Hubertus Kohle

The Museum Goes Collaborative: On the Digital Escapades of an Analogue Medium

The Museum as Compensation

We like to think of museums as places of refuge from the hustle and bustle of everyday life, as opportunities to focus on essentials away from our constant multitasking at work and home, and as moments of truthfulness in contrast to the simulation that is unavoidable in today’s world of electronic media. The notion that art and culture are forms of compensation for the acceleration of modern life is a fundamental premise of an influential cultural theory as expounded by the so-called Ritter School. Those who share such views will wonder in astonishment why we should now be introducing a digital dimension into the museum of all places. Yet we have been doing just that for years – and not just in esoteric technophile circles. In one form or another, electronic media are already found in the museum, too. Why?

What is proper and what is not is something that changes – like all such oppositions – over the course of time. The fact that genuine wisdom was communicated through manuscripts, for example, was reiterated all the more emphatically at the moment when the printed book became a threatening alternative. It was similarly felt that true connoisseurship of art could only be conveyed via the original, or if need be through a print reproduction. When slides began to be used in art history lectures in the late nineteenth century, many people considered it a betrayal of art. Today we are dealing with a particularly dramatic change, namely the ever-greater displacement of the analogue by the digital. It is understandable that, at this point in time, the substantial, tangible quality of the analogue should seem to us right and proper in contrast to the digital, whose nature as fleeting illusion renders it almost morally dubious. In this constellation, the printed book, once an agent of corruption, becomes a lifeline, and the slide suddenly a quasi-original, although when it first appeared it was perceived as the very opposite.

If reality itself is changing at a great speed, the memory of what it once was should be preserved in the temples of our museums, at least. The problem, however:

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1 See e.g. Hermann Lübbe, Zeit-Verhältnisse. Über die veränderte Gegenwart von Zukunft und Vergangenheit, in: Zeitphänomen Musealisierung. Das Verschwinden der Gegenwart und die Konstruktion der Erinnerung, Essen: Klartext, 1990, pp. 40–50.
2 I wish to thank Dr. Christian Gries, the real expert on computer science in the context of the museum, for his input into this paper. I have already had the pleasure of discussing with him the topics addressed here on numerous occasions in seminars at the Ludwig Maximilian University in Munich.
for today’s twenty-year-olds, whose lives are already profoundly pervaded by new media, this conflict between analogue and digital is no longer as acute. And for those born today, it will perhaps no longer even exist, because for them, looking at analogue objects will have become the exception in a thoroughly virtualized present. The still accelerating pace of change means that the future holds challenges and fears even for members of the young generation. Given that their present has been imbued for so long with new forms of digital communication, however, we can confidently assume that these will be what they perceive as valid and proper and what they seek to uphold in the face of what may be coming next. In this respect, it is by no means necessary to reject the theses of the Ritter School, but rather historically to adapt them, as it were.

Tired Museums?

In Germany, the success of museums is phenomenal. It is happily emphasized that more visitors make the pilgrimage to museums than to football stadiums to watch German national league games. In 2012 the total was 113 million people. But every museumgoer cannot help but notice that, among these visitors, most fall into an older age group, with younger visitors rather fewer in number. If we except museums typically visited by tourists and fancifully designed and promoted special exhibitions, younger visitors are clearly in the minority. Following on from what we suggested at the beginning, this situation may also be connected with the fact that museums are perceived by young people as too far behind the times; in other words, a quality savoured by older visitors is considered boring by the upcoming generation. Publications such as Müde Museen (Tired Museums) by Daniel Tyradellis may be seen as symptomatic of this. Why not therefore accept digital media as an intrinsic part of daily life for younger people and incorporate them into what goes on inside the museum? The question is simply: How?

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3 Staatliche Museen zu Berlin – Preußischer Kulturbesitz, Institut für Museumforschung (ed.), Statistische Gesamterhebung an den Museen der Bundesrepublik Deutschland für das Jahr 2012, vol. 67, Berlin: Institut für Museumsforschung, 2013, p. 7.

