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Assessing Existing AI Applications in Cultural Institutions

A Five-Dimension Framework



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AI is already in use. Assessment lags behind.

AI supports collections management, visitor experience, and internal operations across the heritage sector (Caramiaux, 2023; Pavis, 2023).

BEFORE ADOPTION

Planning tools

The Museums + AI Toolkit, the Data Ethics Canvas, and Consequence Scanning help institutions plan AI projects (Murphy, 2023).

BEFORE ADOPTION

Governance models

A human-centric governance model sets principles for visitor-centered AI (Derda & Predescu, 2025).

IN OPERATION

The gap

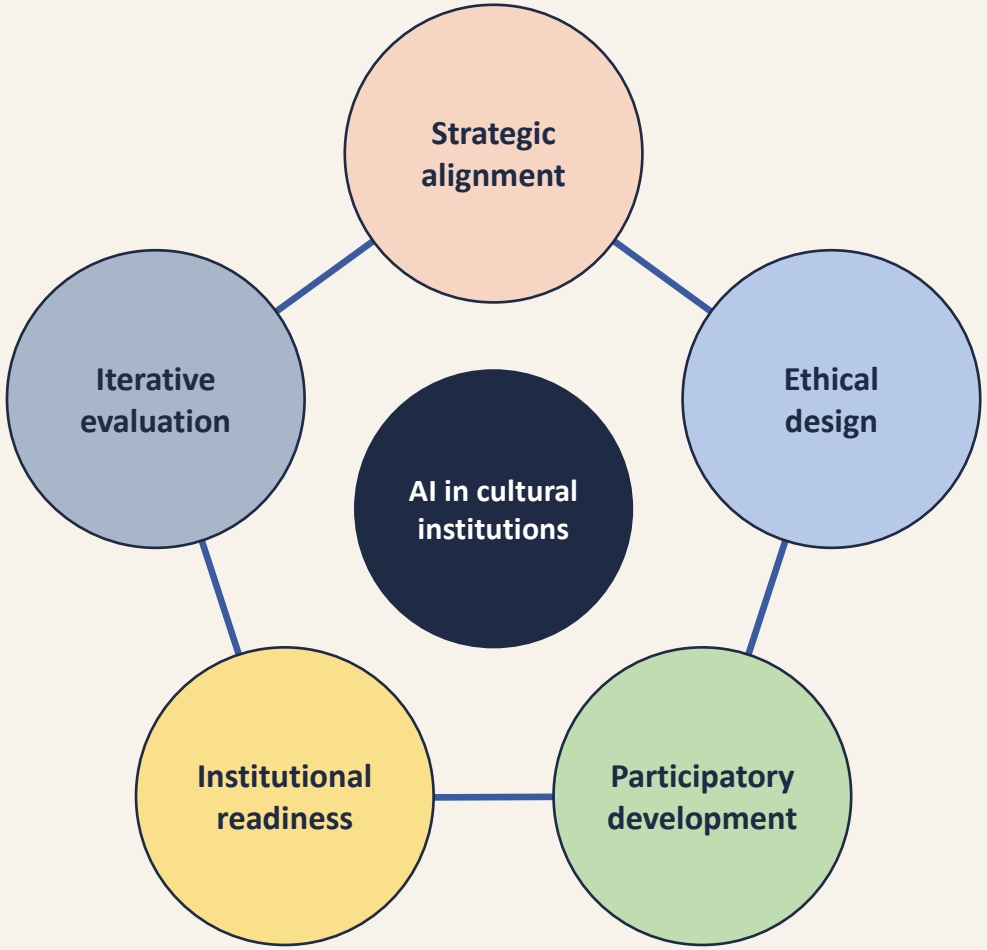
Few tools assess AI applications already in use, although UNESCO (2021) calls for monitoring across the AI life cycle.

Objective and research questions

Objective. Develop and test a framework for assessing existing AI applications in cultural institutions.

RQ1	Which dimensions are needed to assess AI in cultural institutions beyond technical performance?
RQ2	How do AI applications already in use in museums and archives perform across these dimensions?
RQ3	Which gaps recur, and what do they imply for responsible, human-centered AI?

A five-dimension framework



Strategic alignment
Does the AI support the institution's mission and public engagement goals?

