

The Great “Opening”: Case Study of Art institute of Chicago's
Public API, Open Source Code, and Open Access Images

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Introduction

At the start of 2021, The Art Institute of Chicago (ARTIC) announced the launch of their public API (application programming interface), unrestricted access and usage of 50,000 plus images from their digital collection¹ under the Creative Commons Zero (CC0) designation², access to information about artwork exhibitions³, and open source code. Since the launch, the Art Institute has published some of the creative usages of their open API from interactive software developed to work through Amazon's Alexa, a GIF IT UP competition, Animal Crossing art generator, and even a program created through Google Summer of Code⁴ that delivers a random Art Institute artwork to a phone via a text messaging service.⁵

This case study attempts to understand what necessitates this technological achievement and understand how it could affect visitor engagement, DEIA efforts, and evolve the traditional protective mindset (“keep it close until perfect”)⁶ to a culture of transparency.

Background and History

“Founded as both a museum and school for the fine arts in 1879”⁷, the Art Institute of Chicago is located in Chicago, IL, “the traditional homelands of the Council of Three Fires- the Ojibwe, Odawa, and Potawatomi peoples.”⁸ The Art Institute's mission states the following: “The Art Institute of Chicago shares its singular collections with our city and the world. We

¹ “Open Access,” The Art Institute of Chicago, accessed December 15, 2021, <https://www.artic.edu/open-access>.

² “Creative Commons — CC0 1.0 Universal,” accessed December 14, 2021, <https://creativecommons.org/publicdomain/zero/1.0/>.

³ Kevin Sundstrom, “The Art Institute of Chicago Adds Public API Access to Exhaustive Collection of Museum Data,” ProgrammableWeb, January 27, 2021, <https://www.programmableweb.com/news/art-institute-chicago-adds-public-api-access-to-exhaustive-collection-museum-data/brief/2021/01/27>.

⁴ Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

⁵ Nikhil Trivedi, “Public Access to Our Public Presence: Sharing Our API,” January 26, 2021, <https://www.artic.edu/articles/902/public-access-to-our-public-presence-sharing-our-api>.

⁶ Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

⁷ “History,” The Art Institute of Chicago, accessed December 14, 2021, <https://www.artic.edu/about-us/history>.

⁸ Ibid.

collect, care for, and interpret works of art across time, cultures, geographies, and identities, centering the vision of artists and makers. We recognize that all art is made in a particular context, demanding continual, dynamic reconsideration in the present. We are a place of gathering; we foster the exchange of ideas and inspire an expansive, inclusive understanding of human creativity.”⁹ Additionally, one of their values declares: “We sustain an open and dynamic civic platform, inviting and advancing the diverse perspectives of our city, staff, visitors, and supporters”¹⁰, is evocative of and substantiates the open access launch of the institution.

It is also important to provide context to the Art Institute of Chicago’s open access initiative in the greater digital landscape of GLAM (galleries, libraries, archives, and museums). Open access has grown to encompass a spectrum of meaning. In this context, open “means anyone can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness).”¹¹

In an ongoing self-reporting data collection endeavor devised by Douglas McCarthy and Dr. Andrea Wallace¹² called “Survey of GLAM open access policy and practice”, highlight the growing “opening” efforts of cultural institutions across the world (see fig. 1 in Appendix B). Additionally, it also underlines how these efforts differ from institution to institution.¹³

Notable institutions that have been on the forefront of opening their collections and data in the last 15 years to present are The Metropolitan Museum of Art, Rijksmuseum, Cleveland

⁹ “Downtown Chicago’s #1 Museum,” The Art Institute of Chicago, accessed December 15, 2021, <https://www.artic.edu/>.

¹⁰ Ibid.

¹¹ “The Open Definition - Open Definition - Defining Open in Open Data, Open Content and Open Knowledge,” accessed December 15, 2021, <https://opendefinition.org/>.

¹² “Open GLAM Survey Backup 20210803 : Douglas McCarthy and Dr. Andrea Wallace : Free Download, Borrow, and Streaming,” Internet Archive, accessed December 14, 2021, https://archive.org/details/OpenGLAM_Survey_20210803.

