosystem of perception and in art institutions new ways of seeing/hearing things.

### *Cyber as Real*

Cyber reality is no longer a parallel reality, nor is the Internet a tool. For us to continue to work within a critical art frame, we have to acknowledge the immersive presence of new technologies in all aspects of our lives and how these change accordingly. This is still often overlooked in Poland. This



can be seen already abroad (institutions such as Ars Electronica, Kapelica Gallery, LAS, etc.), however not as an established institution with an ongoing programme in Poland.

### ***AI-powered personalized audio tours***

The Smithsonian American Art Museum has introduced AI-powered personalized audio tours through the Smartify app, tailoring museum visits based on user preferences, time constraints, and interests. This technology marks a shift from traditional linear tours to highly individualized experiences.

## LEGAL

### ***Returning objects - colonial artefacts***

The topic of returning colonial objects increasingly appears in public discussion. This is particularly relevant for countries with a colonial past, like the United Kingdom, Germany, etc. How will this change museums with colonial objects in these countries?

## ENVIRONMENTAL

### ***Climate crisis - art museums and institutions as spaces for cooling***

With the climate crisis becoming more severe, major public institutions, with their architecture, infrastructure and air conditioning systems, are changing their functions. Already during COVID they were used as morgues, hospitals, food delivery centers, etc. With the impending heat waves all around the world, more and more often such institutions are designated as emergency public cooling spaces, where people can cool down to avoid the worst effects of heatwaves. Well, the climate crisis might simply completely change the function of art museums and institutions -- here I focused on them becoming public cooling spaces, but there are many other, more dystopian, possibilities. They can become shelters during extreme weather and disasters. Or mass morgues. Or affordable public housing. Or camps for climate migrants. Etc. Etc.

### ***Heatwaves***

We're already boiling and no one can ignore it. Particularly relevant for future uses of museum infrastructure (cooling centers, etc.)

### ***Nature as an active player***

Including elements of nature (plants, animals) as equal entities in decision making and governing the art institutions. This signal can break us away from solely anthropocentric approach and change the way the institutions are governed (including more-than-human perspective, serving the whole ecosystem to thrive), how they create their programmes (opening up to different strategies that are mind-shifting, more imaginative, relying on different senses, etc).

## 4. Creating Scenario Frameworks

The final stage involved combining and synthesising the previous elements to create four distinct but plausible scenarios for the futures of museums and art institutions.

This methodical approach ensured that the resulting scenarios were:

- Grounded in emerging trends and weak signals;
- Comprehensive in their consideration of different factors;
- Internally consistent;
- Sufficiently distinct from each other;
- Useful for strategic planning;
- Comparable in terms of probability and preferability.

The four scenarios that emerged from this process - Trust Without Boundaries, Tokens and the Art of Common Resources, Symbiotic Museums, Totemic Democracy and Neutrality, and Digital Abundance - represent different possible futures for museums and art institutions. Each scenario explores unique combinations of technological, social, and organisational changes, while considering their implications for cultural institutions' roles, operations, and relationships with their communities.

These scenarios are not intended as predictions but rather as tools for exploring possible futures and their implications. They serve as frameworks for understanding potential challenges and opportunities, and for developing strategic responses to different possible futures.

In the following sections, we present detailed descriptions of each scenario, followed by analyses of their specific challenges and potential solutions.



## Scenario 1. Trust Without Boundaries. Tokens and the Art of Common Resources

- Museums and art institutions remain financially and organisationally dependent on public authorities. However, these are not the same institutions we knew in 2024. A common pool of public museum and artistic resources has been created, encompassing fixed and movable assets, buildings, material and human resources, machines, vehicles, licenses, rights, collections, and warehouses.
- Instead of legally separate and autonomous institutions located in buildings, we now have various 'homeless brands' and the visions and missions behind them. Each precisely defines its goals and methods of implementation, and the role that a given 'brand' is to play in the entire system. They resemble strategies that have not been anchored in fixed material and spatial frameworks. They are developed by citizens' panels in specially designed participatory processes. The citizens' panels include individuals who have achieved an appropriate level of trust in the scoring system (social scoring) created for artistic communities.
- Competitions for institution directors have been replaced by drawings of program proposals for six months, one year, or three years. Many representatives of the artistic community are pleased that this has eliminated the hierarchical way of managing institutions, the pathologies of the old system where the director exercised sole rule, cronyism, and nepotism. Those who have the appropriate number of trust tokens have virtually unlimited access to the program drawing system for each 'brand'.
- Trust tokens are awarded for each completed project, artwork, production, publication, program, exhibition, performance, or even social media discussion about culture, depending on the prestige and significance of the context. Entering the circle of the most trusted allows participation in program drawings for individual 'brands' and participation in citizens' panels.
- Each proposal is evaluated by AI judges for compliance with strategy. This is a fully automated process, independent of human influence, including public authorities. Based on the drawn program proposals that meet strategic criteria, artificial intelligence also determines the optimal budget, required resources available in the pool (established in relation to other programs to maintain system homeostasis), schedule of individual activities, required employee coverage, etc. Humans are not involved in optimisation processes.

- Instead of a contract previously signed with a director, there is a blockchain smart contract system defining mutual obligations between the AI system manager and the person proposing the program - superintendent, curator, programmer, artist, leader - where mutual obligations are fully automated. Meeting specific conditions automatically 'triggers' appropriate code actions.
- This has completely eliminated both soft and hard forms of censorship and influences from authorities at various levels. Artistic programs are finally free from the influence of politicians and officials. Hence the relatively high percentage of 'brands' and programs proposed within them that are socially and politically engaged and focus on influencing reality.
- A similar system of isonomy and voting operates at various territorial and organisational levels: local, national, regional, and European, allowing specialists in art and culture to move smoothly between them.
- In this system, humans are responsible for program concepts, creativity, relationship building, and imagination. Other functions - managerial and administrative - from managing director, through head of administration, culture managers, coordinators, to accounting - have been taken over by automated artificial intelligence systems.
- Thanks to excellent energy efficiency analyses performed by AI agents and the application of optimal technological and material solutions (e.g. CO<sub>2</sub>-absorbing materials), the carbon footprint of the culture and art ecosystem has been reduced to zero, and in some cases - thanks to the use of sustainable and regenerative practices and technologies - even 'negative emissions' have been achieved.
- The system has local platforms for digital collections, stored in nearby data centers and accessible only locally in certain physical spaces. Physical proximity is required to access them.
- Blockchain is widely used to establish the provenance and ownership of artworks, ensuring transparency and counteracting forgeries. This technology also facilitates secure and efficient transactions, building trust in the art market.





## Scenario 2. Symbiotic Museums

- Thanks to artificial intelligence, humans have managed to open up to the intelligence of other beings. As a result, museums began to be co-managed in a more-than-human paradigm. Both machines (AI systems) and 'nature' itself - animals, plants, and fungi - play an important role in decision-making processes in museums and art institutions. The development of brain-computer-ecosystem-interface technology has enabled the creation of communication tools connecting all entities. They transmit human thoughts in the form of neural signals translated into the languages of other species and beings. Neural networks have also learned to decode communication systems of other beings and can translate them into symbols understandable to humans. Unfortunately, this technology is sometimes inaccurate, requiring great tolerance for errors and glitches, and explanation of unclear messages flowing from both sides.
- One consequence of this process is that museums are now able to present art created by both humans and non-human creators, such as animals, plants, or AI systems.
- Museum buildings have become spaces where art, science, and nature intertwine. They were designed in collaboration with non-human entities and with sustainability in mind. Green walls, rooftop gardens, and innovative technologies minimise the carbon footprint while creating a comfortable environment for all species. The museum is not only an example of sustainable architecture but also a living exhibition showing the possibilities of regenerative design.
- The museum contains experimental ecosystems and habitats where research is conducted and new forms of symbiosis are designed. The cultivation of radiotrophic fungi eliminating radioactive isotopes from the environment, plants cooperating with microorganisms to clean soil of toxins, or bio-intelligent insects communicating with plants are just a few examples. Entangled infrastructures are created, allowing different species to support and collaborate with each other in the face of polycrisis, creating conditions for adaptation to new challenges.
- In these carefully designed spaces, every form of existence is a priority. They seek a delicate balance between the needs and goals of all parties. However, communication does not mean - at least for now - shared consciousness. Occasionally, the 'living' elements of the building may develop excessively and too expansively. Such an incident occurred in recent years. It affected both human and non-human employees. This led to some human employees

expressing concerns about the need to protect human rights in this unique environment, resulting in the formation of a small labor union for human workers.

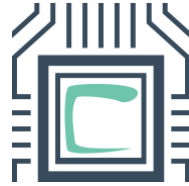
- Museums operate in a global network of interconnected institutions, facilitating the exchange of resources, knowledge, and artworks. Physical travel is still valued for direct interactions and cultural exchange, but digital platforms enable worldwide collaboration and knowledge sharing.
- Museums allow visitors to actively shape their experiences. In a world full of uncertainty and political and military threats, a sense of agency becomes even more important. Visitors define their own themes, needs, and desired levels of emotional engagement. An AI curator then creates an immersive exhibition adapted to these specific parameters, confronting the visitor's expectations with a carefully selected collection of ideas from both human and non-human worlds. Such personalised exhibitions can be experienced through VR technology, both at home and in museums.
- Museum spaces focus primarily on multisensory experiences. Visitors can explore exhibitions through sound, touch, smell, and even taste. This experience is enhanced at the cellular level, thanks to new discoveries in biotechnology and biometric solutions used in museums. Biometric data is used to personalise visitor experiences and collect information about audience engagement. Unfortunately, a recent data leak caused a decrease in visitor numbers, highlighting the need to improve cyber-bio-security measures to maintain trust.



