

What makes a great [mobile | digital] art exhibition?

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***Abstract:** Passive reception and consumption of art is a given, in our times. Artists produce. Spectators consume. At the nexus stands the curator who chooses the produce and the exhibitor who provides the space for consumers. This natural hierarchy also tends to colonize the digital space. But, in the digital world, much of the functioning of the hierarchy has become democratised. The meeting place of exhibited art moved from the physical to the virtual online. Not everyone can visit, say, Istanbul Modern museum. It ought to be possible in principle for everyone to be able to visit “Istanbul Modern Digital” museum. The next stage of digital democracy, already upon us since early 2010, is the mobile art lover, mobile in the sense of being free from being tied down in one place and being able to choose what to see, where to be, and when to do it: early morning, late at night; in the plane, on the train, in bed, in class.*

Learning is for everyone. It is what make us human, to continue to learn. Learning takes place best when one is active. In the context of the Mobile Digital Art Exhibition, we have explored ways in which to enhance the experience of the curator as “everyman” and everyman has potentially the opportunity to construct a mobile digital art exhibition, even one such as the “Museum of Innocence” in the manner as described by Orhan Pamuk.

***Keywords:** Flickr Gallery, GoGo, mobile device, Museum of Innocence, QR code tag.*

Introduction

In the modern world of the digital cultural heritage, it is to be taken for granted that one will want/need to organize an exhibition, to show off some particular collection of art works. There are three principle types of such exhibitions. The first type is organized along classical lines. The art works are arranged in a physical space. Often such a space is a building, an art gallery for instance. The Trinity College Dublin (TCD) Art Collection was recently exhibited in such a manner. But is also possible to arrange an art exhibition outdoors, widely distributed in an unconfined physical space. Thirdly, in our times, one can facilitate a mobile digital art exhibition (**MDAE**), accessible to any interested party, with the right technology, anywhere in the world. A fundamental research question for the (self-) curator of such an MDAE is simply this: How can I prototype my ideas and get feedback? A second fundamental research question is at the heart of this paper: How can I facilitate and augment self-curation in the mobile digital world? For example, one might imagine a graduate/staff member of TCD who participated in the TCD College Art Hire Scheme [1], wishing to self-curate those works of art which formed the backdrop of her/his academic life time in the College. This, of course, can only be done via the (mobile) digital art exhibition.

One can see how this fundamental idea extends to all those who ever visited an art gallery, bought exhibition catalogues, marked mentally/physically those works to which they were attracted and who would dearly love to have the facility to look over them again. Such a person potentially belongs to that category of the digital art self-curator. The technology now exists to make such (mobile) digital art self-curation a real possibility. En passant, it is noteworthy that the recent magnificent Gauguin Exhibition – “Gauguin: Maker of Myth”, in the Tate Gallery London, turned out to be, for some, a complete disaster, leading to a neologism: “Gallery Rage” [2]. One could also

imagine a visitor to the Gauguin Exhibition having a personal MDAE selection with her/him and an indication of current crowd size around any specific piece at any given place and time. This might facilitate access to the artwork and avoid what has been termed “art kettling.”

Our current research follows on directly from the work done in an earlier paper concerning 4 Art Galleries presented under the theme of “Social networks and the national art gallery (Dublin | ... | Sofia)” [3]. The galleries in order, were “The National Gallery of Ireland” [NGI] (Dublin, Ireland) [4], “The National Art Gallery” [NAG] (Sofia, Bulgaria) [5], “Museo Nacional el Prado” (Madrid, Spain) [6], and “The Ateneum Museum” (Helsinki, Finland) [7]. Of these, the NGI did not afford any opportunity for the folk on the WWW to see the full range of the digital images of the art collection (April 2010). Now, one year on, the NGI compares well with state of the art digital facilities worldwide. However, in the context of an MDAE, there is much yet to be done, and we will *assume* that any remarks made, may apply, *inter alia*, to the Ateneum and El Prado. Our discussion on MDAE will apply to all four galleries, precisely because of the nature of “state of the art” digital art galleries in 2011. On the other hand, there has been no apparent change in the digital status of the NAG in Sofia. We will make some suggestions on how one might make the leap from the NAG status quo to some sort of rudimentary MDAE. Paradigmatically, this will apply to all others.