Ethical design
Is it designed with attention to cultural authenticity, inclusivity, and bias prevention?

Participatory development
Were staff, visitors, and communities involved in its development?

Institutional readiness
Is it embedded in structures for training, governance, and maintenance?

Iterative evaluation
Are there mechanisms for ongoing evaluation, feedback, and adaptation?

Synthesized from HCI research on value-sensitive and participatory design, cultural sector ethics, and institutional readiness models.

Methodology

4

international AI applications

5

guiding questions, one per dimension

Public

documentation as the data source

Qualitative comparative study. Cases selected for international visibility, diversity of applications, and available public documentation. Sources include institutional pages, project documentation, presentations, and media coverage.

Interpretive rating scale

Very Strong	Strong	Moderate	Limited	*No public evidence*

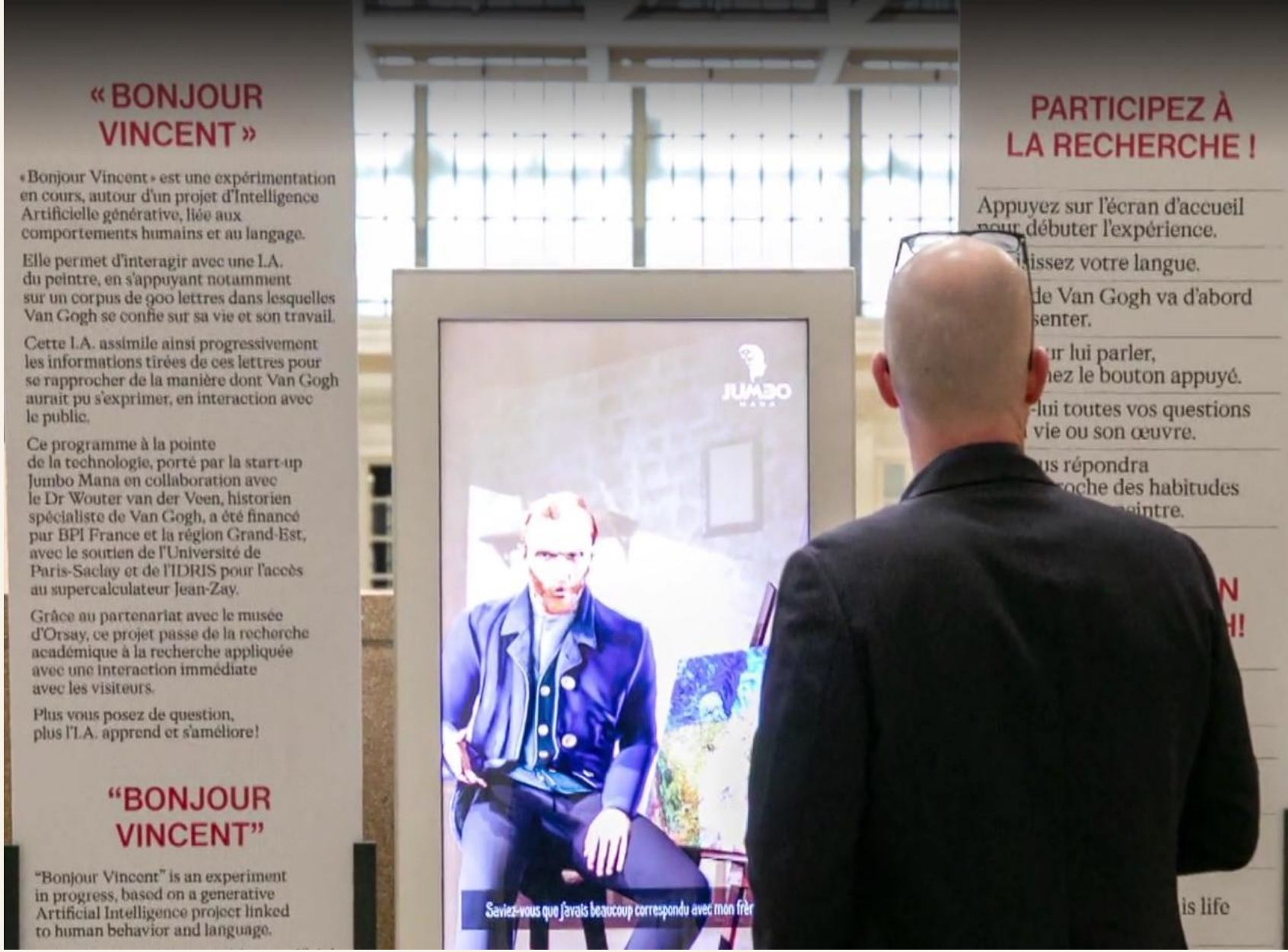
Missing documentation is recorded as "No public evidence", not read as absence of practice.

