

Introduction

by Layna White, Special Section Guest Editor

Museum Informatics: Something New, Something More

EDITOR'S SUMMARY

Museums are evolving dramatically in the ways they manage and present collections and related information to consumers. The contributors explore museum informatics from distinct perspectives, reporting on museum initiatives that share the goal of enhancing audience members' experience of museum collections while distinguishing the museum among peers. Innovation is seen in a collaborative project to design a collections management system, the extra analysis made possible by supplementary video content, in-depth examination over time enabled by specialty imaging technologies, and the use of an ontology and linked open data to make information easily accessible for research. Museums' traditional collection catalogues are moving to digital format, allowing novel enhancements, and the museum information professional's efforts can even be invisible but successful if they promote audience participation or a new appreciation for holdings.

KEYWORDS

museums	trends
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outreach services	museum collection management systems

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The Cincinnati Art Museum made a significant move to place a greater percentage of its collection on public display in its exhibition, *The Collections: 6,000 Years of Art* (December 1, 2011-December 1, 2013). To fit roughly 1,730 objects of diverse sizes, shapes and materials within the constraints of the designated gallery space, the museum densely displayed the objects “in open storage – on shipping crates, on racks and in storage cabinets, adapted for visitation. At least one gallery is hung salon-style, with paintings floor to ceiling.” [1] Public displays of museum collections, such as in the Cincinnati Art Museum exhibition, can be sensory explosions of information revealed and experienced.

Revealing Information

The theme underpinning the choice of articles for this special section of the *Bulletin* is museums revealing information, purposefully, routinely, enthusiastically and sometimes dramatically, as with Cincinnati. More specifically, this section takes an unabashedly idiosyncratic look at some of the current thinking and means by which museums are, or might, reveal information related to artists/makers and their works. Each article by this assembly of savvy authors presents a dimension of museum informatics with the common purpose of revealing information so that it can be found, experienced, understood (ideally) and applied or blended elsewhere by others (such as museum audiences and peers).

The information about artists/makers and objects – and their surrounding and evolving contexts – that is of interest to museum professionals and others is immensely varied. It includes commonly held or generally available information (for example, the artist Henri Matisse was born in 1869, and this work by Matisse is a painting) and, most critically, it includes accessible documentation and displays of objects. Whether viewed in person or online

in some fashion, the latter two sources may add context or evidence to what is known about an artist/maker or object.

Consider, for example, what might result from examining a Matisse painting in person, as it is displayed today in a museum or workspace, alongside a cache of digitized photographs of the same painting as it was installed with other objects in 1905, on the occasion of the painting's first public display, paired with a copy of an unpublished interview with the 1905 exhibition organizer reflecting on public reactions to the exhibition. The combination of commonly available, more specialized documentation and visual information may encourage new interpretations of or ideas about the object and its surrounding contexts, such as suggesting that Matisse's works from the early 1900s were or were not radically different from works by his contemporaries and were or were not well received by contemporary viewers. Loosely stated, the information of interest to museum professionals and others is often a non-linear, dynamic mesh of multi-authored information, collected in starts, stops and retreads along the way.

Revealing with Purpose

Use of the word *reveal* is not meant to suggest that the starting position for museums is to lock information away, with “reveals” happening because sharing information is viewed as an afterthought or because information must be pried out. Museums are genuinely motivated to reveal information for a number of reasons (and do so in a number of ways), not the least of which is a commonly held museum mission around providing and expanding public access to collections. The actions of revealing taken by museums may be motivated by commitments to openness around museum plans, processes or decisions about, for example, acquisitions, deaccessions or conservation assessments. Or, reveals may be motivated by an enthusiasm for and an approach to working that supports scholarship and discovery, communicating ideas and/or information about an artist/maker or object in ways that may help effect an “aha – I see a connection” moment for viewers or readers.

Museums record information for audiences, with the information likely playing initially to museum staff or the museum discipline: the information needed to install an object, for example, or a report documenting

examination and treatment of an object by a particular conservator. In-person and online public audiences may follow in the flow of information release because, as authors often do, museums will likely publish an edited, partial representation of what is known to date about an artist/maker or object (which raises the question of how much our displays or representations of information can reveal – or obscure).

Museums reveal information with limitations or constraints. The timing, type and amount of information revealed may have to do with museums exercising care and patience when publishing information, in consideration of their relationships with, for instance, artists/makers, collectors and audiences. The timing and tone of making information public may correspond to the care and patience of museums around communicating information, when museums are viewed as authoritative sources. Reveals by a museum may come with constraints or conditions, as when others own the content and the museum has contracted with the owners (such as authors, photographers or publishers) to use that content. For instance, the availability of content may be limited by the museum to a specific time period or limited to personal, non-commercial use.