Another fundamental issue is the determination of the nature of a mobile device. That said device is mobile, i.e., can move around (whether autonomous or not), is a given. But, in the context of this paper, the mobile device must be able to connect to the internet wherever it finds itself, whether on the move or at rest. For example, any laptop, such as a MacBook Pro is by definition such a device. On the move, say on a train, the aforementioned device can connect to the internet, if *tethered* with an iPhone. The concept of tethering means that the mobile phone (such as the iPhone) provides the internet connection (3G) to the laptop (such as the MacBook Pro). The iPhone and iPad are, by definition such devices. Such interconnecting of multiple mobile devices determines the platform for total stability of mobile dynamically digital self-curated (and not only) art exhibitions. We will have more to say on this matter of mobile device later in the paper.

Curator, Curation

One of the significant prototyping tools for the would-be mobile digital art curator is the Flickr Gallery [8]. The Flickr developers “specifically limited the number of photos ... that can be added to each gallery to 18 ... [in order] to give our members an opportunity to engage in activity that is similar to what a curator of a gallery or museum might undertake.” To illustrate this significant, and easy to use, Gallery feature we have constructed three such galleries, one with the title “EIPub2011 Mobile Digital Art Exhibition,” the second with the title “EIPub2011 National Gallery of Ireland,” and the third with the title “EIPub2011 The Museum of Innocence” [9]. The mechanics are simple: “To create a Gallery just go to a photo or video that you want to add and click the “Add to a gallery” link within the Actions menu. From here you can create a new gallery or add the image to an existing one.” However, the would-be curator clearly needs some idea, some theme, even to begin. There are millions of fotos on Flickr. Let us there is a Flickr account and one is administrator for the “ЖЕНА (woman) pool.” At the time of writing, there are around 1113 members and 13,220 photos. To construct a well-themed “Gallery Exhibition of 18 images” from such a pool is a daunting task. One needs to have some significant guidelines on how to choose those 18 images. Naturally, if the images are well tagged, and captioned, then curating an exhibition is feasible. A good starting point for the would-be curator is the essay “Show and Tell” by Robert Storr, artist and critic who serves as dean of the School of Fine Arts at Yale University [10] p.172.

group exhibition: “Selection is the initial, and, in many ways, the touchiest, stage...” [11] p21.

Shall we pick the photos from one individual Flickr-ite or shall we pick one photo from 18 Flickr-ites in the group according to a specific theme or idea? How shall we find the 18 photos among the 13,220? A typical gallery might feature “woman as dancer” [12]. Clearly, if the photos are tagged appropriately with “dancer”, (“танцьорка” in Bulgarian), then we have a much smaller pool to choose from. Currently, on Flickr, there are 92 photos tagged with танцьорка and 1,177,382 photos tagged with “dancer”. One does not presume that English is to be the sole linguistic access mechanism. “Google translate” does a reasonably good job of translation for a large variety of languages and in the first stage of our research, translation of typical Flickr tags is more than adequate. However there are other technical issues still to be resolved. Currently, at the time of writing, the Flickr app for the iPhone, does **not** recognize the Bulgarian tag “танцьорка.” Nor does there seem to be a way in which to view a Flickr gallery on the iPhone. One presumes that this is also currently the case with the iPad. It is clear that the first wave of certain apps for mobile devices are crude from the point of view of universal (language/feature) access in comparison with the apps for laptops. On the other hand, Google Goggles (GoGo, a useful needed neologism with collateral signification) is now built into the Google search app for the iPhone (and presumably for all other mobile platforms). One takes a photo of an image such as might be found in an Art (Exhibition) Catalogue or online, say Flickr. GoGo then analyses the image and returns the result of an internet search. Either an exact match will be found or, even more interestingly for our purposes, other images which match certain criteria. For example, using GoGo to photograph the image of

“Virginie” (1883) by Albert Edelfelt [3, 13], from a catalogue will return online versions and other related material. But we can do much better with the GoGo technology, as will be explained later.

showing is telling: “The primary means for ‘explaining’ an artist’s work is to let it reveal itself... Space is the medium in which ideas are visually phrased” [11] p23. This forthright principle has been put into practice by devising a simple online exhibition (hosted on Flickr) whereby only the image is shown [14]. All other telling aspects are only accessible by means of a **Quick Response (QR)** code tag [3]. The original precursor for such a QR tagged exhibition was a 3 person team MSc Research Project, with the title “Smartphones Let Loose - The Museological Potential of Wireless Technology” [15]. For a variety of reasons, the experiment/exhibition had to be conducted in the Lloyd Building of Trinity College Dublin. Full high-resolution prints of a selected number of paintings from the National Gallery of Ireland were bought, mounted behind glass, and visible to passers-by (students, academic-and-other staff, visitors). Each print was tagged by a shortened URL (bit.ly) and also by the corresponding QR code of that URL. At the time (in 2010), GoGo was in its infancy. One year on, we note that there is no longer any need for the URL. The QR code tag is fully sufficient.