## Scenario 3. Totemic Democracy and Neutrality

- In 2050, museums and art institutions operate in two independent systems. They surprisingly combine two seemingly distant - and even opposing - tendencies: the postulate of museum neutrality and radical social fragmentation, resulting in the creation of new identity institutions focused on specific social bubbles. As bubbles divide and multiply, more institutions emerge each year.
- The first system - official - remains financially and organisationally dependent on public authorities. The second - independent - operates in various organisational formulas, often based on cooperative, non-hierarchical, and democratic models, which however serve narrow identity groups. They constitute institutions that are both radically democratic and totemic.
- Both systems are doing well financially. The first receives high subsidies from public authorities, the second finances its activities through crowdfunding, obtaining funds from its supporters and dedicated audience.
- In 2050, Poland is a liberal democracy and a state of law. At the same time, there exist many more or less authoritarian enclaves that maintain the appearance of being friendly, democratic, and inclusive. One could say that liberal democracy and authoritarianism intertwine into a new democratic identity – gentle, friendly, rooted in comfort and a sense of well-being.
- The armed conflict that ended 20 years ago and encompassed much of Europe, the Middle East and North Africa region, and Central Asia became such a great collective trauma that society created a whole range of defense mechanisms to ensure a sense of security. Museums and art institutions enjoy relative freedom of operation and program creation, as long as they don't present content considered excessively controversial, such as those that don't respect someone's sensitivity, emotions, and experiences, and violate the principle of neutrality, comfort, and safety, or are considered too traumatic (defined by a catalog of norms and standards).
- Critics of this system, who remember the 2020s and 2030s – old union activists – formulate their accusations from the institutional underground. One union leaflet stated: "Program choices are dictated by the ideological priorities of authorities. Decisions made in museums and art institutions remain largely centralised and hierarchical, perpetuating traditional power structures and limiting broad participation in shaping the direction of these organizations."

- Anti-discrimination policies are becoming increasingly elaborate, neutrality is presented in them as inclusivity, and ethics officers employed in each institution oversee impartiality.
- Ethics officers in museums appeared in response to the need for modern cultural institutions to create an apparently neutral and safe space for all visitors, especially in times of increasing political and social tensions. In theory, their mission is to maintain ethical standards, neutrality, and inclusivity in programming.
- However, interesting transformations characteristic of the post-war period occurred in the independent circuit of institutions. These institutions' resources and means allowed them to redefine their social, political, and cultural role. Some museums serve as shelters for specific groups, conduct social mediations, or investigative activities.
- Most totemic identity institutions have also become laboratories for new forms of democracy. One could say they are inclusive, but only within a given identity.
- Museums' approach to climate and environment also differs. Public museums of the official system simulate their commitment to sustainable development because their audience expects it. In reality, their emissions reduction is minimal. Meanwhile, totemic museums differ depending on the identity they represent – some focus on pro-climate artistic practices, others integrate them with broader activist activities, while others fight for the right to burn fossil fuels.
- Interestingly, both systems share human and non-human cooperation in management and decision-making processes. They create "centaurs" based on each side's strengths. Independent identity museums purposefully create biased databases and AI models that are emanations of their values and principles. In contrast, public museums create models considered neutral, objective, and inclusive. However, they don't generate certain words, images, narratives, or sounds. Allegedly due to principles of ethics and non-harm. The final decision, however, always belongs to humans.



## Scenario 4. Digital Abundance

- Museums still exist and enjoy great popularity, but they no longer exhibit their art collections in their own spaces. The public is less interested in artifacts and more in experiencing art mediated through new technologies.
- Museum buildings have ceased to serve traditional exhibition or educational roles. For an appropriately high fee, they can be rented as spaces for personal contemplation and interaction with art. People renting museums have the opportunity to borrow artworks for private exhibitions organised in rented halls, and even reserve museums as accommodation during travel.
- Museum collections are still stored in warehouses but are not publicly accessible. Both objects and historical buildings are carefully preserved and renovated, maintaining their historical character. Funds for this purpose come from renting spaces and exhibits.
- All museum collections have been digitised and made available online. VR/AR technology plays a key role in museum activities. Visitors can immerse themselves in the art world, becoming active participants in events rather than just passive observers. They can 'wander' into an artist's studio, 'touch' artworks, 'feel' the atmosphere of an era, 'talk' with avatars of artists or historical figures. They can also attend creative workshops in virtual reality.
- Museums also use advanced AI technologies, redefining the visitor experience, including the controversial practice of 'digital resurrection' of artists. By analysing genetic data, writings, and artworks, museums can recreate not only realistic replicas of artists in hologram form but also their unique patterns of thinking and behavior. Although this innovative form of exhibition provides unprecedented opportunities to interact with art and its creators, it also raises ethical concerns among visitors.
- Technology eliminates barriers and enables people with disabilities to fully participate in cultural life. AI adjusts the intensity of stimuli to individual user needs. Music has become a visual and tactile experience, and images can be 'heard'. Finally, the symbolists' postulate from the early 20th century - synesthesia - has been brought to life. A resurrected Kandinsky avatar lectures on the subject.
- Museums and art institutions, in their immaterial form of operation, constitute a common good, spaces accessible to everyone regardless of material or social situation. Admission is

free. However, there's one catch – art can be viewed for free thanks to built-in product advertisements. If someone doesn't want to watch ads, they must pay.

- Art has thus become a commodity and an element of popular culture. In this world, artists face new challenges related to copyright protection and control over their work. The digitisation and commodification of art in museums lead to new forms of exploitation, forcing artists to fight for their rights and fair compensation. Numerous copyright infringement cases have prompted artists' unions to organise protests and media campaigns. Their goal is to raise awareness and pressure museums and cultural institutions.
- Museums are no longer publicly funded and try to sustain themselves through advertising and space rental. However, maintaining and updating advanced technologies generate high costs. Museum curators are forced to compromise with corporate sponsors, introducing their products and ideas into museum experiences through product placement, promotional messages, or celebrating sponsor brands. Some of them loudly express concerns about the impact of this kind of cooperation on the objectivity and substantive value of presented content. Product placement also includes virtual experiences related to food and beverages, including alcohol.
- Although internet access is a right, not everyone can afford the latest devices needed to use VR/AR technology. This causes tensions and deepens social inequalities. As a result, virtual museums, though theoretically accessible to all, in practice remain beyond the reach of part of the population.
- International digital cooperation between cultural institutions is flourishing. Museums co-create digital exhibitions and projects with partners from around the world, combining diverse perspectives and digital artifacts.



## Challenges Identified in Each Scenario

During the workshop process, we identified a comprehensive set of challenges facing museums and art institutions across four distinct futures scenarios. These challenges emerged through careful analysis and collaborative discussion, revealing the complex landscape that cultural institutions may navigate in the coming decades. Each scenario presents unique combinations of organisational, technological, social, and ethical challenges that require thoughtful consideration and innovative solutions.

The challenges identified reflect both scenario-specific concerns and broader, recurring themes that transcend individual futures. They range from practical considerations about institutional operations and technological integration to fundamental questions about the role of museums in society, artistic autonomy, and cultural democratisation. Particularly noteworthy is how these challenges often intersect and influence each other, creating complex networks of interdependencies that demand holistic solutions.

Our analysis paid special attention to the varying levels of impact and feasibility associated with different challenges, acknowledging that some issues may be more immediately pressing or tractable than others. This approach allows for a more nuanced understanding of the priorities and potential intervention points for institutions planning for these possible futures.

### Scenario 1: Adaptive Art Ecosystems - Expanded Challenges

#### 1. Illusion of Management Democratisation

- Despite its seemingly horizontal structure, the token system creates new hierarchies and inequalities.
- Apparent democratisation masks actual centres of power.

#### 2. Tyranny of Mediocrity in Scoring System

- The system favours "safe" and predictable projects.
- Innovative and controversial proposals are systematically marginalised.

- Lack of space for artistic risk-taking and experimentation.

### **3. Elimination of Human Unpredictability**

- Loss of creative chaos and spontaneity in artistic processes.
- Excessive programmatic predictability resulting from algorithmic decisions.
- No room for intuitive curatorial decisions.

### **4. Excessive Centralisation of Algorithmic Power**

- Risk of artistic decision monopolisation by a single AI system.
- Lack of effective control mechanisms over algorithmic decisions.
- Problem of AI decision-making process transparency.

### **5. Hidden Curatorial Hierarchy**

- Ambiguous role and responsibility of content programmers.
- Diffusion of responsibility for programmatic decisions.
- Accountability issues for controversial curatorial decisions.

### **6. Human-AI Tensions**

- Artistic community resistance to algorithmic creative processes.
- Lack of trust in AI-made decisions.
- Difficulties in new system acceptance by traditional artistic communities.

### **7. Simulation of Decision Influence**

- Fictitious public consultations masking algorithmic decisions.
- Ritualisation of participatory processes without real impact.

### **8. Exclusion Through Scoring System**

- Creation of new forms of digital exclusion.
- Difficulties in obtaining first tokens by new participants.
- Problem of cultural capital inheritance in the token system.

### **9. Learning Systems Inadequacy**



- Challenge of AI adaptation to diverse cultural contexts.
- Problem of recognising and supporting unconventional forms of artistic expression.

#### 10. Expertise Devaluation

- Disappearance of traditional forms of expertise.
- Unequal access to the token system due to socio-economic factors.
- Challenge of preserving specialised knowledge in a democratised system.