1

Hello Vincent

Musée d'Orsay

Conversational installation. Generative AI, drawing in part on about 900 of Van Gogh's letters, answers visitors' spoken questions.



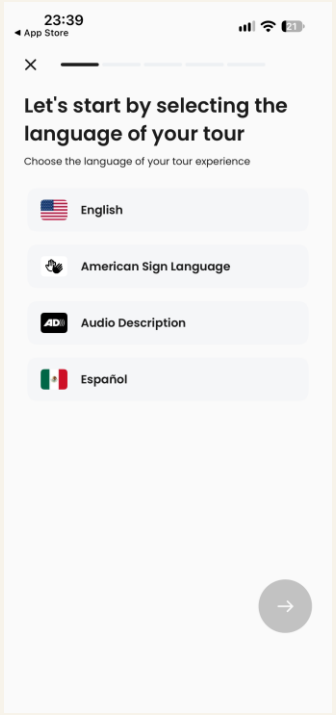
Screenshot, https://www.cbs.com/shows/video/GxWFkjzmKlHoO2SICv8xS119V_YhVBJg, accessed October 2026.

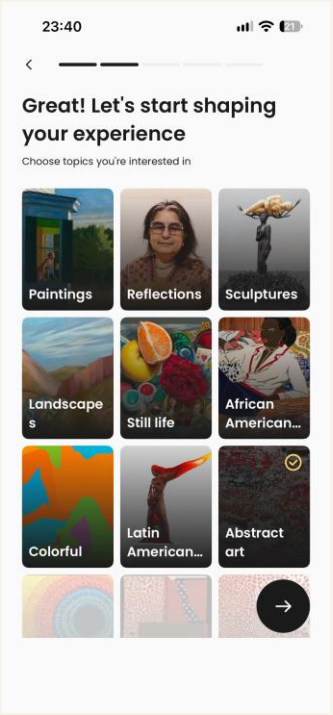
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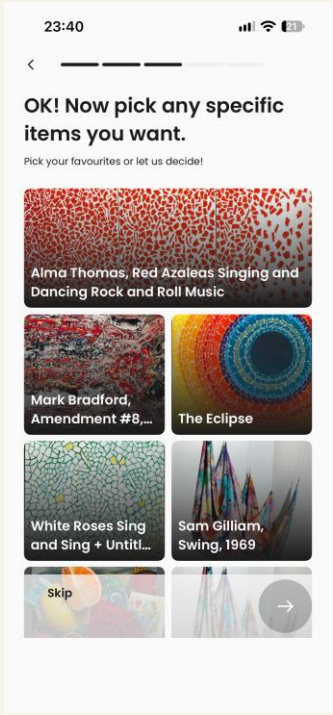
Smartify tours