4 Daniel Tyradellis, Müde Museen. Oder: Wie Ausstellungen unser Denken verändern könnten, Hamburg: Ed. Körber Stiftung, 2014.

5 See in general on this subject G. Wayne Clough, Best of Both Worlds. Museums, Libraries, and Archives in a Digital Age, Smithsonian Institution 2013, http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf (accessed 11 February 2015); Herminia Din, Phyllis Hecht, The Digital Museum. A Think Guide, Washington DC: American Association of Museums, 2007; and Werner Schweibenz, Vom traditionellen zum virtuellen Museum. Die Erweiterung des Museums in den digitalen Raum des Internets, Frankfurt/M.: Deutsche Gesellschaft für Informationswissen und Informationsspraxis e. V., 2008.
The Museum Going Digital

According to common definition, a museum collects, documents, researches, conserves, and presents. The digital has already made its entry into all these areas of activity. Collectors in museums, firstly, can no longer get around the fact that auctions in the early twenty-first century are usually accompanied by online catalogues and indeed in many cases take place entirely over the Internet. Meanwhile, the possibility of targeted searches on the Internet makes the hunt for suitable new acquisitions significantly easier, not least since many of the commercial auction houses have online catalogues of excellent quality. Secondly, museums document and inventory their holdings if at all possible in the form of digital databases, if only because these can be made to serve a very wide range of purposes – right up to preparation as a printed publication. The digital sphere as a research medium, thirdly, currently still plays a subsidiary role, but the potential of electronic-based direct image addressing seems immense. It goes without saying that the search for information, as a core element of research processes, is today conducted by computer almost as a matter of routine. In the area of art conservation, fourthly, the fact that the most minute surface changes can be detected and documented with the aid of high-resolution digital imaging techniques (to cite but one example) is of enormous significance. This can have political as well as practical consequences. And in the case of presentation, fifthly, the Internet undoubtedly plays a crucial role, since it is able to take us past the (in places still very high) walls that enclose museums, or can at least provide easily accessible practical information for visitors, which is why there are few museums today without their own Internet presence. It is this last area that I wish to focus on in particular detail.

The Activation of the Museum Visitor

We may start by making the general point that digitally-based results from the areas of collecting, documentation, research, and conservation can also be used in presentation, since they can be converted without great effort into a customized external display. Thus digital inventories can be easily transformed into an Internet presentation and thereby adapted in such a way that sensitive data for internal use only,

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6 Hans Lochmann (ed.), Standards für Museen, Kassel: Deutscher Museumsbund e. V. together with ICOM-Deutschland, 2006.
7 An example is auctionata, an online auction house based in Berlin that has recently attracted much attention. See www.auctionata.com.
8 See e. g. the works of Lev Manovich, http://manovich.net/(accessed 11 February 2015).
9 Andreas Burmester, Manfred Müller, The Registration of Transportation Damage Using Digital Image Processing, in: Zeitschrift für Kunsttechnologie und Konservierung 6 (1992), pp. 335–345.
for example, can be hidden. A fundamental rule with regard to working with digital media can be seen right here: the fact that it can be converted into all possible formats means that, if you are interested in making efficient use of your resources, databases should be the primary material from which you start.\textsuperscript{10} As long as paper remains the dominant medium of distribution, all discussions about an electronic-based art history focus upon the issue of conversion into digital. Strictly speaking, however, it should of course be the other way round: the digital file as the most universal medium ought to stand at the head of the value chain. To stick with our chosen example: in my Internet presentation, let us say that I add a low- to medium-resolution reproduction to my dataset and hide everything else relating to the internal use of a work, such as the number of times it has been loaned and the corresponding dates. On another occasion, however, I return to the same material but use it in a different way: this time I am compiling a scholarly catalogue of the collection or an individual artist, and so I include the information about the loans. In the case of an exhibition catalogue, I might add a series of essays focusing on the subject of the show – and so on. Instead of having to start all over again each time, as more often than not is probably still the case right now, large parts of the work can be based on existing material that simply needs to be formatted and combined in new ways. It is important to note here that, in order to re-use data in this fashion, the electronic files need to have been created according to proper data entry standards, since otherwise technical problems will repeatedly occur upon conversion. All such standards must be understood at this point as aids to the subsequent ease of handling the data and not as a restriction upon individuality. From this it is also clear, however, that a museum needs to develop and hold internal discussions on a professional digital strategy. The days of the proliferation of individual solutions provided by solitary computing enthusiasts should be firmly behind us.