¹³ Douglas McCarthy, “Open Access Scope in Open GLAM,” *Open GLAM* (blog), November 14, 2020, <https://medium.com/open-glam/open-access-scope-in-open-glam-70461bec2bca>.

Museum of Art, The Getty Museum, Cooper Hewitt, and the Statens Museum for Kunst (SMK)¹⁴¹⁵. This list is by no means exhaustive.

Goal of the Case Study

The goal of this case study is to first understand what operational and technical resources are needed to prepare and deploy the Art Institute of Chicago's open-access initiative, as realized through the creation of their open API, a conduit to connect to the institution's digital collection (replete with public domain images and metadata), published information, and open source code.¹⁶ With transparency there is potential to invite both criticism and surprising new discoveries. I investigate the impact of this deployment on the public, internal institutional dynamics, cross-sector collaborations, and equity inclusion efforts. Further questions to which seek answers involve understanding what metrics the Art Institute leverages to measure the success and the benefits realized as an outcome of their open-access initiative.

I have interviewed the Art Institute's director of engineering, Nikhil Trivedi, who was part of the team that facilitated this feat. The aim is to discover what enables his team to continue to build upon that momentum, despite the many challenges associated with the non-profit sector, especially the economic state of museums emerging from the financial impact of the COVID-19 pandemic.¹⁷

¹⁴ Effie Kapsalis, "The Impact of Open Access on Galleries, Libraries, Museums, &," n.d., 30.

¹⁵ "Full Text PDF," accessed December 14, 2021,

https://www.researchgate.net/profile/Melissa-Terras/publication/282183708_Opening_Access_to_Collections_the_Making_and_Using_of_Open_Digitised_Cultural_Content/links/5606842808aea25fce3541dd/Opening-Access-to-Collections-the-Making-and-Using-of-Open-Digitised-Cultural-Content.pdf.

¹⁶ "Open Access."

¹⁷ "2021_Third-Snapshot-Survey-on-the-Impacts-of-COVID19-on-the-Museum-Field.Pdf," accessed December 15, 2021,

https://www.aam-us.org/wp-content/uploads/2021/05/2021_Third-Snapshot-Survey-on-the-Impacts-of-COVID19-on-the-Museum-Field.pdf.

Key Findings

“In 2018 the museum embarked on redesigning [their] website¹⁸ [and] web presence...that was comprised of four separate websites”¹⁹ which included the marketing website (everything on artic.edu except artwork), the collections website, the sales and ticketing platform, and the museum shop website. These four sites spanned various CMS platforms from Drupal 5, Drupal 7, and two instances of custom.net applications.²⁰

The team of developers that embarked on this project were notably Mr. Trivedi, himself and Illya Moskvina, a lean team in which he acknowledges currently only half of his time can be dedicated to development time as he is the engineering department director.²¹ He mentions that during the website relaunch and streamlining of the eight network systems to one data hub (see fig. 2 in Appendix B) highlighted an opportunity to build an open API and global search functionality.²²

During this time, Mr. Trivedi was able to have support from Michael Neault, associate vice president and executive creative director of Experience Design²³, as he was leading the website relaunch and a web product manager, “who help[ed] liaison for mostly the website project, but is also really committed to open data.”²⁴ When asked about the leadership buy-in to complete the open access work, he shared that many educating conversations transpired about the value of open data and assurance of people’s safety and security with the data that would be

¹⁸ Michael Neault, “Behind the Scenes of the Website Redesign,” October 22, 2018, <https://www.artic.edu/articles/713/behind-the-scenes-of-the-website-redesign>.

¹⁹ Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

²³ “Michael Neault,” The Art Institute of Chicago, accessed December 14, 2021, <https://www.artic.edu/authors/11/michael-neault>.