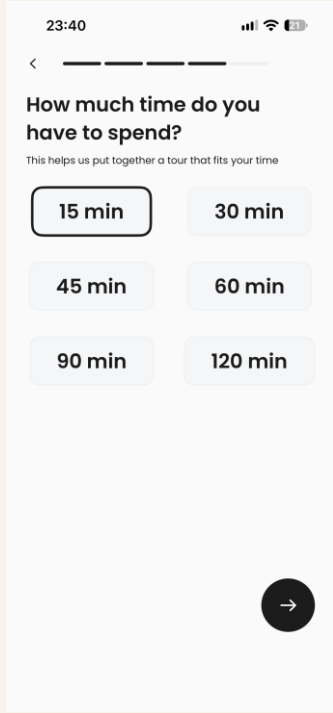
Smithsonian American Art Museum

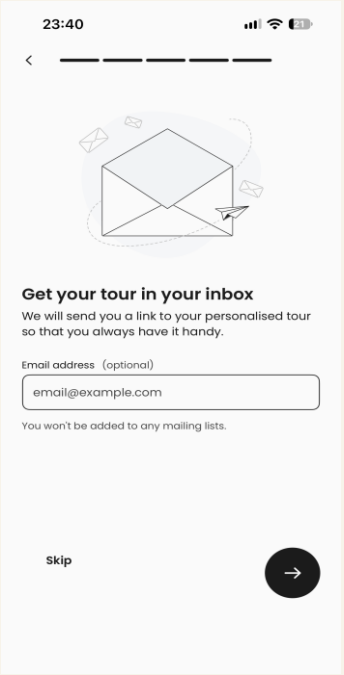
Personalized tours based on visitors' interests, with artwork recognition, in English, Spanish, and ASL.



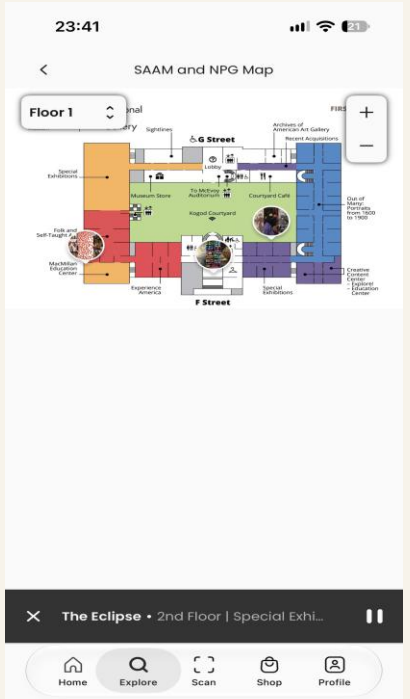












Screenshots, Smartify app, accessed October 2026.



EDVARD MUNCH
CONNECT THE LINES

Connect in playful new ways with Munch's drawings – a strange and surprising world to explore. Create your own digital drawings and discover how AI finds similar works from the collection.





Photo: Ove Kvavik, Munchmuseet

Photo: Ove Kvavik, Munchmuseet

3

Edvard Munch: Connect the Lines

Munch Museum

AI matches visitors' drawings with more than 7,000 archival drawings that are too fragile to display.