Portraits of Museums

Museum work is guided by beliefs and purposes shared across museums, as seen in any number of museum mission statements, job titles and responsibilities, as well as in their advocacy around education, ethics and legislation, to name a few common museum threads and causes. But every museum seeks distinction through, for example, its collections, public programs, research, buildings and branding. We want people to remember *this* place, and their experiences in, with or around it. Museum professionals act locally when engaging in their daily work with a particular collection and within the moving targets of time, people and the needs of stakeholders. Acting locally includes impressing a local spin on choices made around information capture, interpretation, management and release. Generally speaking, however, museums do not demonstrate the kind of spontaneity or heterogeneous expressiveness that might be expected of individuals passionate about working with artists/makers, collections, ideas and audiences. Perhaps there is a sweet spot to be had between the liveliness of a museum's current local identity

(this place and collection and these people at this time) and recognition of the museum discipline – or the cultural heritage discipline – and the meaning that comes from being connected to and situated within a larger, common context.

Assembled Articles

The subjects addressed by the authors in this special section of the *Bulletin* reflect some of the current thinking and means by which museums are moving to reveal something new, something more. The articles cover aspects of the people and motivations and the production, management and application of information that go into revealing information related primarily to museum collections. This special section does not focus exhaustively on the specific requirements that can enable reveals, such as multiple data and technical standards, the varied range of documentation methodologies and every intellectual property concern. While staff and public audiences are persistently present in the articles (given that museums record and reveal information for an audience), this selection of articles did not set out to cover what data collected from audience demographics or audience feedback might tell us about how the public programs of museums, such as exhibitions and publications, are relevant to or have an impact on public audiences. The tone of this introduction is intended to be both celebratory of museums revealing information and hopeful for what is to come. There is room for advancement on the revealing front, and advancement is the essence of the articles assembled here.

Megan Forbes on Developing a Collections Management System for Museums

For many staff, a museum's collections management system (CMS) is one of the familiar and frequent points of contribution, discovery and distribution of information about objects. Museum staff go to their CMS to look something up, draw something out or put something in about objects. The scope and usefulness of information available in a CMS will vary from object to object, museum to museum and need to need. However varied the information (and needs), a common expectation among many museum staff is that a CMS should support activities at the heart of managing and sharing

collections (research, cataloguing, conservation, exhibitions, publications and so forth) and support the management and use of the information generated or gathered by staff engaged in those activities. Because these systems are fundamentally keyed in to what happens in a museum, staff routinely critique the suitability of existing CMSs to adequately, easily and perhaps even brilliantly support current activities around collections and objects, as well as to support a good percentage of the information surrounding the activities themselves.

In her article, Megan Forbes describes a massive collaborative project addressing the suitability factor straight on. Megan provides an overview of the fruitful, community-driven development of CollectionSpace, an open source collections management system. CollectionSpace partners are designing a new CMS from the ground up, with the objective of getting a CMS that weaves easily into the ways in which staff work together and with others – such as artists/makers, collectors or contract conservators – to manage and share collections. Such a system must also support expansion of local understandings of and knowledge about objects, making it as seamless as possible to support all phases of the information life cycle when working on activities central to managing and sharing collections.

To meet these requirements, partners have rooted the CollectionSpace development process in transparency and user-centered design principles, starting with opening up the design process to the community of museum practitioners interested in taking ownership around developing a CMS. Megan reports that responses to participate in CollectionSpace development have been remarkable, and this interest strikes me as an indication of an “enough is enough” moment for museum professionals, recognizing that it's time to take more control over a situation (and system) so integral to museum work.

Paul Marty on Making the Work of Information Professionals Visible

Paul Marty examines how the success of cultural heritage organizations in providing public audiences with easy, abundant and direct access to digital resources – such as information and content related to museum collections – may be making the effort of information professionals in those organizations

to bring about this desirable outcome seem invisible. The conundrum examined by Paul is that the strides taken by museum professionals to make information readily available – at any time, any place – may be encouraging the unintended effect of reducing audience interest in the source of that content and, with it, reducing valuation of the thinking that goes into capturing, describing, organizing and presenting the resources. With the exception perhaps of independent researchers and cultural heritage professionals, how much does a public audience care about how digital resources are crafted, when those resources are easily, abundantly and directly available? As museums make more information available, openly and in different ways, the connection or identity that may be apparent from one-on-one interactions (for example, in galleries) or the phrasing believed important to understanding and using information, may become neutralized or unmoored.

Paul considers how the issue of invisible work might be further complicated by a museum's use of social media to diversify its engagement with audiences and provide access to the content it has crafted. Of course, social media participants will – with or without nudging from a museum – put forth their own content related to museum collections and activities, perhaps getting images and descriptions such as tags or annotations into online gathering spaces before a museum can – or will. This diversity of contributions and perspectives has terrific potential for revealing more and varied ideas and information about museum resources. To both strengthen this potential and to address the invisibility issue, Paul encourages information professionals to have a hand in developing information policies and practices that intelligently support open access and audience participation and that connect digital resources with the identity(ies) of museums. Paul calls on information professionals to be more vociferous and obvious about how our work can increase confidence in the availability and usefulness of resources, lest the thinking and work be taken for granted.