²⁴ Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

available. What seemed to resonate the most was his passion and ability to tie open data technology to the institutional-wide “open” elements of their shared mission and values.²⁵

The ARTIC demonstrated a couple key advantages when it came to successfully developing and launching its open-access initiatives: dedicated internal staff to develop and maintain the technology required to support its functionality (as mentioned before) and the initiative is baked into the digital infrastructure of the institution, by design.²⁶

He mentions the importance of adopting an “aggressively transparent” ethos in completing work towards the institution’s mission, especially with the “slice of the organization [that he has] power and control over”²⁷. He goes on the state, “Sharing as much as we possibly can, with regards to open source data and images as well. I feel like it just creates new doors, through which people can enter our museum, folks who may not have ever really seen themselves connected with a museum or cultural institution, it creates another opening for them to engage with us and to maybe see themselves in our organization in a context where they may never have tried before.”²⁸ From that statement, it is clear that the open access initiative supports and facilitates the DEIA elements of the institution’s mission and values.

The importance of persistently educating, assuring, and collaborating with internal stakeholders and leaders when it comes to ensuring the buy in and support of open-access initiatives is secured breaking down the mentality of “ ‘this is ours, . . . keep[ing] it close until it's perfect’ and all those aspects of white supremacy culture that kind of makes everything really tight.”²⁹ The transparency of data and metadata serves as a conduit and stepping off point to have these difficult conversations about the reasons behind how museums’ collections are amassed.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

The efforts to deploy an open API is not solely technical, but a feat in shifting traditional institutional culture.

With great curiosity I pressed Mr. Trivedi about the metrics the institution was using to measure engagement of this new portfolio of open offerings. He admitted that “...there's a level of engagement, ...that's a part of consuming content..[that's] not just reading a blog or listening to a podcast, like people are creating and actively doing something with our source code, with our data, with our images. So I think we're seeing examples of that, but again, measurements of success? I think that's a little more nebulous for me to sort of put it to pin down to articulate.”³⁰ With that truthful acknowledgement, measuring how the ARTIC’s audience engaged with the open offerings became a priority in my recommendations.

Recommendations

The first recommendation for the Art Institute would be to devise metrics that measure the success, usage, and impact of the open-access technology and subsequent data. Possible key performance indicators could include; number of projects created, the scope/social impact of a project, utilization of the API and digital collection (via traffic, views, and download rates), error tracking (complaints/concerns raised by users). This information can prove to be valuable in understanding the trends and interest in the collection and ultimately, the institution itself. The Cleveland Art Museum devised a dashboard in partnership with an Ohio based data science firm, Pandata³¹, which measures across their open collection, open access API, and Wikipedia (see fig. 3 in Appendix B). Another means to acquire digital analytical insights without taxing the already small pool of resources on his team (bandwidth is a noted concern to Mr. Trivedi)³², is to

³⁰ Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

³¹ Marmitage, “Open Access,” Text, Cleveland Museum of Art, December 28, 2018, <https://www.clevelandart.org/open-access>.

³² Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

leverage and partner with other institutions that are involved with this type of research work, e.g. the research collective within Pratt Institute: The Center for Digital Experience³³.

The second recommendation involves continued expansion into the linked open data space via Wikidata, a free knowledge base project of the Wikimedia Foundation. Linked open data is defined as structured information that is machine readable. Relationships between entities can be described through a triple; subject, predicate, and object. Structuring data in this way encourages interoperability of datasets, decreasing information silos.³⁴ Preparing and modeling the institution's collection information to reside in this space allows for the linked open data community (and general public) and other cultural institutions to connect shared data nodes. There is opportunity for ARTIC to further expand their presence in this arena. Currently when querying the ARTIC artwork ID property(P4610) in Wikidata³⁵, which indicates identification to the Art Institute's collection on their website³⁶, it yields a return of 3,068 objects. Which compared to the Metropolitan Museum of Art's identifier, The Met Object ID property(P3634)³⁷, the query results in 22,388³⁸ objects. Of course, consideration is made in factoring their respective collection sizes. The Met has fortified their relationship with Wikimedia in the past (and their presence within the platform) by hosting a "Wikimedian-in-Residence".³⁹ This could be an avenue worth exploring.