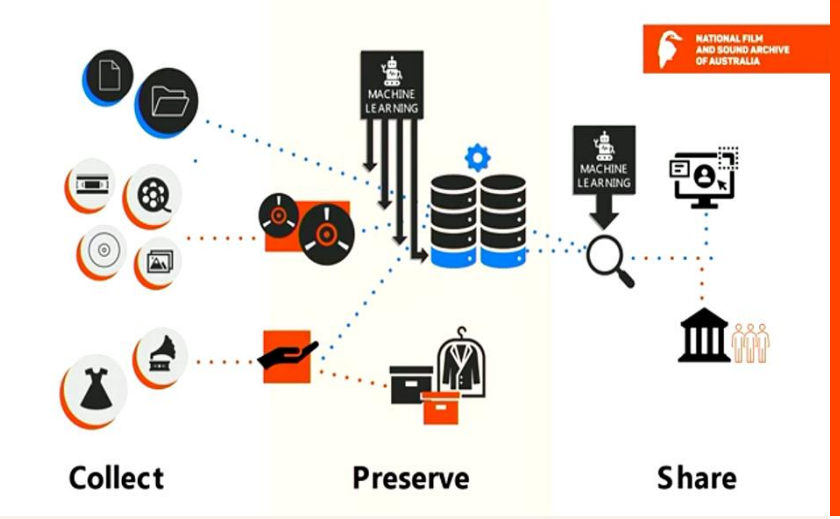


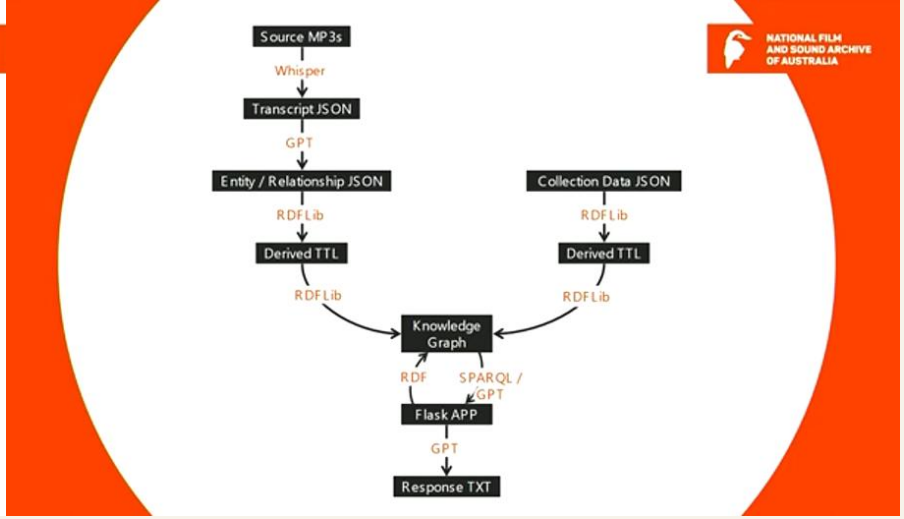
Photo: Ove Kvavik, Munchmuseet

Photo: Ove Kvavik, Munchmuseet

Screenshots, https://www.munch.no/en/exhibitions/connect-the-lines/ , accessed October 2026.