## Scenario 2: Symbiotic Museums - Expanded Challenges

### 1. Resistance to Biological Integration

- Fear of incorporating living organisms into museum space.
- Problems with acceptance of unconventional exhibition forms.
- Concerns about collection safety in contact with living organisms.

### 2. Competency Chaos in Hybrid Management

- Difficulties in determining decision hierarchy between humans, AI, and nature.
- Unclear responsibility division in the complex museum ecosystem.
- Coordination problems between different agents.

### 3. Redefinition of Art Concept

- Challenge of categorising works created in human-nature-AI symbiosis.
- Problem of evaluating and assessing new artistic forms.
- Difficulties in maintaining traditional aesthetic criteria.

### 4. Transformation of Curator's Role

- Shift in curatorial paradigm in multi-species context.
- Need for new competencies combining biological and artistic knowledge.
- Challenge of mediating between different forms of intelligence.

### 5. Technological Inequalities

- Concentration of advanced solutions in wealthiest institutions.
- Problem of access to expensive bio-art technologies.
- Risk of widening gap between institutions.

#### 6. Traditional Heritage Protection

- Challenge of preserving classical art forms.
- Need to balance innovation with tradition protection.
- Problem of adapting traditional works to new context.

#### 7. Infrastructure Challenges

- Need to create comprehensive life support systems.
- Costs of maintaining complex ecosystems.
- Technical problems in integrating biological and technological systems.

## Scenario 3: Totemic Democracy and Neutrality - Expanded Challenges

### 1. Complexity of Collective Management

- Difficulties in achieving consensus between different identity groups.
- Problem of decision-making efficiency in collective model.
- Risk of decision paralysis with too many voices.

### 2. Problematic Role of Assemblies

- Unclear rules for representation of different groups in assemblies.
- Risk of domination by loudest groups.
- Problem of legitimising assembly decisions.

### 3. Participation Limitations

- Exclusion of some communities from decision-making processes.
- Problem of representativeness in small groups.
- Barriers to accessing participatory processes.

#### 4. Management Position Uncertainty

- Constant pressure from communities.
- Lack of programmatic stability.
- Long-term planning challenges.

#### 5. Scale Limitations

- Difficulties in implementing large projects.
- Problem of international competitiveness.
- Limitations in building broader cooperation networks.

#### 6. Financial Dependency

- Instability of community-based funding.
- Long-term budget planning challenges.
- Risk of subordinating program to sponsor expectations.

#### 7. Risk of Marketisation

- Pressure for commercialisation of activities.
- Problem of maintaining social mission.
- Conflict between values and financial needs.

#### 8. Institutional Paralysis

- Excessive bureaucratisation of decision-making processes.
- Problem of rapid response to changes.
- Difficulties in making controversial decisions.

#### 9. Self-censorship Problem

- Content limitation due to fear of community reaction.
- Avoidance of controversial topics.
- Standardisation of artistic message.

#### 10. Political Pressure

- Subtle forms of political influence.
- Problem of maintaining neutrality.
- Balancing between different interest groups.

#### 11. Ethical Dilemmas

- Unclear ethical standards.
- Conflict between different value systems.
- Problem of responsibility for ethical decisions.

#### 12. Limitation of Artistic Freedom

- Subordination of art to identity groups' expectations.
- Problem of maintaining artistic independence.
- Limitation of artistic experimentation.

## Scenario 4: Digital Abundance - Expanded Challenges

### 1. Corporate Influence

- Excessive sponsor interference in artistic content.
- Problem of maintaining programmatic independence.
- Risk of subordinating art to marketing objectives.

### 2. Alienation from Physical Art

- Loss of direct contact with artworks.
- Problem of artistic experience authenticity.
- Decline of traditional museum practices.

### 3. Commercialisation of Artistic Experience

- Transformation of art into entertainment product.
- Loss of educational values.
- Problem of high art accessibility.

#### 4. Digitisation Pressure on Artists

- Forced adaptation to digital formats.
- Limitation of artistic form diversity.
- Problem of preserving traditional techniques.

#### 5. Access Elitisation

- Limited access to physical museum spaces.
- Economic exclusion.
- Problem of art democratisation.

#### 6. Culture Marginalisation

- Decline of art's importance in social life.
- Problem of preserving cultural values.
- Risk of artistic message superficiality.

#### 7. Environmental Problems

- High carbon footprint of digital infrastructure.
- Energy costs of digitisation.
- Problem of sustainable development.

#### 8. Infrastructure Dependency

- Vulnerability to technical failures.
- Problem of continuous access.
- Risk of data loss.

#### 9. Technological Limitations

- Server capacity issues.
- Data storage costs.
- Risk of digital heritage loss.

## Conclusions

The extensive range of challenges identified during our workshop reveals several crucial insights about the futures of museums and art institutions:

### 1. Systemic Complexity

- The challenges form intricate webs of interconnected issues rather than isolated problems.
- Solutions in one area often have ripple effects across other aspects of institutional operations.
- The complexity requires careful consideration of both direct and indirect consequences of any interventions.

### 2. Recurring Themes Across Scenarios

- Despite the distinct nature of each scenario, certain fundamental challenges persist across different futures.
- These include:
  - Balancing accessibility with sustainability;
  - Maintaining artistic integrity while embracing technological innovation;
  - Reconciling institutional autonomy with community engagement;
  - Managing the tension between democratisation and expertise;
  - Addressing the physical-digital divide in cultural experiences.

### 3. Institutional Adaptation

- Museums will likely need to develop more flexible and adaptive organisational structures.
- The ability to respond to rapid technological and social changes will become crucial.
- Traditional institutional models may need significant reimagining.

### 4. Resource Allocation

- Financial sustainability emerges as a consistent concern across scenarios.
- Resource allocation between traditional and innovative programs requires careful consideration.
- New funding models may need to be developed to support evolving institutional roles.

### 5. Stakeholder Dynamics

- The relationship between institutions and their various stakeholders becomes increasingly complex.
- New forms of engagement and participation must be developed.
- Balancing different stakeholder interests presents a significant challenge.

### 6. Technological Integration

- Technology's role in museums extends beyond digital exhibitions and collections.
- Questions of access, preservation, and authenticity become increasingly important.
- The human element in technological implementation remains crucial.

## 7. Social Role and Responsibility

- Museums' role as social institutions may need to be redefined.
- Questions of representation, inclusion, and cultural authority become more pressing.
- The balance between cultural preservation and social innovation requires careful consideration.

## 8. Professional Evolution

- Traditional museum roles and expertise may need to be reconceptualised.
- New skills and competencies will be required.
- The relationship between human and artificial intelligence in museum work needs careful consideration.

Looking ahead, these challenges suggest that museums and art institutions will need to:

1. Develop more flexible and adaptive organisational models that can respond to rapidly changing circumstances;
2. Create innovative solutions that bridge traditional museum practices with new technological and social realities;
3. Build stronger networks and partnerships to share resources and expertise;
4. Invest in new competencies and capabilities while preserving core museum expertise;
5. Maintain their cultural mission while adapting to new social and economic realities.

The diversity and complexity of these challenges suggest that the futures of museums will likely be characterised by multiple coexisting models rather than a single dominant approach. Institutions will need to find their own balance between tradition and innovation, between physical and digital experiences, and between institutional authority and community engagement.

Success in addressing these challenges will require not only technical solutions and organisational changes but also a fundamental rethinking of what museums can and should be in the future. This may involve embracing new roles and responsibilities while ensuring that core cultural and educational missions remain central to institutional identity.

The work done in identifying and analysing these challenges provides a valuable foundation for cultural institutions as they begin to prepare for these possible futures. However, it should be noted that these challenges are not fixed or predetermined - they will continue to evolve as the context in which museums operate changes. Ongoing monitoring and adaptation of strategies will be essential for successful navigation of these future scenarios.



## Recommendations and Solutions for Museums and Art Institutions

Museums and art institutions are at a pivotal moment in history, facing a variety of challenges that stem from technological advancements, environmental shifts, and changes in societal values. These challenges are further compounded by the need to adapt to new models of collaboration, ensure sustainability, and engage diverse audiences in meaningful ways. The recommendations and solutions outlined in this report, developed during a workshop at the Museum of Modern Art (MOMA) in Warsaw, aim to address these issues by providing strategic actions that museums can take to navigate the futures. The solutions provided focus on four key scenarios, each with specific challenges and proposed responses that integrate technological innovations, ecological responsibility, and inclusivity into the futures of art institutions.

This report discusses the recommendations and solutions developed for four future scenarios: **Trust Without Boundaries**, **Tokens and the Art of Common Resources**, **Symbiotic Museums**, **Totemic Democracy and Neutrality**, and **Digital Abundance**. Each set of recommendations focuses on specific strategies for supporting artists, fostering collaboration, incorporating technology into artistic processes, and improving the accessibility and sustainability of museum practices. The proposed solutions are designed to help museums stay relevant and resilient as they adapt to changing cultural, environmental, and technological landscapes.

### Scenario 1: Trust Without Boundaries. Tokens and the Art of Common Resources

The **Trust Without Boundaries. Tokens and the Art of Common Resources** scenario envisions futures in which museums and art institutions embrace new modes of artistic collaboration, particularly in the context of AI-managed systems and collective creativity. The following solutions are proposed to help artists, curators and museum experts adapt to these changes and thrive in an increasingly collaborative and AI-driven environment.

#### Recommendations and Solutions:



## 1. Upskilling Programs

As museums and artists shift towards AI-managed systems, it is crucial to provide **training sessions** that support artists in adapting to new collaboration models. These sessions will enable artists to understand how to work alongside AI tools and systems, enhancing their ability to use these technologies in creative ways. By equipping artists with the necessary skills, they will be better prepared to embrace AI in their work, ensuring that technology becomes an aid, rather than a replacement, for human creativity.