A very interesting use of electronic museum inventories is presented by Mia Ridge, who has applied big data analytics to the data of the Cooper-Hewitt Museum in New York (fig. 1).\textsuperscript{11} Rather than searching the database for an individual dataset, as we do when we look for a specific picture that interests us within a large digital image library, big data analyses take the entire contents of a database and interrogate the information for its inner logic. The process has been a regular topic of debate for several years and makes most contemporaries uneasy, since with unregulated use it goes far beyond anything envisioned by George Orwell in 1984 and could destroy all forms of privacy. From an academic point of view, however, big data analytics has huge potential. In the case of the Cooper-Hewitt, for example, Ridge was able to date peaks

\textsuperscript{10} Even conservative scholars who would never think of considering digital media an essential area of academic production today write their texts on a computer as a matter of course.

\textsuperscript{11} Mia Ridge Explores the Shape of Cooper-Hewitt Collections, http://labs.cooperhewitt.org/2012/exploring-shape-collections-draft/ (accessed 11 February 2015).
in collecting activity with great precision and illustrate shifts in the prioritisation of particular genres by correlating acquisition date and type of object. The advantages of such big data analyses are naturally most evident in the realm of big numbers, where more conventional tools quickly reach their computational limits. When it comes to visualizing results, moreover, large databases of this kind offer advantages that imply a fundamental change in the relationship between provider and user under digital conditions – including in the museum context. Thus the parameters of a big data analysis of the kind described here can be set by users themselves. Assuming that the corresponding data are available, users interested only in carpets can limit their analysis to these and can narrow it down even further to solely the years 1930 to 1940. By systematically exploiting this digital tool, users thus become active participants instead of passive recipients. This seems to me a shift whose significance cannot be overestimated and which perhaps causes some of those working in a museum environment to feel threatened. It indicates a coming change in the role of the museum curator, namely from the status of unassailable preceptor to the position of moderator, engaging with increasingly emancipated users.
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Ridge’s shrewd account of her experiences at the Cooper-Hewitt also underscores the importance of standardisation in data entry. Databases have their own history and are built up over time by very different individuals. Where these latter have added annotations of their own according to personal fancy (or cultural make-up), these entries need to be cleaned up in order for the computer to be able to analyse them. While sceptics are quick to denounce such smoothing processes as an erasure of the past, it is precisely here that another fundamental advantage of the digital sphere comes into play, albeit one frequently not taken into account. The practically unlimited volume of memory at our disposal means that it is always possible to save modifications to primary products as a separate version, rather than overwrite the original and so destroy it. In this respect, seen in the long term, a historicization is possible at two levels: that of the annotated objects and that of the annotators. History and the history of science in this way overlap.

It is no coincidence that my next example, in which I analyse electronically presented museum inventories for their added value, also concerns an American museum. Rather, it reflects the fact that the museums in the Anglosphere are considerably more advanced in terms of their digitization. The Brooklyn Museum, likewise housed in New York, is one of the largest universal museums in the world, even if it is substantially less well known than its neighbour, the Metropolitan Museum. For several years now the Brooklyn Museum has been pursuing a highly innovative strategy with regard above all to presentation, one that systematically focuses not only on the representation of its holdings but on incorporating the reader and potential visitor in a productive manner – very similar to the case of the Cooper-Hewitt Museum mentioned above. Here, too, the idea is that the reader/visitor should no longer remain a purely passive consumer, but become a producer. This becomes clear at a series of levels. On the ‘Collections’ page introducing the online collection, readers are invited to contact the museum, via an active link, with any information they may have in connection with any of the objects they see on the website, while on the individual ‘Object’ pages, the completeness of the record is given as a percentage.\textsuperscript{12} We should namely not rely all too greatly on the accuracy and completeness of the data entry, something not altogether surprising given that there are over one hundred thousand objects in the online collection. The same applies just as much to a printed catalogue, but Internet data is especially fluid, incomplete and always part of a work in progress – precisely because it is so easy to modify and bring in line with the latest state of knowledge.\textsuperscript{13}