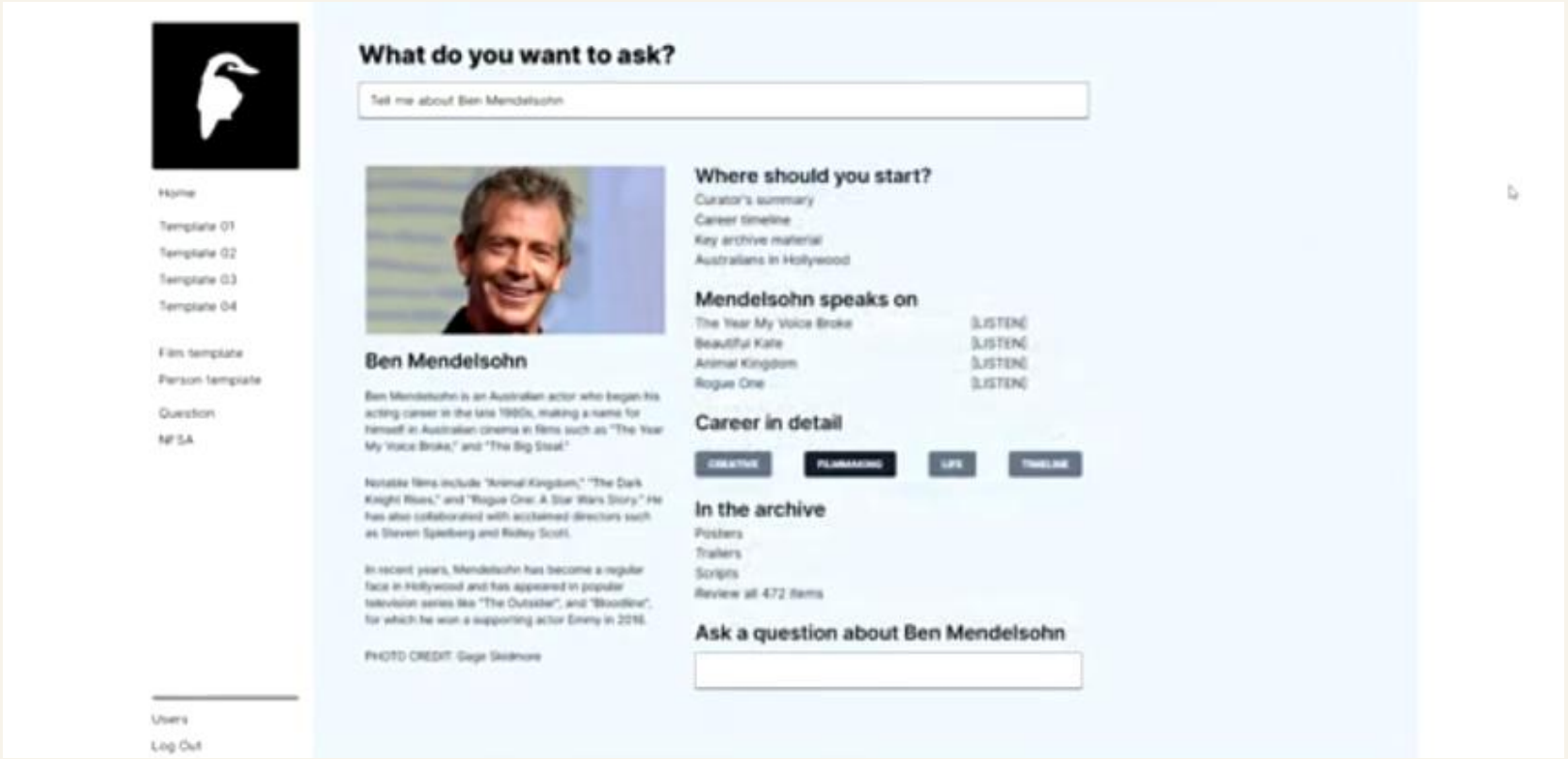


4

Machine learning for archives

National Film and Sound Archive of Australia

Mass transcription and automated metadata surface overlooked content in the collection.



Screenshots, https://www.youtube.com/watch?v=n4cfmjDutj8&t=921s, accessed October 2026.

Results across five dimensions

Case	Strategic alignment	Ethical design	Participatory development	Institutional readiness	Iterative evaluation
Hello Vincent	Strong	Moderate	Limited	Moderate	Limited
Smartify	Strong	Moderate	Moderate	Strong	Moderate
Connect the Lines	Strong	**Very Strong**	Moderate	Strong	*No public evidence*
Audiovisual archive	Strong	Strong	Limited	**Very Strong**	Moderate

Interpretive ratings based on publicly available documentation. Exploratory, not definitive.

Key findings

1

Strategic alignment is strong in all four cases.

Each application is clearly connected to its institution’s mission.

2

Ethical design is uneven.

The Munch Museum publishes how its system works, keeps visitor data under its own control, and asks consent before reusing drawings for research.

3

Participation remains limited to moderate.

Documentation rarely shows how visitors or communities shaped the systems.

4

Institutional readiness is mostly strong but varies.

The archive has embedded machine learning in everyday workflows. *Hello Vincent* was a temporary installation outside long-term digital strategy.

5

Evaluation after launch is limited or only partly documented.

Little public evidence of structured feedback or review.

Contribution and limitations

Contribution

A lens for AI applications already in use, connecting HCI and museum studies.

Innovation

Turns high-level AI principles into questions institutions can apply to their own systems.

Impact

A reflective tool that helps institutions examine and improve how they develop, govern, and evaluate their AI applications, rather than a performance metric.

Limitations

- Public documentation only
- Interpretive ratings by one researcher
- Four cases
- One case still running (*Edvard Munch: Connect the Lines* until November 29, 2026)

Next steps and open questions

Next steps. Extend the framework with more case studies and a wider range of AI applications and refine it with museum professionals and other stakeholders.

For discussion

- How can participation be assessed when AI comes from commercial platforms?
- How should institutions be assessed when public documentation is thin?
- Should environmental and financial sustainability become a sixth dimension?

Slides prepared with the assistance of Claude (Anthropic). Content reviewed and verified by the author.



Thank you

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References: key literature

Birhane, A., Isaac, W., Prabhakaran, V., Díaz, M., Elish, M. C., Gabriel, I., & Mohamed, S. (2022). Power to the people? Opportunities and challenges for participatory AI. In *Proceedings of the 2nd ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization* (Article 6). ACM. https://doi.org/10.1145/3551624.3555290

Caramiaux, B. (2023). AI with museums and cultural heritage. In S. Thiel & J. C. Bernhardt (Eds.), *AI in museums: Reflections, perspectives and applications* (pp. 117–130). transcript Verlag. https://doi.org/10.1515/9783839467107-011

Delgado, F., Yang, S., Madaio, M., & Yang, Q. (2023). The participatory turn in AI design: Theoretical foundations and the current state of practice. In *Proceedings of the 3rd ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization* (Article 37). ACM. https://doi.org/10.1145/3617694.3623261

Derda, I., & Predescu, D. (2025). Towards human-centric AI in museums: Practitioners' perspectives and technology acceptance of visitor-centered AI for value (co-)creation. *Museum Management and Curatorship, 40*(4), 532–554. https://doi.org/10.1080/09647775.2025.2467703

Dikow, R. B., et al. (2023). Developing responsible AI practices at the Smithsonian Institution. *Research Ideas and Outcomes, 9*, Article e113334. https://doi.org/10.3897/rio.9.e113334

Friedman, B., & Hendry, D. G. (2019). *Value sensitive design: Shaping technology with moral imagination*. MIT Press.