## 2. Financial Incentives

To incentivise collaboration in team-based art projects, museums should implement **token bonuses** for group work. This approach ensures that collaborative efforts are financially rewarded, fostering a culture of shared responsibility in art creation. Additionally, **direct compensation for collective work efforts** should be introduced to reflect the value of group-based artistic processes, as these often require significant coordination and shared responsibilities.

## 3. Recognition Systems

A new **framework for recognising community engagement and team achievements** will be essential for rewarding collective efforts in art production. Rather than focusing solely on individual accomplishments, museums can develop systems that highlight the importance of collaboration, fostering a sense of community and shared purpose among artists, curators, and the public. This will encourage long-term investment in collective creative practices, which are becoming increasingly important in an AI-driven world.

## 4. Group Work Support

Facilitating **collective artistic projects** requires a systematic approach that supports teamwork. Museums should work to **form teams and implement systems of shared responsibility** that encourage collaboration among artists, curators, and technologists. Creating spaces that foster group work, providing access to collaborative tools, and offering support for interdisciplinary projects will allow for more dynamic, innovative art production.

## 5. Development of Educational Tools

Museums should also focus on **developing educational programs** that emphasize collective creativity and new artistic paradigms. These programs would focus on educating artists about the potential for collaboration with AI and other non-human agents, helping to develop new forms of art and cultural engagement that go beyond individual authorship. By offering training that explores these innovative approaches, museums can play a leading role in fostering the futures of collective and AI-driven art.

## Scenario 2: Symbiotic Museums

The **Symbiotic Museums** scenario presents futures in which museums incorporate biological elements and AI to create more interconnected, multi-species environments. These environments would promote new forms of art and inter-species collaboration, leading to a deeper understanding of our relationship with nature and technology.

### Recommendations and Solutions

#### 1. Inter-species Communication Systems

The implementation of **biological sensors** to interpret and translate signals from plants and animals into a language understandable to humans represents a revolutionary shift in how museums interact with the natural world. These systems will enable new forms of artistic expression, where the communication between humans and non-human species is integrated into exhibitions, opening up opportunities for more inclusive, ecological art forms.

#### 2. Integration of Biological Elements

Museums can integrate **living walls and gardens** within their physical spaces, creating environments that actively support life. The infrastructure to sustain these organisms will be critical, ensuring that biological elements are not just aesthetic features, but functional parts of the ecosystem. This approach not only promotes biodiversity but also encourages a deeper connection between visitors and the natural world, inviting new forms of creative engagement.

#### 3. Advanced Symbiotic Systems

**AI platforms for inter-species translations** will be essential in translating and interpreting the communication between different species and humans. These systems will enable the development of more complex, multi-species collaborations, making museums spaces where art is co-created by humans, animals, and plants. Furthermore, **biological computers** that integrate biological processes with technological systems will be key to creating more responsive, sustainable museum environments that adapt to the needs of both human and non-human participants.

#### 4. Evolutionary Curatorial Systems

Museums will move towards **evolutionary curatorial systems**, where exhibitions are co-created by AI, humans, and other organisms in dynamic, interactive spaces. These exhibitions will not be static but will evolve in response to visitor interactions, environmental changes, and the participation of non-human agents. This approach encourages a deeper engagement with the creative process, allowing visitors to witness the evolving relationship between technology, nature, and art.

## 5. Inter-species Management Systems

The **formation of decision-making teams** that incorporate signals from non-human participants will ensure that museums move beyond anthropocentric models of governance. By integrating biological input into decision-making processes, museums can create more inclusive, holistic environments where the needs and perspectives of both humans and non-humans are considered. This approach will help foster a more ethical, responsible relationship with nature, supporting futures in which museums serve as custodians of both culture and the environment.

### Scenario 3: Totemic Democracy and Neutrality

The **Totemic Democracy and Neutrality** scenario emphasises the fragmentation of society into identity-based groups and the challenge of maintaining neutral spaces for dialogue. Museums must adapt by fostering spaces for conversation and ensuring that their programs are inclusive and diverse.

#### Recommendations and Solutions:

##### 1. Intergroup Forum

Museums should create **spaces for meetings and dialogue**, enabling the confrontation of diverse perspectives within public institutions. These forums will allow for open discussion on social issues and encourage dialogue between different identity groups, fostering understanding and collaboration across societal divides.

##### 2. "Bubble-Bursting" Mechanism

To counteract social fragmentation, museums can implement processes that **connect various identity groups**, creating opportunities for cross-group interaction. This mechanism will actively seek to break down the social bubbles that prevent meaningful dialogue and understanding, making museums sites of social cohesion and integration.

##### 3. Moderator as Neutral Mediator

Introducing a **moderator as an independent intermediary** will help facilitate balanced, impartial discussions within museums. The role of the moderator is crucial in maintaining neutrality and ensuring that all voices are heard, particularly in the context of sensitive social or political topics.

## 4. Random Selection of Participants

A **lottery mechanism** for the impartial selection of institutions or individuals to participate in dialogues will help ensure fairness in the process. This approach will encourage a diverse range of participants, preventing the domination of discussions by any one group.

## 5. Supporting Structures

**Creating alliances between institutions and networks** for cross-sectoral collaboration will enable museums to support broader societal initiatives. These collaborations will allow museums to play an active role in addressing societal challenges, including climate change, inequality, and political polarisation.

## Scenario 4: Digital Abundance

The **Digital Abundance** scenario envisions futures in which museums and art institutions are fully integrated into the digital landscape. Museums will use technology to enhance visitor experiences, ensure transparency, and preserve artistic heritage.

## Recommendations and Solutions

### 1. Blockchain for Transparency

**Blockchain technology** should be utilised to ensure transparency in the provenance of artworks and transactions. This technology will reduce the risk of forgery and misattribution, providing a secure and reliable record of the ownership and history of artworks, which is crucial for maintaining trust in the art market.

### 2. Eco-Friendly Data Centers

To promote sustainability, museums should transition to **eco-friendly data centers** that utilise renewable energy sources. This will help reduce the environmental impact of digital infrastructure and support museums' commitment to sustainability.

### 3. Visitor Experience Personalization

**AI analysing visitor preferences** to create personalised touring routes will transform how visitors engage with museum collections. Personalised experiences will enhance visitor satisfaction and allow for more meaningful interactions with exhibitions, tailored to individual interests and needs.

## 4. Digital Resurrection of Artists

Using **genetic data and creative outputs** to reconstruct the thoughts and behaviors of historical artists will provide a new form of engagement with the past. By digitally resurrecting artists, museums can offer visitors a more immersive and educational experience that connects the historical and contemporary worlds.

## 5. Inclusive Technologies

Finally, museums should prioritise **inclusive technologies** that customise sensory experiences to accommodate individuals with disabilities. By offering tailored experiences that enhance accessibility, museums can ensure that all visitors, regardless of ability, can fully engage with and appreciate the art on display.

## Conclusion

The recommendations and solutions presented in this report offer a comprehensive and forward-thinking framework for the transformation of museums and art institutions in response to the rapidly evolving technological, ecological, and social landscapes. As we look toward the future, museums must evolve beyond their traditional roles as passive repositories of culture to become active, dynamic spaces of innovation, dialogue, and inclusivity. The scenarios explored in this report highlight critical paths forward, focusing on how museums can adapt to the integration of artificial intelligence, collaborative work, inter-species communication, and digital advancements.

The proposed solutions address both practical and philosophical shifts in the way museums operate, interact with their audiences, and contribute to broader societal change. By embracing AI-managed systems, museums can foster more collaborative art-making practices and support the development of creative ecosystems that value collective efforts over individual achievement. This shift towards collective creativity, reinforced by financial incentives and recognition systems, will create an environment where artists can thrive in partnership with new technologies. The recommendations for **Upskilling Programs, Financial Incentives, and Group Work Support** lay the foundation for a more inclusive and supportive art ecosystem, where both human and non-human agents collaborate seamlessly to produce innovative and transformative works of art.

At the same time, the **Symbiotic Museums** scenario encourages museums to rethink their physical spaces as living, breathing entities, where art is co-created not only by humans but also by plants, animals, and AI systems. This integration of biological and technological elements into the fabric of museum spaces opens up exciting possibilities for creating dynamic, evolving exhibitions that are responsive to the interactions between different species and technologies. The introduction of **Inter-species Communication Systems** and **Advanced Symbiotic Systems** will enable museums to transcend their anthropocentric models, allowing for a more holistic and equitable approach to artistic expression and curation.