\begin{footnotesize}
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\item \textsuperscript{12} Collections page: http://www.brooklynmuseum.org/opencollection/collections/; example of an ‘Object’ page: http://www.brooklynmuseum.org/opencollection/objects/4674/The_Equestrienne_La-Mazon (accessed 11 February 2015).
\item \textsuperscript{13} See Hubertus Kohle, Social Tagging in the Humanities and the Nature of the Internet Work Flow, in: \textit{Kunstgeschichte Open Peer Reviewed Journal} (2011), http://www.kunstgeschichte-ejournal.net/229/ (accessed 12 December 2014).
\end{enumerate}
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framework of an experiment (now finished) at the Brooklyn Museum on social tagging, visitors were also invited to tag art works, with a view to facilitating future searches for them. The idea behind this application was that visitors themselves are probably most likely to know what other visitors are looking for. And last but not least, visitors can even get involved in creating entire exhibitions, as is the case of *Click!*, an exhibition of contemporary Brooklyn photography (fig. 2). Here, too, it is true to say that museum specialists are losing their status as sole decision-makers and are assuming the role of mediators who take into account the views of the public.

**Frankfurt’s Städel as a Paradigm**

As already stated, German museums have been somewhat reticent when it comes to making bold use of digital media. Among the few exceptions are the Städel, the Schirn, and the Liebieghaus museums, all in Frankfurt and, until very recently, all under the direction of Max Hollein. In what is overall a very conservative environment in which technology is treated with suspicion and variously considered to signify unwarranted modernisation, a dumbing down, a form of exploitation, and a means

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14 http://www.brooklynmuseum.org/exhibitions/click/(accessed 11 February 2015).
15 Of interest in this context are the tables at http://www.museum-analytics.org, where German museums rank among the “also rans” when it comes to social media presence.
16 This article was written in 2014. Max Hollein has left the Städel in 2016 and now works as the director of the San Francisco Museum of Fine Arts.
of estrangement, Hollein stands out, attracting disdainful glances at times with his relatively affirmative relationship to reality as it presents itself at the beginning of the twenty-first century. His entire programme of digital initiatives is, however, based on thoroughly traditional values. He understands the museum first and foremost as an educational institution that must fulfil its mission on-site – but not on-site alone. And depending on where this mission becomes pertinent, he adapts the means accordingly. For the museum itself, this signifies concentrating on the original work and emphatically renouncing high-tech frills such as monitor images inside the gallery – in other words, in the direct vicinity of the art works. But this is also attended by boldness and a certain trust in the sometimes wacky possibilities offered by the Internet as a place of education and cultural production. We might mention in this context an action that even prompted a recourse claim (although this, too, was perhaps part of the publicity he wanted to generate). On the occasion of the 2011 Kienholz exhibition at the Schirm, Hollein had QR codes spray-painted on the streets of Frankfurt. When photographed with a mobile phone, the codes linked the viewer to the corresponding page of the museum’s website, but they could only be removed from the streets with a considerable degree of effort (fig. 3). The German tabloid BILD carried

Fig. 3: QR code for the 2011 Kienholz exhibition at the Schirm Museum, spray-painted on a Frankfurt pavement.