Heather Nodler on Using Video Documentation in Research

Capturing pictures and videos of our life experiences is the norm. On the job, museum professionals are no different in making routine use of cameras. Video is a particularly flourishing methodology for capturing

museum-related situations and events, including making relatively straightforward recordings of panel discussions or interviews with artists, collectors or historians. Video is also used to support (and promote) efforts around exhibitions as a way of, for example, communicating ideas or narratives around artists and their exhibited works. This latter type of video is intended mostly to inform and engage a general public audience, where interest in videos seems high. Museums are responding to this interest by making more museum videos available – with varying degrees of editing – on their websites and in their apps, as well as in aggregation sites such as YouTube and Vimeo.

Are researchers equally enamored with videos as a resource for their work? Heather's article focuses principally on museums producing video as documentation of events like artist interviews and how this type of video might be made more attractive to and useful for researchers. Heather argues that while an abundance of museum video documentation could offer new opportunities for research – for example, around artists and their works – museums must still address access barriers if scholars are to easily spot, cull and use desired information within any one video, let alone from the escalating mass of video content available online.

What makes video particularly challenging (and perhaps invaluable) are the number of approaches one might take in analyzing the content for access. Heather identifies many possible indices for video including the location or setting captured in the video; the physical gestures made by people in the videos; or the narrative arc expressed in words, scenes or edits. Description at this level could help reveal or call out as much of a video's characteristics and meanings as possible. Here, Heather's appeals about reducing access barriers are focused less on addressing the very real technical issues around videos and much more on addressing the challenges of describing video content. One recommendation that resonates is that museums should create an environment that encourages researchers to add descriptions about museum videos to the collective record. Such an approach could bring new and valuable descriptions of video content and help museums chip away at the seemingly fearsome feat of analyzing what is fast becoming an avalanche of video. Heather's call to actively engage

researchers in the description process is reminiscent of actions suggested by Paul Marty in his article for museum professionals to further build relationships among audiences, organizations and resources.

Carla Schroer on Deep Diving into Images

Our ability to read an object – that is, to read its subject or meaning, how it may be placed within different contexts and to register its physicality or presence, among other things – is of obvious importance to museum staff. Careful reading and examination of objects are acts threaded through much museum work, entailing direct engagement with artists/makers and objects and consumption and analysis of distant as well as contemporary recordings related to objects.

Reflectance transformation imaging (RTI) is a relatively new photographic technique that can help us see more of an object and to see it differently. In her article Carla Schroer describes the potential of RTI to reveal information about the material, color and surface characteristics unique to an object – the kinds of characteristics that evolve and accumulate over an object’s lifetime, from production through handling, display and movement across time and environments. The view provided by RTI is an extreme, more-than-meets-the-naked-eye kind of looking at the physicality of an object, such as its brushstrokes, impressions, supports, damages. It is the kind of looking that could thrill researchers as well as a heterogeneous mix of object enthusiasts and learners. Here, Carla centers her explanation of the potential of the RTI technique to support and inform conservation-related activities such as analyzing, comparing and monitoring physical conditions, treatments and documentation of objects.

An RTI digital representation of an object might be distinguished from the still images so common to much museum documentation or from an x-ray, infrared or video recording of an object in that the RTI technique, with special RTI viewing software, gives viewers the opportunity to get a sense of an object’s three-dimensionality. Carla explains the technique and its application in museum settings, underscoring the intended ease with which the technique can be learned and incorporated into a museum’s research and documentation strategies.

In the course of museum work, we return again and again to an image of an object, for instance, to make comparisons or to renew or expand our understandings. The ability to get a sense of the dimensionality of an object, captured at a particular time, and the thrill of deep diving into and across a digital representation of that object will invite return visits to an RTI file. In most cases, it will help us understand what we are looking at. As with so much museum information, an RTI digital representation should be viewed within a larger context of experience and information in order to be understood or to serve its documentation purposes.

Julie Allinson on Making Linked Open Data

This assembly of articles highlights some current ideas and efforts illustrating how museums reveal information. If you follow the trail of revealed information back to its source today, you may very well hit on linked open data. Julie Allinson details how the University of York teamed with Tate Britain and a technology partner in the OpenART project to apply linked open data concepts to an active Tate dataset in order to learn how open data might benefit museums and other cultural heritage organizations.