Murphy, O. (2023). Power, data and control: AI in the museum. In S. Thiel & J. C. Bernhardt (Eds.), *AI in museums: Reflections, perspectives and applications* (pp. 73–82). transcript Verlag. https://doi.org/10.1515/9783839467107-008

Murphy, O., & Villaespesa, E. (2020). *AI: A museum planning toolkit*. Goldsmiths, University of London. https://themuseumsainetwork.files.wordpress.com/2020/02/20190317_museums-and-ai-toolkit_rl_web.pdf

Network of European Museum Organisations. (2024, March 20). *Policy recommendations addressing artificial intelligence and museums*. https://www.ne-mo.org/fileadmin/Dateien/public/NEMO_Statements/NEMO_Policy_recommendations_AI_and_museums_20.03.2024.pdf

Pavis, M. (2023). *Artificial intelligence: A digital heritage leadership briefing*. The National Lottery Heritage Fund. https://www.heritagefund.org.uk/about/insight/research/artificial-intelligence-digital-heritage-leadership-briefing

Thiel, S. (2023). Managing AI: Developing strategic and ethical guidelines for museums. In S. Thiel & J. C. Bernhardt (Eds.), *AI in museums: Reflections, perspectives and applications* (pp. 83–98). transcript Verlag.

UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. https://unesdoc.unesco.org/ark:/48223/pf0000380455

References: case studies

Binswanger, J. (2024, February 15). Musée d'Orsay breaks attendance records with interactive Vincent van Gogh exhibition. *Smithsonian Magazine*. https://www.smithsonianmag.com/smart-news/musee-dorsay-breaks-attendance-records-with-immersive-ai-van-gogh-show-180983789/

Brooke, G. (2025, March 25). Using AI to create a 'conversational archive' at the National Sound and Film Archive (NSFA). *Cultural Content*. https://culturalcontent.substack.com/p/using-ai-to-create-a-conversational

Coronel, R., & Winesmith, K. (2024). *AI, machine learning & audiovisual collections at NFSA* [Conference presentation]. National Digital Forum. https://www.ndf.org.nz/ndf-videos/v/ai-machine-learning-audiovisual-collections-at-nfsa-rebecca-coronel-dr-keir-winesmith

Katz, L. (2023, December 14). Interactive AI-powered Van Gogh wants to talk with you about life, and death. *Forbes*. https://www.forbes.com/sites/lesliekatz/2023/12/14/vincent-van-goghs-ai-twin-wants-to-talk-with-you-about-life-and-death/

La Revue du Digital. (2023, October 3). Parlez avec Vincent van Gogh via une intelligence artificielle au Musée d'Orsay. https://www.larevuedudigital.com/parlez-avec-vincent-van-gogh-via-une-intelligence-artificielle-au-musee-dorsay/

Munch Museum. (n.d.-a). *Edvard Munch: Connect the Lines*. https://www.munch.no/en/exhibitions/connect-the-lines/

Munch Museum. (n.d.-b). *How does the interaction work and what happens to your drawing?* https://www.munch.no/en/exhibitions/connect-the-lines/how-we-use-artificial-intelligence/

Musée d'Orsay. (2024). *Digital technology: Hello Vincent*. https://www.musee-orsay.fr/en/articles/digital-technology-hello-vincent-275618

Smartify. (n.d.). *AI tours and an AR game for the Smithsonian American Art Museum* [Case study]. https://smartify.org/partners/case-studies/ar-game-smithsonian-american-art-museum

Smithsonian American Art Museum. (n.d.). *Audio guide: Listen to the stories behind the art*. https://americanart.si.edu/visit/tours/audio-guides

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