17 See the press release On the Way to the Future – The Städel’s Digital Extension (2014), http://newsroom.staedelmuseum.de/system/files_force/field/file/2015/st_press_digitale_extension_engl.pdf (accessed 11 February 2015).
the headline “Illegal Guerrilla Graffiti. Schirn Sprays All Over Frankfurt” and sanctimoniously asked what the museum thought it was doing. The answer is of course obvious and points to a thoroughly professional handling of today’s media society, in which organs such as Bild sadly also dominate.\textsuperscript{18}

As an art historian who is also a business economist (less well-disposed critics put it the other way round), Hollein knows that the bait must taste good to the fish, not to the angler. He seems to have recognized at a very early stage that digital media can play a crucial role in precisely this regard. In 2015, the year in which the Städel Museum Foundation celebrated its two-hundredth anniversary, this strategy found expression through a concept of which not all individual components have been realised so far. These are impressive in themselves, however. They include online tutorials to accompany exhibitions, art-based computer games for children, access to the museum holdings via an entirely new digital platform, and participatory tools for online visitors as well as electronic-based merchandising products. These are joined by the full range of social media, which are here used to engage visitors in a particular virtuoso fashion.

Keeping the Museum in the Public Eye

In the visual sphere, the consequences of digitalization are apparent above all in today’s breathtakingly fast and widespread proliferation of images, to which scholarship has reacted, for example, with the much discussed concept of the “iconic turn.”\textsuperscript{19} This process of acceleration is naturally linked with the ease with which images can now be duplicated with no loss of quality, something previously reserved for written documents. Where traditional museum managers focus on limiting the availability of such images so that visitors are obliged to come to the museum if they wish to see a particular artwork, digitally-conscious modernists prefer the opposite. They argue that a museum, as home to the original, need not fear that duplication will render its own existence superfluous but should actively exploit the possibilities it offers: only by spreading knowledge about an object can the museum fuel the desire in our media-based society to experience the original firsthand. The Rijksmuseum in Amsterdam has become a leader in this regard by inviting readers to download a high-resolution image of a work from its holdings and manipulate the image to effectively create a new artwork (fig. 4/pl. XVI).\textsuperscript{20} Attention: here, too, the user is empowered to assume an

\textsuperscript{18} Stefan Schlagenhaufer, Illegale Guerilla-Graffiti. Schirn sprüht Frankfurt voll, in Bild (Frankfurt/M.), 17 October, 2011 http://www.bild.de/regional/frankfurt/graffiti/schirn-sprueht-frankfurt-voll-20490338.bild.html (accessed 9 February 2015).
\textsuperscript{19} See e.g. Christa Maar (ed.), Iconic Turn. Die neue Macht der Bilder, Cologne: DuMont, 2005.
\textsuperscript{20} https://www.rijksmuseum.nl/en/rijksstudio/instructions (accessed 9 February 2015) (“Start your own Rijksstudio”).
active role, and indeed one that is expressly artistic. Hollein is aiming at something similar (albeit without allowing for further image processing) by creating a print-on-demand service in conjunction with the German drugstore chain dm-drogerie markt (!), at whose stores the public can order reproductions of works from the Städel. The financial returns of such actions are perhaps less significant than the opportunity to keep the museum in the public eye, to establish it even more firmly as a brand, and to do everything possible to ensure that, when it comes to planning leisure activities, the Städel is firmly on the horizon. Such an intention falls wholly into the Frankfurt tradition of “culture for all,” as proclaimed in true Social Democratic fashion by Hilmar Hoffmann, the legendary city councillor for the arts. In this respect it lends an interesting twist to the venture, given that Hollein is usually suspected of being an ally of Frankfurt high finance.