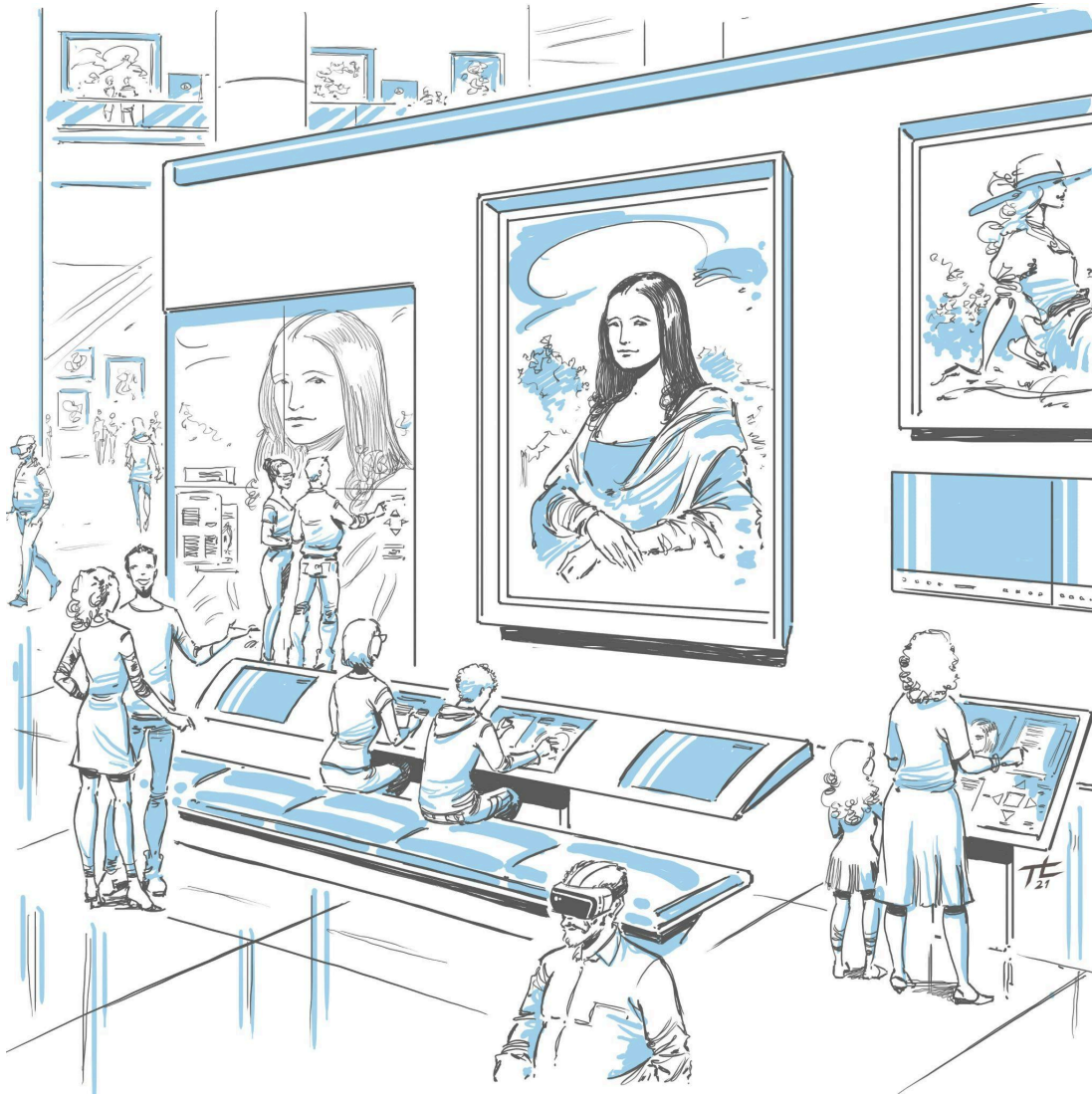


The **Totemic Democracy and Neutrality** scenario emphasises the importance of museums as spaces for dialogue, particularly in a time of growing social fragmentation and political polarisation. By creating **Intergroup Forums** and implementing "**Bubble-Bursting**" **Mechanisms**, museums can provide platforms for diverse perspectives to be heard and addressed. The role of the **Neutral Mediator** and the use of **Random Selection of Participants** ensure that these forums are inclusive and impartial, fostering a sense of shared responsibility and understanding among disparate social groups. These solutions position museums as critical actors in facilitating social cohesion, encouraging meaningful dialogue that can bridge societal divides.

Finally, the **Digital Abundance** scenario offers a vision of museums as fully integrated into the digital landscape, where **Blockchain** technology ensures transparency in the provenance of artworks, **Eco-Friendly Data Centers** support sustainability, and **AI Personalisation** tailors the visitor experience to individual preferences. The use of **Digital Resurrection of Artists** and **Inclusive Technologies** ensures that museums remain accessible and relevant to all audiences, offering transformative experiences that connect the past with the present while ensuring that all visitors, regardless of ability, can engage with art in meaningful ways.

Together, these recommendations and solutions reflect a shift in how museums can function in the future. They move beyond the notion of museums as static institutions focused on preservation, to embrace a more dynamic, interconnected, and socially responsible role in society. The future of museums lies in their ability to adapt to new technological realities, while maintaining their core values of inclusivity, creativity, and cultural preservation. By implementing these strategies, museums can foster more sustainable, equitable, and engaging futures for both artists and audiences alike.

The integration of AI, inter-species communication, collaborative work models, and digital innovations will not only redefine the museum experience but also contribute to a more interconnected world where technology, nature, and society coexist in creative harmony. As museums navigate this transformation, their role as cultural beacons will become even more significant—shaping not only the future of art but also the future of society itself. The solutions outlined in this report provide a vital roadmap for museums to embrace the challenges of the coming decades and ensure that they remain spaces of innovation, inclusivity, and relevance in an ever-changing world.



## Beyond Institutional Horizons: A Speculative Afterword

Perhaps the most striking revelation emerging from this research is not what it tells us about museums and art institutions, but what it reveals about our collective inability to imagine truly radical futures. Even our most adventurous scenarios remain tethered to recognisable institutional forms and familiar cultural paradigms. This limitation suggests that we might be standing at the threshold of changes more fundamental than our current conceptual frameworks allow us to grasp.

Consider, for instance, the possibility that by 2050, the very notion of a "cultural institution" might become obsolete – not because culture will cease to matter, but because the institutional paradigm itself might no longer serve as the primary vehicle for cultural expression and preservation. We might be witnessing the early signs of this transformation in the emergence of ephemeral cultural formations, temporary autonomous zones of artistic expression, and distributed networks of cultural production that resist institutionalisation.

The scenarios we've explored might thus be better understood not as endpoints, but as transitional stages in a more profound transformation of how society organises its cultural memory and creative expression. This transformation might be driven by several emerging phenomena that our current institutional imagination struggles to fully comprehend:

1. **Post-Anthropocentric Cultural Production.** The integration of non-human agents in cultural institutions might be just the first step toward a fundamentally different understanding of culture itself – one that recognises creative expression as a property of complex systems rather than exclusively human activity. Future "museums" might function more like ecological observatories, documenting and facilitating the emergence of new forms of expression arising from the interaction between biological, technological, and social systems.
2. **Militant Cultural Formations.** As political tensions intensify globally, cultural institutions might evolve into explicitly political entities, moving beyond mere commentary or critique to become active sites of resistance and social transformation. These formations might operate as hybrid organizations combining characteristics of art spaces, activist collectives, and tactical media operations. Rather than maintaining traditional neutrality, they might embrace their role as catalysts for radical social change, developing new forms of institutional practice that blur the lines between artistic expression and political action.
3. **Biocultural Synthesis.** The distinction between cultural and biological evolution might become increasingly blurred as advances in biotechnology enable the encoding of cultural information directly into living systems. Future cultural institutions might need to grapple with art forms that exist as living organisms, exhibitions that evolve and mutate, and collections that quite literally grow.
4. **Counter-Institutional Networks.** In response to increasing state control and corporate influence over traditional cultural institutions, we might see the emergence of decentralised, autonomous cultural networks operating outside conventional institutional frameworks. These networks might develop their own alternative economies, governance systems, and modes of cultural production, effectively creating parallel cultural infrastructures that challenge dominant power structures. They might operate through encrypted communications, utilise blockchain technology for resource distribution, and develop new forms of collective decision-making that resist co-optation by existing political and economic systems.

These speculative horizons suggest that the real challenge facing cultural institutions might not be adapting to new technologies or social conditions, but fundamentally reimagining what it means to





be an institution in an era where traditional boundaries – between human and machine, nature and culture, art and activism – are becoming increasingly fluid.

The emergence of what we might call "post-institutional cultural formations" could take forms we can barely imagine today: militant art collectives that operate across both physical and digital domains, biodigital ecosystems that generate and preserve cultural expressions as emergent properties, underground networks of cultural resistance that develop their own alternative institutions, or cultural movements that explicitly challenge the very foundations of institutional power.

This suggests that the most important capability for current cultural institutions might not be adapting to predicted futures, but developing the capacity for radical openness to unprecedented forms of cultural organization and expression. The true value of future research in this context lies not in its predictive power but in its ability to stretch our institutional imagination beyond current paradigms.

Perhaps the most profound insight from this research is that the future of cultural institutions might not lie in institutions at all, but in entirely new forms of cultural organization that we are only beginning to glimpse. The scenarios we've explored might be less important for what they predict than for what they reveal about the limitations of our current institutional imagination.

As we move forward, the key challenge might not be preserving or adapting institutions, but nurturing the emergence of new forms of cultural organization that can respond to the unprecedented challenges and opportunities of the mid-21st century and beyond. This might require us to hold our current institutional models more lightly, seeing them not as permanent structures to be preserved, but as temporary scaffolding for the emergence of new forms of cultural life that we can barely imagine today.

In this light, the true value of this research might lie not in its scenarios or predictions, but in its role as a catalyst for institutional imagination – helping us begin to think beyond the horizons of our current understanding of what cultural institutions can be. The future of museums and art institutions might not look anything like museums or institutions as we know them today, and that might be precisely what makes the future so full of possibility.