³³ "Evaluating the Usability of Museum APIs – Center for Digital Experiences at Pratt Institute," accessed December 15, 2021, <https://prattdx.org/research/evaluating-the-usability-of-museum-apis/>.

³⁴ Jonathan Blaney, "Introduction to the Principles of Linked Open Data," *Programming Historian*, May 7, 2017, <https://programminghistorian.org/en/lessons/intro-to-linked-data>.

³⁵ See Appendix C for Wikidata SPARQL query

³⁶ "ARTIC Artwork ID," accessed December 15, 2021, <https://www.wikidata.org/wiki/Property:P4610>.

³⁷ "The Met Object ID," accessed December 15, 2021, <https://www.wikidata.org/wiki/Property:P3634>.

³⁸ See Appendix C for Wikidata SPARQL query

³⁹ "Introducing Open Access at The Met," The Metropolitan Museum of Art, accessed December 15, 2021, <https://www.metmuseum.org/blogs/digital-underground/2017/open-access-at-the-met>.

Lastly, I recommend the continued persistence of Mr. Trivedi to evangelize his “radically transparent” ethos.⁴⁰ There is an opportunity for technical and data driven deliverables to work in tandem with strategic goals cross departmentally as they all harken back to the institution’s mission. By continually pushing the idea of open and transparent data, positive results could be realized delivering marketing strategies, education (internally and externally), increased opportunities for engagement in non-traditional spaces (beyond the gallery), the reach to new audiences – those that typically don’t see “themselves in the organization and [do] not feel... connected to museums.”⁴¹ This ultimately allows for surprising and unexpected outcomes when an institution opens up and allows access to freely engage with their collection.

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⁴⁰ Nikhil Trivedi in discussion with Jessika Davis, December 7, 2021. Appendix A.

⁴¹ Ibid.

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Appendix A

Transcript of Interview with Nikhil Trivedi:

<https://docs.google.com/document/d/1gETqEyM53s3BVj866c9GZP7hKNR8z7bVYxmvEyxNdWY/edit?usp=sharing>

Appendix B

Images:

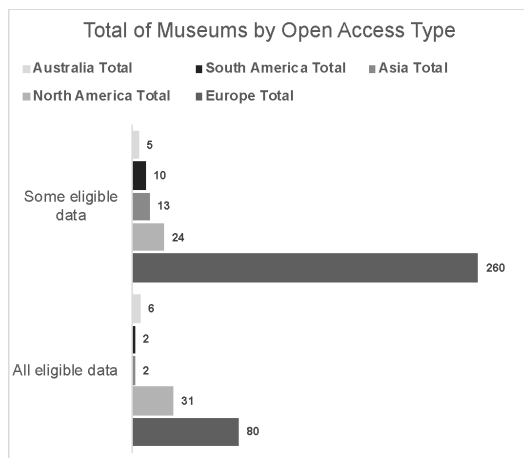


Fig. 1 https://archive.org/details/OpenGLAM_Survey_20210803

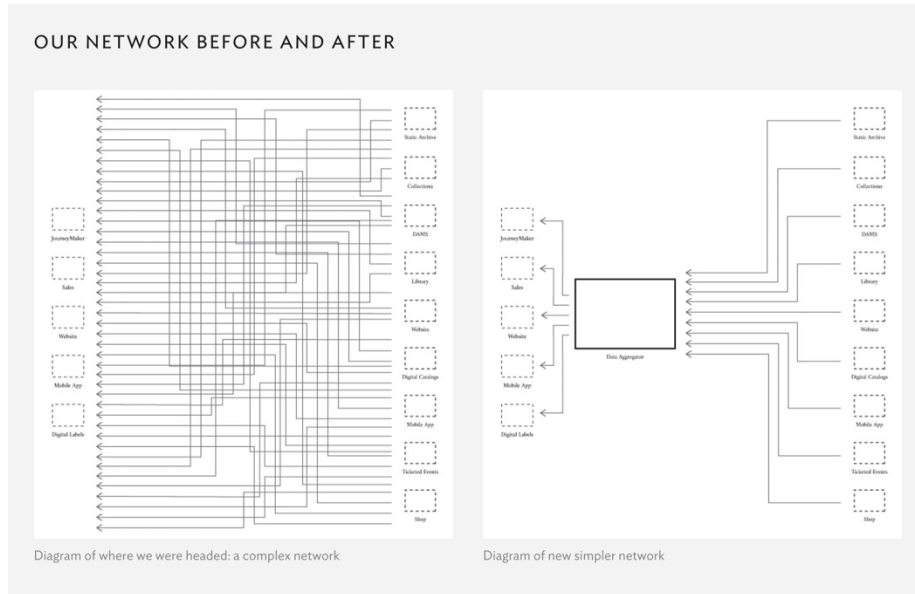


Fig. 2 <https://www.artic.edu/articles/902/public-access-to-our-public-presence-sharing-our-api>

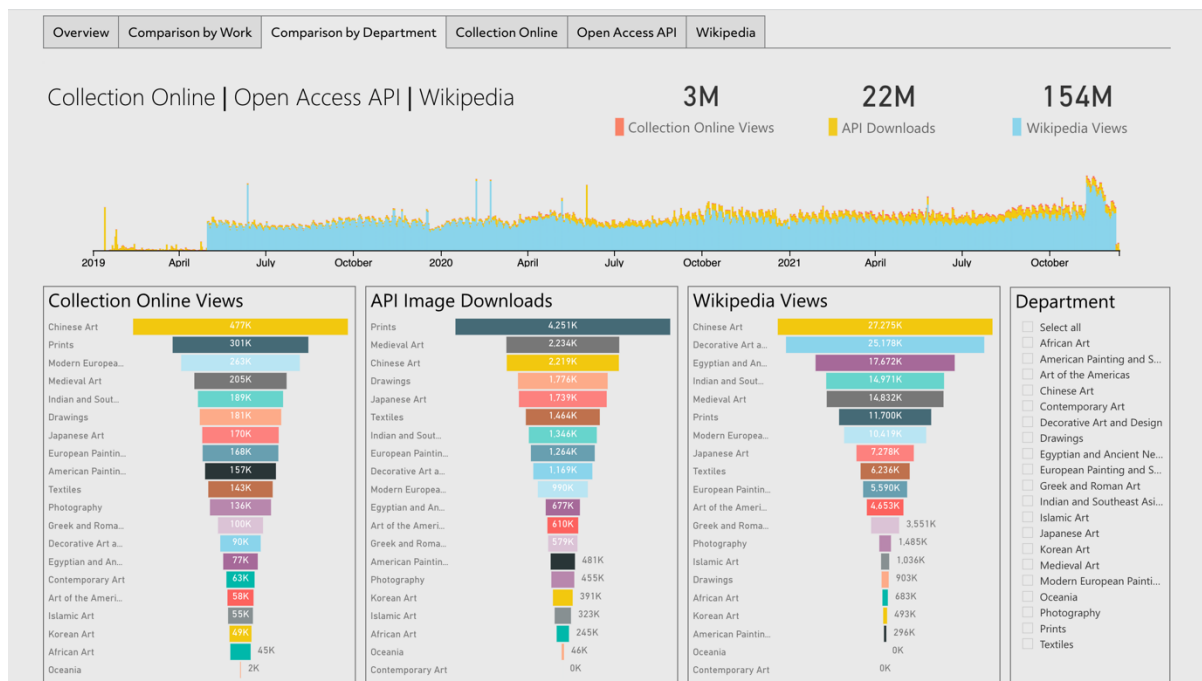


Fig. 3 <https://www.clevelandart.org/art/collection/dashboard#page-2>

Appendix C

Wikidata SPARQL Queries:

Instance of ARTIC artwork ID (P4610), regardless of value: <https://w.wiki/4Z3c>

Instance of The Met object ID (P3634), regardless of value: <https://w.wiki/4ZBx>