The very idea of carrying the museum into the world of commerce may seem like a sacrilege to some, although it is of course by no means a new one (and one not confined to printing posters, either). And it may certainly also be disputed whether the Städel’s dm-drogerie markt action really has much in common with the emanci-

21 http://www.dm.de/de_homepage/foto/443286/kunstwerke-fuer-zuhause.html#/uebersicht (accessed 11 February 2015).
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patory aims of a cultural policy inspired by social democratic ideals. But it would be quite misleading to reduce Hollein to one such undertaking alone, since other digital projects at the Schirn and the Städel are aimed much more clearly at fulfilling the educational brief already mentioned. From a technological point of view, the online “digitorials”, as they are called, are relatively conventional (fig. 5). They are intended as a means of preparing for visits to exhibitions, with high-quality content that can be quickly absorbed. In terms of presentation, too, they are fairly sedate, even if the Schirn website talks about “an innovative form of storytelling.”22 The digitorial still available (as of February 2015) on the Finnish painter Helene Schjerfbeck impresses with the professional quality of the illustrations but delivers a narrative that could conceivably be taken from the pages of a book – although this is not to detract from

22 http://schirn.de/en/DIGITORIAL.html (accessed 11 February 2015).

Fig. 5: Digitorial accompanying the Helene Schjerfbeck exhibition at the Schirn in Frankfurt, 2014.
the artist, truly an impressive new discovery in Germany. It remains to be seen how these digitizations evolve in the future.

The new image database, in development over the past few years, is actually much more than that and essentially represents a complete multimedia platform. It takes a thoroughly original shape, having been conceived right from the start not just as a scholarly inventory but also to fulfil an educational purpose. This “digital exhibits platform” is not just a tool for searching the collections using the standard terminology of art history; it also allows visitors to make searches based on personal feelings. Artworks speak to contemporary viewers in the first place through their emotional dimension, even if their art-historical status does not necessarily match up to their popular appeal. The Städel is correspondingly endeavouring to make its holdings accessible from this angle, too. Fritz Böhle’s painting from the early twentieth century might thus be tagged not only as “Crucifixion” in accord with its correct iconographical description, but also as “grief,” the emotional state it visualizes so forcefully. Puvis de Chavannes’ imaginary portrait could likewise be tagged not only as “Mary Magdalene” as regards its subject and “vanitas” as regards its iconographical association, but perhaps with “goosebumps” – a feeling that the sight of a beautiful woman with a skull in her hand might produce in a young viewer perhaps no longer so well versed in the Bible. Even if the experiences in crowdsourcing platforms with regard to the naming of emotional qualities in artworks are not especially encouraging, we may nevertheless wonder why the Frankfurt museums are (only) letting paid professionals do the tagging and not (also) members of the lay public, at whom the whole project is ultimately aimed. This might be due to a certain fear at their own audacity or – more likely – time constraints, since the products were scheduled to be rolled out at a very specific date in 2015.

Such efforts to adopt the latest tactics in bringing art up to date usually prompt experts to sound a note of caution and warn against trivialisation. In a slightly different form, however, the possibility I have already mentioned exists here, too, namely not to overwrite “older versions” with more recent findings but to keep both side by side. The scholarly, philologically precise designation of a picture is simply complemented, not irrevocably replaced by one that speaks more directly to the public. To put it another way: I can find Puvis des Chavannes’ St. Mary Magdalene in the Desert not only by searching under “goosebumps”, but also under “vanitas”. Such multi-perspectivity can be confidently seen as a key characteristic of digital media.

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23 This system has been tested for some time at the Städel in the shape of a media table – a huge touchscreen monitor on which visitors can find out more about the collection’s holdings.

24 This author knows from personal experience with the tagging game artigo (www.artigo.org) that fellow players are reluctant to tag artworks with emotional qualities. This does not mean, however, that they are not perhaps looking for such qualities. The games probably need to be structured more clearly so that they provoke the naming of feelings.
and is ultimately always found where a multitude of different interests need to be served in a single place. This is precisely the objective that ought to form one of the central tasks of the museum as an educational institution.

Demystifying the Museum in Social Media

The Städel has been running a blog since 2011. In comparison to other blogs and in particular those by museums, which are striking above all for the irregularity of their posts and the somewhat haphazard nature of their contents, the Städel blog follows a strict structure and a clear aim (fig. 6). In contrast to the reams of text found in other types of online blogs, too, the individual articles are richly illustrated. Most entries are categorized under the three epochs of art history represented in the Städel: Old Masters, Modernism, and Contemporary Art. Recommendations for books that are only loosely connected with the museum are offered under “Tipps” (Tips), indicating

Fig. 6: The Städel blog (published in German only).