## Annex 1. The Full List of Uncertainties (Questions to the Person from The Future)

1. Do art museums exist?
2. Are there material collections (sculptures, paintings) in museums in 2050?
3. In 2050, will Poland have what is described today as the rule of law and liberal democracy?
4. Have AI and virtual reality become standard tools for curating art exhibitions in museums?
5. Do you have to be physically present in a museum to fully experience its program?
6. Do museums present artworks created by people?
7. Are there publicly funded art museums and institutions in Poland in 2025?
8. Have museums and cultural institutions become more financially and managerially independent from the state?
9. Are museums presenting art in 2050?
10. Are museums important institutions in 2025?
11. Is AI common in curatorial practice in 2025?
12. Are museums in 2050 primarily funded by public entities?
13. Is nature included as an equal partner in decision-making?
14. Are people afraid to leave their home ecosystems in 2050?
15. In 2050, is the consumer market a decisive factor in the development and operation of institutions/museums?
16. Are museums and art institutions still run hierarchically, by directors and curators?
17. Can artworks be communicated telepathically?
18. Are museums in 2050 responsible for collecting and protecting the natural and cultural heritage of humanity?
19. Will the climate goals assumed today be achieved in 2050?
20. Have museums in 2050 successfully reduced their carbon footprint to near-zero through sustainable practices?
21. Is there a committee for ethics of presented projects in museums?
22. Are museums popular?
23. Will Polish museums and institutions host exhibitions in 2050?
24. Has artificial intelligence become the primary creator of modern art and museum exhibitions by 2050?
25. Will people visit museums in 2050 to see art?
26. Have museums contributed to social change?

27. Are museums expanded into virtual space?
28. Is the physical attendance of museums still significant in 2050 compared to virtual participation?
29. Do museums have directors (are governed as top-down institutions)?
30. Do people still prefer face-to-face contact in 2050?
31. In 2050, are institutions/museums organizationally and financially subject to public authority?
32. Is there still a division between artists and audience?
33. Do you still acquire artworks for public collections?
34. Are museums in 2050 designed for entertainment?
35. Will new communication technologies replace the need to receive art in person?
36. Do art museums still attract large numbers of visitors, despite the rise of digital experiences?
37. Do museums support people in their sensory development?
38. Do art museums only operate in virtual form?
39. Do museums and art institutions still develop, sustain, and present collections of artworks in Poland in 2050?
40. Are physical, traditional artworks still valued more than their digital counterparts in 2050?
41. Are museums relevant for society in 2050?
42. Are museums run democratically?
43. Is the audience interested in visual art in 2050?
44. By 2050, do most museums have global, shared platforms for digital collections?
45. Is AI co-curating the shows and programming?
46. Are there any public institutions still existing in 2050?
47. Do political changes of an authoritarian nature affect the agenda and selection of topics dealt with by institutions/museums in 2050?
48. Have museums changed their approach to non-humans?
49. Do you exhibit non-human works?
50. Are museums in 2050 socially engaged?
51. Will Poland be a country of old people?
52. Have most museums in 2050 eliminated admission fees, making entry free for all visitors?
53. Do museums adapt to other purposes, e.g., shelters?
54. Are museums managed by AI?
55. Do art museums and institutions employ artists in Poland in 2050?
56. By 2050, has the equality agenda led to women and minorities representing at least 50% of the leadership in cultural institutions?
57. Are museums managed by artists in 2050?
58. Are museums' employees paid fairly?
59. Do you work with a division into local and global?
60. By 2050, is artificial intelligence creating more artworks than humans?
61. Are art institutions divided into departments (is art categorised)?
62. Have travel distance limits or travel bans been introduced before 2050?
63. Do progressive institutions/museums, pursuing their agenda in opposition to the dominant narratives, remain in a hostile relationship with the audience?

64. Are major art institutions still in the biggest cities?
65. Do museums play a significant role in fighting climate change?
66. Are museums in 2050 politically engaged?
67. Will global armed conflict erupt by 2050?
68. Have curators shifted away from traditional art history backgrounds toward interdisciplinary curation processes?
69. Are museums a safe, healthy place?
70. Are museum collections safe, e.g., due to climate?
71. Do art museums and institutions in Poland in 2050 still perform the same social, political, and cultural function as they have in 2024?
72. Has VR and AR technology allowed people to fully experience museum exhibitions from home, without needing to visit the physical museum?
73. Are museums managed by AI in 2050?
74. Are there any objects in museums that relate to the climate crisis?
75. Are museums a common good or an exclusive commodity?
76. Are most new museum buildings in 2050 designed to be entirely energy self-sufficient?
77. Are art institutions visited by people outside their bubble (outside of the art and culture background)?
78. Do people use smart glasses in everyday communication?
79. Do progressive institutions/museums function on an autonomous basis?
80. Are traditional, non-digital art media relevant?



## Annex 2. Clusters of Uncertainties and Hypothesis About Futures

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
1	Relationship between museum programmes and non-artistic reality	Museums and art institutions operate according to the idea of the autonomy of art, focused on aesthetic issues, traditional values and the declared universal qualities of art. They do not seek to relate to external reality.	Museums and art institutions are activist places, socio-politically engaged and focused on influencing a change in reality.	Museums and art institutions are for entertainment. It is with this in mind that their programmes are designed. They do not comment on reality, nor do they wish to influence it.				<p>Are museums in 2050 designed for entertainment?</p> <p>Are museums in 2050 socially engaged?</p> <p>Are museums in 2050 politically engaged?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
2	e Spaces for the reception of art	Museums and art institutions challenge the division between the physical and material and the virtual. They are experimenting with various hybrid forms, augmented reality exhibitions, and transmedia exhibitions taking place and bifurcating both in the metaverse or virtual space and in physical reality.	Some museums and art institutions have abandoned the creation of physical exhibitions and the personal presence of the public in their buildings is not their goal. The vast majority of their activities are available in a virtual space, easy to access without leaving home, thanks to advanced VR systems.	Museums and art institutions are places that are only visited in person. Without physical presence, it is impossible to enjoy their programme.				<p>Can artworks be communicated telepathically?</p> <p>Is the physical attendance of museums still significant in 2050 compared to virtual participation?</p> <p>Will new communication technologies replace the need to receive art in person?</p> <p>Do you have to be physically present in a museum to fully experience its program?</p> <p>Do art museums only operate in virtual form?</p> <p>Has VR and AR technology allowed people to fully experience museum exhibitions from home, without needing to visit the physical museum?</p> <p>Is the physical attendance of museums still significant in 2050 compared to virtual participation?</p> <p>Are museums expanded into virtual space?</p> <p>Do people use smartglasses in everyday communication?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
3	L The role of non-human agents in museum management	Artificial intelligence has replaced humans in most museum management functions.	Museums are co-managed in a more-than-human paradigm. Not only machines (AI systems), but also nature itself, i.e. animals and plants, have a significant role in the management and decision-making processes in museums and art institutions.	Museums are anthropocentric and managed solely by humans without any support from artificial intelligence nor involvement of nature or ecosystems into decision-making or strategic processes.	Humans and non-humans work together within the management and decision-making processes of museums and art institutions, creating centaurs based on the strengths of each side. Humans, however, make the final decision.			<p>Are museums managed and co-created in a more-than-human paradigm including animals, plants, fungi, both as non-human member persons of the institution and as redefined audiences?</p> <p>Is nature included as an equal partner for decision making?</p> <p>Are museums managed by AI?</p>
4	t Curatorial collaboration with artificial intelligence		In most museums, it is mainly artificial intelligence systems that are responsible for curatorial work.	Humans create all exhibitions and programmes in museums and art institutions solely without any support from artificial intelligence.				<p>Are there curatorial centaurs (collectives of humans and artificial intelligence) in museums working on programming, exhibitions or education?</p> <p>Have AI and virtual reality become standard tools for curating art exhibitions in museums?</p> <p>Is an AI system common in curatorial practice in 2025?</p> <p>Is AI co-curating the shows and programming?</p> <p>Has artificial intelligence become the primary creator of modern art and museum exhibitions by 2050?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
7	e Carbon intensity and the role in the fight against climate change	Museums have implemented various sustainable practices and technologies to transform their buildings into energy self-sufficient ones. Success has been partial. In many ways, the resistance of people, technology and economics was too great. There has been some success in reducing the carbon footprint of the institutions, but it is difficult to call this result significant.	Museums and art institutions have reduced their carbon footprint to zero, and in some cases managed to achieve a "negative emission", making an important contribution to the fight against climate collapse. This is by using sustainable and regenerative practices and technologies.	Museums and art institutions are carbon-intensive, making a significant contribution to the exacerbation and acceleration of climate change.	Museums simulate their commitment to sustainable and regenerative practices and climate action. They do this because their audiences want to hear it. In fact, however, the emissions reduction is small, at a few percent.	Communities felt fatigue with the green transition, regulations, coercion, forced sacrifices, one-sided messages and a failure to communicate the ambivalence of green technologies, so an anti-green backlash occurred. Art institutions as sophisticated in social critique, sensing the conjuncture and supporting new forms of resistance to power, supported the anti-green movement. To be credible, they decided to abandon all infrastructure and modernisation projects related to ecology and renewable energy.	Museums are showcasing work on climate change, but their institutional practice is still high-carbon.	<p>Do museums play a significant role in fighting climate change?</p> <p>Have museums in 2050 successfully reduced their carbon footprint to near-zero through sustainable practices?</p> <p>Are most new museum buildings in 2050 designed to be entirely energy self-sufficient?</p> <p>Are there any objects in museums that relate to the climate crisis?</p>