This particular dataset is about the London art world between 1660 and 1735. The dataset’s author at the Tate maintains the granularly expressed and identified data in spreadsheets. This use illustrates the reality that museum staff use tools beyond their collections management systems to author, collect and relate data in support of their research activities. (All things being nearly equal, it might be interesting to speculate on how the project might have differed had the data originated in a CMS). Julie describes the partner’s approach to making a testbed of open data from the Tate data using the Resource Description Framework (RDF) to help convey meaning about and around the data, outside of the spreadsheets.

But which meaning to convey, when data can be viewed and interpreted from different perspectives, based partly on a reader’s understanding of and intentions or purposes for the data at the moment?

Given the dataset’s subject matter and a minimal project timeframe, partners narrowed the scope to drawing out and conveying event- or activity-based meaning from the data, a meaning possibly benefiting the

work of art researchers, a target audience for the data. As Julie points out, events – such as artwork sales and art catalogue distributions – flow through the dataset. To draw out domain-specific meaning, the OpenART partners developed an events-based ontology to use in modeling and explicitly describing the data around events. Julie stresses the need to continue testing the ontology, given the shortness of the project timeframe and the experimental nature of describing these data from an events perspective, because the same Tate dataset can be viewed through other relationship filters, such as from the view of roles like artists, studio assistants, collectors or dealers. The OpenART project is an apt example of researchers jumping into the data details for an existing, active dataset to see what can be done with the data.

Nik Honeysett on Publishing Scholarly Collections Catalogues

The enhancement of the Tate's London art world dataset with open data through the OpenART project suggests the transformation that can manifest when data is worked. In his article Nik Honeysett discusses a current transformative stage for a particular type of museum publication, the scholarly collections catalogue, an occasional, resource-intensive manifestation of art museum activities. This type of publication is familiar to art librarians, art historians and museum patrons as a curated connection of musings, descriptions, references and illustrations representing some portion of a museum's collection.

What might it mean to change the production of a collections catalogue from activities shaped by the catalogue as a printed book to one shaped by creating and maintaining a catalogue in digital form so that it carries the weight of a scholarly publication? It seems reasonable to think that, in the immediate future, many collections catalogues will emerge first in digital form and may always remain so. Nik pulls back the curtain on what it means for museum professionals and museums to transition from the well-established print production processes to constructing and sustaining an in-house digital publishing environment. Creating this new environment may call for museums to adjust how we define scholarly catalogues; rethink development of the contents, look, functionality and experiences of a

catalogue; and broaden expectations around who is involved in its making at the museum.

The Getty Foundation has supported nine museums – including my home institution, the San Francisco Museum of Modern Art – in exploring and acting on this transformative stage for the scholarly catalogue. Nik writes of the transitioning that is happening at this moment at the Getty Museum – also one of the nine museums – to pilot a process for authoring and publishing this new form. His article describes a measured approach to introducing a new way of doing business, where the familiar values of catalogue authors (for example, that a catalogue be substantive, authoritative, adequately representative of a collection and eloquently written) are supported and the opportunities offered by the comparatively more radically changing technological landscape are tested and designed into the catalogue, when it makes sense.

Like Paul Marty's article, Nik's article underscores how the work of museum professionals – including how we work together – is always transitional. In rethinking the collections catalogue as a digital publication, museums may find that a digital publication involves the participation of a greater interdisciplinary assembly of museum staff than does – or did – a print publication. This broader assembly of staff involved in digital publishing includes expertise in data and content management and use, which implicates the role of internal museum information systems within this new practice. These systems include museum collections management systems (the CMS), many of which are not fully or easily equipped to completely support the publication of a scholarly catalogue (whether printed or digital). As we mentioned above, the CollectionSpace project, described here by Megan Forbes, is taking a fresh, comprehensive look at how a CMS can best support museum work, which includes publishing. Nik's article suggests the potential of transitioning to a fully data-driven publication process, where data and assets – such as those related to artists/makers, objects and contexts – might be easily and reliably carried from a CMS – and other information and asset systems – through the overlapping stages of authoring and designing, delivering, updating and sustaining digital publications. Here, Nik sketches out the testing of a

WHITE, continued

technical solution at the Getty, where the functionality of the museum's current CMS is being augmented (but not now replaced) in order to get closer to publishing data directly from the CMS (and other sources) to a variety of targets, including digital scholarly catalogues.

But You Should Read the Articles

When you think "museum," what do you think of? Are museums places of contemplation and learning, places to be challenged and wowed, places to experience and in which to participate? I hope the idea for this special

section – museums revealing information – encourages thoughts of museums being places where something new, something more happens. I know you will find something new and more in the work of the authors assembled here. ■

Resource Mentioned in the Article

[1] Dobrzynski, J. H. (December 1, 2011). Cincinnati digs deep into storerooms for new "open" exhibition [blog post]. *Real Clear Arts*. Retrieved January 2, 2012, from www.artsjournal.com/realcleararts/2011/12/cincinnati-storerooms.html.