25 http://blog.staedelmuseum.de/(accessed 10 February 2015).
that here, too, the museum aims to serve a general educational purpose. The same is true of the pages devoted to “Veranstaltungen” (Events). “Hinter den Kulissen” (Behind the Scenes) is particularly interesting, as it humanizes the museum, as it were, by portraying it as a place where people work and less as a shrine. “Bewegte Bilder” (Moving Pictures) introduces short videos on exhibitions and new acquisitions, and “Ohne Schublade” (Without a Drawer) is the category for everything that doesn't fit anywhere else. Regular discussions on the “Works of the Month” give the blog structure, and there are likewise regular interviews, often with the curators. It seems, for the moment at least, that the Städel has not managed to educate its curators to become bloggers themselves, which should actually be the real aim. The blog is also used in cross-media fashion to refer to other channels, including web films that are evidently produced with considerable care and effort and which can be streamed via YouTube. Here, too, the atmospheric soundtrack, the systematic embrace of the latest forms of communication, and the wrapping of the educational experience in an enjoyable packaging will not please every traditional museumgoer. But this latter group will come anyway, and museums that want to appeal to new strata of visitors must also do so with new means.

Twitter and Facebook are likewise media used by the Städel in skillful fashion and with great effectiveness. Although it is true that the museum’s almost ten thousand followers on Twitter and some twenty-five thousand likes on Facebook are modest compared to the numbers boasted by large American museums (the Metropolitan is slowly but surely approaching the millions on Twitter), they are still large when set against those of more conservative museums such as the Bayerische Staatsgemäldesammlungen, whose Twitter followers have not yet reached two thousand (fig. 7). Frequently suspected by those operating in the cultural sector of being no more than a chat medium, Twitter undoubtedly offers considerable possibilities when intelligently used, including as a channel for up-to-the-minute information. The Städel’s tweeters thereby use the full spectrum of opportunities, from announcing exhibitions and lectures and then accompanying them with intensive tweeting, to tweets from behind the scenes while exhibitions are being set up. The same is true of the museum's Facebook posts. The formerly sacred site is here fundamentally demystified and becomes a place where culture is produced. But here too it should be stressed that all of this takes place with no intrusion upon the museum’s actual holdings. It is simply a matter of opening up additional channels of presentation whose reach goes beyond the museum. These levels might be said to converge most when visitors tweet during a guided tour of an exhibition, as in the case of a live tweetup, when the museum itself becomes a place of discovery through discourse – but that is what it is during a guided tour anyway. The Städel has already built up substantial experience with this

26 https://www.facebook.com/staedelmuseum; twitter: @staedelmuseum, @schirn, @liebieghaus (accessed 12 February 2015).
very new format, and at its tweetup in November 2013 during the Dürer exhibition, seven hundred tweets were sent by twenty-two twitterers.\textsuperscript{27} Bearing in mind that all these twitterers have their own followers, some of whom will re-tweet and so widen the network yet further, it is not difficult to imagine the number of individuals that such media can reach and the publicity this generates – a factor that plays a major role in Hollein’s programme.\textsuperscript{28}

\textsuperscript{27} http://blog.staedelmuseum.de/blick-hinter-die-kulissen/mit-smartphone-zum-tweetup-in-die-durer-ausstellung (accessed 11 February 2015). As evident on this page, blog and tweet are media that can and should be used to cross-reference each other.

\textsuperscript{28} Websites such as http://tweetreach.com furthermore offer precise analyses of how far Twitter messages travel.
Conclusion

I have here described two effects of digitalization in particular as being of consequence for museums. Firstly, walls that were previously very high between the institution and the public are broken down. Secondly, visitors are placed in a new role of active participant from the moment they start using the electronic medium. What this means for the museum is that it must welcome visitors (also) as producers and no longer only as recipients. There is much to suggest that only such a change of heart will secure the role of the museum at the flourishing centre of cultural life.