No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
8	s Changing social, political and cultural function of museums and art institutions		There has been a significant change in the social, political and cultural role and function played by museums and art institutions. They have, for example, begun to fulfil tasks such as being a shelter, conducting social mediation processes or investigative and forensic activities.	Museums and art institutions have returned to their original and primary function of collecting and exhibiting.	Museums no longer organise exhibitions.	Museums occasionally organise exhibitions, but other public programme area tasks have become much more important to them.		<p>Do museums adapt to other purposes, e.g. shelters?</p> <p>Are museums a site of investigative and forensic activity focused on abuses of power and usually carried out autonomically, independently of state institutions?</p> <p>Have museums become a venue for community mediation?</p> <p>Do art museums and institutions in Poland in 2050 still perform the same social, political and cultural function as they have in 2024?</p> <p>Will Polish museums and institutions host exhibitions in 2050?</p>
9	s Relationship with audience and a level of socio-institutional fragmentation		Museums represent narrow identity, social and ideological groups and their programme is aimed at them. Every bubble has its own museum.	Museums are places of commonality (of experience, of knowledge, of languages...), radically inclusive spaces based on the common. Identity issues are not a differentiating factor in them, as they are not addressed in any way.				<p>Are art institutions visited by people outside their bubble (outside the art and culture background)?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
10	s The dominant age group in Poland	Poland is a country of old people, but it has not adapted to their needs.	Poland is mainly a country of seniors. Their needs have been subordinated to public institutions, services, infrastructure and the economy, which has become predominantly a silver economy.	Poland is young and paidocratic. Children and youth are the dominant social group. They are the ones who primarily influence social life and public debate. Their needs have been subordinated to public institutions, services, infrastructure and an economy called the paidoeconomy.	Poland is an age-balanced country.	Poland is a country of young migrants and old Polish society.		Will Poland be a country of old people?
11	s Sensorial experiences development		Museums are places primarily focused on multisensory experience, extending the field of our experience of the world to include both synthetically created impressions and those associated with real physical phenomena.	Museums are radically abstract, intellectual and theoretical in nature.				Do museums support people in their sensory development?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
12	s Existence and role of public collections		The role of collection building in museums and art institutions has grown into an absolute priority, the most important task, both in terms of collecting artworks and preserving the natural and the cultural heritage of humanity.	Collections play no role in the activities of museums and art institutions. Most of them have abandoned them.				<p>Do you still acquire artworks for public collections?</p> <p>Are there material collections (sculptures, paintings) in museums in 2050?</p> <p>Are museums in 2050 responsible for collecting and protecting the natural and cultural heritage of humanity?</p>
13	s Art by non-human beings		Most museums and art institutions focus on art created by non-humans and mainly exhibit their art.	Museums only exhibit art created by humans.				<p>Do you exhibit non-human works?</p> <p>Have museums changed their approach to non-humans?</p> <p>Do museums present artworks created by people?</p> <p>Has artificial intelligence become the primary creator of modern art and museum exhibitions by 2050?</p> <p>By 2050, is artificial intelligence creating more artworks than humans?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
14	p Global armed conflict	There are many frozen regional conflicts that threaten to erupt into armed conflict.	By 2050, a global armed conflict had erupted, involving most countries in the world.	By 2050, almost all local armed conflicts are extinguished.	There are many regional armed conflicts that have not evolved into a global conflict by 2050.			Will global armed conflict erupt by 2050?
15	e Climate goals	By 2050, some climate goals have been achieved.	By 2050, most of the climate goals assumed today have been fully met.	By 2050, most climate targets have been unmet.				Will the climate goals assumed today be achieved in 2050?
16	p Impact of the political system and power structures on the way museums and art institutions operate	Authoritarianism is the dominant political system. It is also reflected in how art institutions & museums operate. As part of the public system they have been subordinated to the goals of those in power. Freedom of speech and artistic expression is significantly curtailed by various forms of censorship and self-censorship mechanisms. Programme choices are dictated by the ideological priorities of the authorities.	Societies consciously embrace diverse democratic models - direct democracy, deliberative democracy, participatory democracy, & liquid democracy - and museums and art institutions have been reshaped to reflect these political philosophies. They manifest a proactive vision of cultural spaces as inclusive ecosystems where various forms of democratic engagement are practiced.	Poland has a liberal democracy and the country is perceived as one where the rule of law applies. Museums and art institutions enjoy relative freedom to operate and create programmes, as long as they do not present content perceived as excessively controversial by representatives of the authorities.	Authoritarianism is the dominant political system. Museums and art institutions have become spaces of resistance to this political tendency. You can say they are enclaves of freedom of expression and opinion.			In 2050, will Poland have what is described today as the rule of law and liberal democracy.  Do political changes of an authoritarian nature affect the agenda and selection of topics dealt with by institutions/museums in 2050?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
17	e Accessibility and social classes	Museums and art institutions are exclusive salons and art has become a luxury good.	Museums and art institutions represent a common good, spaces that are inclusive and accessible to everyone, regardless of material situation or social background. Entry to them is free of charge.	Museums and art institutions are places of middle-class aspiration.				<p>Have most museums in 2050 eliminated admission fees making entry free for all visitors?</p> <p>Are museums a common good or exclusive commodity?</p>
18	s Popularity and social relevance	Museums are responding well to the challenges of their time, adequately addressing the social contexts in which they operate, which makes them important institutions. They have excelled in the new circumstances thanks to their artistic competence in dealing with different types of crises. They have a significant impact on social change.	Museums are cleverly responding to social needs, creating spaces that allow for digital detox and respite from virtual experience fatigue, making them very popular destinations.	Museums are popular because they give societies a sense of agency. They have sufficiently appropriate strategies, tactics and tools at their disposal to make a real impact on social change, shaping not only the debate but also becoming a site for the production of new social prototypes, infrastructures and new organisational formulas.	Museums have lost touch with reality. They have become dead spaces creating exhibitions with no connection to anything the public lives. Nobody visits them or takes any interest in their activities. The collections created over the years have proved to be completely inadequate and uninteresting to the 2050 society.	Museums have become autotelic and autarkic spaces. They feed on themselves and their internal processes. They are a place that only artists, cultural people and their staff are interested in. All of them, however, are not interested in the world, only in the institutions and in their own well-being and self-development in safe, isolated, sandbox conditions.	Museums have become completely irrelevant, inadequate in the face of social change and the challenges of a reality over which they have no impact.	<p>Do art museums still attract a large number of visitors, despite the rise of digital experiences?</p> <p>Are museums popular?</p> <p>Are museums relevant for society in 2050?</p> <p>Are museums important institutions in 2025?</p> <p>Have museums contributed to social change?"</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
19	s Ethics of art and institutions	Each museum has an independent position of ethicist, who decides on moral dilemmas related to artistic work and also gives approval for sensitive artistic projects.	Fragmentation and the phenomenon of the 'extreme self' has led to the field of ethics becoming a fierce culture war. Each museum has several employee ethics associations, each fighting to implement a value system close to its identity group. Each has established its own canons and benchmarks of ethical purity and scrutinises not only artistic practices but also intra-institutional processes from this angle.	Art has become a profoundly ethical practice, so it is to museums that one comes to resolve the most pressing dilemmas.	Art is seen as a space of unfettered freedom and ethics is not an important point of reference in museum practice.	'Ethics' became a tool of authoritarian power enforcing the creation of pure art only, corresponding to the dominant ideological project.		Is there a committee for ethics of presented projects in museums?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
20	s Centralisation or decentralisation?	<p>Large flagship institutions in major cities have attracted the most competent staff from across the country and abroad. It is in them that there is ferment, there is artistic life and they are the ones that attract the attention of audiences and artists. Residents of smaller towns travel to museums and institutions in big cities. Those that still exist locally have lost their stature and role.</p>	<p>Many people have moved from large cities to smaller ones, including artists and arts and culture workers. Among other things, this has contributed to the growth of museums and art institutions in smaller towns. This is where the most exciting art projects, exhibitions and residency projects are created.</p>	<p>Art is increasingly being made in unlikely places, unobvious locations, on farms, plantations, in the mountains, desolate and unexpected places. There, artists and curators have established a plethora of new institutions. Some of these operate in pop-up, temporary and ephemeral forms, while others have evolved into permanent and sustainable institutional activities. Amid this complex infrastructure of institutions in unlikely places, museums and art institutions in big cities seem obsolete.</p>				<p>Are major art institutions still in the biggest cities?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
21	p Independence, public funding and market	Museums and art institutions are financially and organisationally dependent on public authority	Museums and art institutions have become semi-independent of public authority through commercialisation. They have managed to find a way to commodify their services within an economy of experience. They are still partially funded from public money, but they also sell their services and products in the market.	Museums and art institutions have become independent of public authority through a project of real and radical autonomy. They have become institutions of the common good, funded by diverse artistic-creative-curatorial-production communities. Sometimes they operate as artist cooperatives, other times informal structures. Importantly, however, such initiatives have succeeded in creating an inter-institutional infrastructure that allows for the mutual exchange of resources, data, ideas, knowledge, rights and works. It is through these infrastructures that they have the power to act and are visible in the mainstream.	Museums and art institutions are independent of public authority and have created alternative organisations, but their action is severely limited. They are places of care, empathy and support rather than dynamic sites for producing art, new ideas and relationships.	In 2050, there are no more publicly funded institutions. They have either been abolished or privatised as a relic of socialism. Today they operate under market laws or there are none. The needs of the mass consumer rule the museums' programs.	Museums and art institutions operate either as companies with private and public participation or as public-private partnerships. The creation of collections and high-quality exhibitions is recognised as a social value and is therefore generously funded by public funds, regardless of the legal form of the organisation.	<p>Have museums and cultural institutions become more financially and managerially independent from the state?</p> <p>Do progressive institutions/museums function on an autonomous basis?</p> <p>In 2050, are institutions/museums organisationally and financially subject to public authority?</p> <p>Are there publicly funded art museums and institutions in Poland in 2025?</p> <p>Are museums in 2050 primarily funded by public entities? Are there any public institutions still existing in 2050?</p> <p>In 2050, is the consumer market a decisive factor in the development and operation of institutions / museums?"</p>



No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
22	e Threats to the collection	Museum collections are threatened by continuing extreme weather events and the consequences of climate change and they are completely failing to deal with these threats.	Due to the high frequency of biological and weather-climate threats, the warehouses of museum collections have become sealed bunkers to protect artworks from threatening external factors of various kinds.	Museum collections are threatened by armed conflict, terrorism and warfare.	Museum collections are safe and nothing threatens them.			Are museum collections safe, e.g. due to climate?
23	s Employment of and collaboration with artists	Art museums employ artists on employment contracts.	Art museums employ artists temporarily during extensive residency programmes.	Art museums do not collaborate with artists.	Art museums occasionally employ and collaborate with artists, but this is not a priority for them.			Do art museums and institutions employ artists in Poland in 2050?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
24	e The value of artworks in relation to the physical and digital realm	With the proliferation of various artistic digital works, the value of physical artefacts has increased significantly.	It is the digital works that are valued. In contrast, traditional artworks - whether physical paintings, sculptures or even media art - are treated as outdated, uninteresting and seen as worthless. Their market value has fallen dramatically.	Both physical and digital artworks are valued, as art has become one of the most valued areas.	There is no longer a distinction between digital and traditional art. Everything is hybrid in nature. Material reality has its digital dimension and vice versa. Every traditional artwork has been tokenised and has its NFT, every physical sculpture has its digital twin & the code to make it on a 3D printer. Traditional artworks have their virtual extensions. The different dimensions intermingle and the boundaries between them are crossed seamlessly and are not given attention. Consequently, the perception of the value of an artwork does not depend on whether it belongs to the old and outdated categories of digital and traditional art.	The most valued art form is code, which creates new aesthetic, spatial and visual qualities.		Are physical, traditional artworks still valued more than their digital counterparts in 2050?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
25	t Global platforms for digital art	Most museums have global shared platforms for digital collections. It is blockchain based and fully accessible to the planetary audience.	Museums have local platforms for digital collections, stored in nearby data centres and only accessible locally in their buildings. What matters is local, not planetary or global.	Museums operate locally and do not collect digital art.				By 2050, do most museums have global, shared platforms for digital collections?
26	s Public interest in art and the role of art in museums and institutions	Museums create art exhibitions and these are highly valued socially. They are also developing their art collections.	Museums still exist, but they no longer collect and exhibit art. The audience misses art exhibitions very much.	Museums still exist and are very popular, but they no longer collect and exhibit art. The audience is not interested in art.	Museums create collections and exhibit art. The public enjoys visiting them. But they do so not because of the art, but because of the other qualities of these institutions' programmes.	Museums and art institutions do not exist.		Do museums and art institutions still develop, sustain and present collections of artworks in Poland in 2050? Are museums presenting art in 2050? Will people visit museums in 2050 to see art? Is the audience interested in visual art in 2050? Do art museums exist?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
27	s Definition of an 'artist'	In the realm of AI art is mainly created in the digital world. With enhancement people are given by AI, all people can produce art. Museums are spaces where creativity is boosted and people can create artworks which are then included in the museum's exhibits.	Coding, game design, scientific visualization, and other fields gain recognition as artistic mediums. Museums curate exhibitions that showcase the creative potential across diverse disciplines.	Despite technological advancements, the definition of "artist" remains tied to exceptional talent and skill in traditional mediums. Museums prioritise works with clear authorship and historical significance. Authentication and provenance research become increasingly important in a world where technology can easily replicate artistic styles.				Is there still a division between artists and audience?
28	s Who creates narratives and museums' agenda	Museums actively challenge traditional art historical canons, showcasing a greater diversity of artists and art forms. Exhibitions highlight the contributions of women and minority artists throughout history and in contemporary practice.		Despite efforts to promote diversity, women and minorities remain underrepresented in museum leadership. Traditional power structures and biases continue to hinder progress.				By 2050, has the equality agenda resulted in women and minorities making up at least 50% of leadership positions in cultural institutions?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
29	i Responsibility in museums	Decision-making in museums is decentralized and participatory, involving not just artists but also community members, museum staff, and other stakeholders.	There is a division of roles: managers handle administrative and operational tasks (fundraising, budgeting, facility management, marketing, and ensuring the museum's financial sustainability) and artist-curators have full control over the artistic direction of the museum (exhibition planning, collection development, artist selection, and public programs).	Decision-making within museums and art institutions remains largely centralized and hierarchical, perpetuating traditional power structures and limiting widespread participation in shaping the direction of these organizations.	In an increasingly technology-dependent future, museums may rely on AI algorithms to optimize key management decisions, encompassing areas like budgeting, staffing, marketing, and programming. This reliance on data-driven insights could inadvertently reinforce existing hierarchical structures, as decision-making becomes centralized around AI-generated recommendations, potentially limiting diverse perspectives and bottom-up innovation.			<p>Are museums managed by artists in 2050?</p> <p>Are museums run democratically?</p> <p>Do museums have directors (are governed as top-down institutions)?</p> <p>Are Museums and Art Institutions still run in a hierarchical way, by the directors and curators?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
30	i Museums as promoters of well-being in the workplace	Museums adopt automation and AI wherever possible to streamline operations and reduce reliance on human labor. In this environment, having a job is seen as a privilege, and employees are expected to be grateful for the opportunity, even if it means increased workloads and limited flexibility.	Museums are increasingly prioritizing the physical and mental well-being of their visitors, offering spaces for relaxation and contemplation, integrating nature into their exhibitions and environments, and providing resources for stress reduction and mindfulness. However, the well-being of their staff is often overlooked or neglected.	Museums prioritize the physical and mental health of their employees, offering flexible work arrangements and on-site wellness programs. They foster a supportive and inclusive work environment that values diversity and work-life balance.				Are museums a safe, healthy place?
31	e Salaries in museums	Museums offer competitive salaries to attract and retain top talent. They recognize that investing in their staff is essential to achieve their mission and serve their communities.	Museums explore models of employee ownership or profit-sharing, allowing staff to benefit directly from the museum's success. This fosters a sense of shared responsibility & encourages longterm commitment to the institution.	The disparity in salaries between roles associated with new technologies and traditional museum positions has created internal tensions and led to a resurgence of union activity within cultural institutions.	Salaries in museums and art institutions are tragically low. Their employees live in poverty and precarious conditions, creating existential anxiety and frustration.			Are museum employees paid fairly?

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
32	s Social practices of visitors	Museums become even more deeply embedded in their local communities, serving as vital hubs for connection and engagement. They offer a wide range of programs and activities that cater to local interests and needs, fostering a sense of belonging and shared identity.	Museums are primarily focused on curating digital experiences, operating predominantly in the digital realm. Visitors can engage with exhibitions and interact with each other through immersive technologies like VR goggles.	Museums have shifted their primary focus to craft personalised digital experiences, existing largely within the virtual sphere. Instead of engaging with pre-planned exhibits, visitors now encounter customized content tailored to their individual preferences.	Museums prioritise creating safe and welcoming spaces where people feel comfortable gathering and interacting. They offer a respite from the anxieties of the outside world, fostering a sense of community and connection.			<p>Are people afraid to leave their home ecosystems in 2050?</p> <p>Are museums places to interact with others?</p> <p>Do people still prefer face-to-face contact in 2050?</p> <p>Are museums a safe, healthy place?</p> <p>Do you work with a division into local and global?</p>

No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
33	I Travelling in the future	With limited travel, museums emphasize local history and traditions, celebrating their communities' unique cultural heritage. They become centers for local identity and pride, fostering a sense of belonging in a fragmented world.	International digital cooperation between cultural institutions flourishes. Museums co-curate digital exhibitions and projects with partners across the globe, bringing together diverse perspectives and artifacts.	Joint exhibitions or projects with institutions in other countries become less frequent due to logistical challenges and potential restrictions.	Truly planetary and translocal institutions have emerged, based on real collaboration - both physical and digital - between organisations, artists, initiatives and collectives from different parts of the world, creating a field for the exchange of experiences, transnational solidarity, joint creative work and the search for answers to the most important planetary challenges of the present and the future. Such institutions create a planetary infrastructure and support each other through the exchange of resources, knowledge, systems, artworks, people and practices. People have understood that they need face to face contact and mobility reinforcement, so they fly and travel to each other - out of curiosity, a need to meet, a passion for exploring.	Art institutions and museums ignore the local and go global, so curators, artists and audiences fly and travel between the world's most important institutions and events. Collaborating with artists from all corners of the world and addressing their programme to a global audience.		Have travel distance limits or travel bans been introduced before 2050?



No.	Clusters' names	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Clustered uncertainties
34	s Role of progressive museums in the public discourse	Progressive museums remain niche institutions, attracting a dedicated but relatively small audience of like-minded individuals. They may struggle to gain mainstream acceptance and face criticism or even hostility from those who disagree with their perspectives.	Progressive museums become battlegrounds in ongoing culture wars, facing opposition and even protests from those who perceive their agenda as a threat to traditional values or dominant narratives.	Progressive museums develop innovative strategies to engage new audiences and foster dialogue across differences, creating spaces, where people with diverse viewpoints can connect and learn from one another. In consequence: while facing some initial resistance, progressive museums gradually gain wider acceptance.				Do progressive institutions / museums, pursuing their agenda in opposition to the dominant narratives, remain in a hostile relationship with the audience?