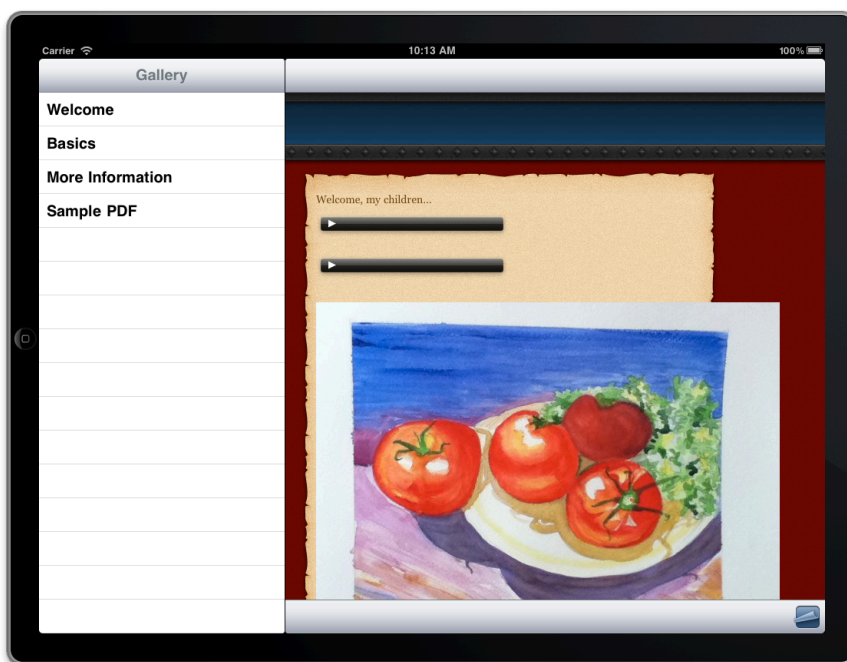


Figure 1 A simple iPad layout for a mobile digital art exhibition

One of the major concerns that we still have is in the general field of aesthetics. This concern may be related in connection with the document shown in Fig. 2 below. Does not the juxtaposition of a QR tag “interact” with the image to which it relates? Does not this interaction “detract” from the image? Is there an appropriate location for the QR tag with respect to the kind and dimensions of each image?

Mobile Devices and Art Apps

Apple’s iPad [16] (which, in early January 2010, we imagined might be called iTablet [3]) paved the way for the newly realized generation of tablet devices. In the context of the Trinity College Art Collection Exhibition, discussed below, an iPad Art Application — the TCD ART APP [Fig. 1] — was designed by Mike Brady with a main image pane to show the specific art work and side panel to the left giving a variety of information on the piece, for example, location, provenance, and so on. The iPad application is a general purpose media-presentation ‘app’ that can display high-quality images, text, video and audio. Briefly, the app presents the user with a selection of images of a fixed size. The images may comprise or contain video and audio sequences, as well as high quality graphic and textual elements. Media formats include H.264 movies, AAC audio, JPEG, GIF and TIFF images and PDF. In addition, pages can be laid out using standard HTML and CSS.

Compared with a web-based approach, the app offers the following advantages:

- All media—images, videos, audio, text, graphics—is contained in the app. The user has instant access to any of the media in the app, without being at the mercy of a network connection. Artists are free to concentrate on

providing the highest quality media, unconstrained by network speed or capacity considerations.

- The app presents a fixed format for the presentation of media.

For distribution, iPad apps must be submitted to the iTunes App Store, and must be approved by the Apple Corporation. It is understood that apps are vetted for compliance with technical guidelines and for general suitability and utility. They also require an audience suitability rating. Generally speaking, the time from submission to approval is less than two weeks. The submission process is fully automated from the developer's point of view.

There are now competitors to the iPad emerging. For example, at the end of September 2010, RIM announced the development of a device with the very nice title of "Playbook" [17]. The Samsung Galaxy Tab [18] is especially noteworthy, in comparison with the iPad, because it fits in the standard size trouser pocket, screen diagonal 7in (approx 18cm). In addition, it is grounded on the Android "open" operating system. Such tablets are general portable flat *universal* computing platforms that generalize the e-book readers such as the Kindle [19] 6in diagonal. Size matters. It turns out that the Playbook is also 7in diagonal. In contrast to the iPad, all such tablet devices are essentially the size of a standard paperback book. One hypothesizes that RIM deliberately chose the name Playbook for that idea of the tablet being a "book breakout" device, much like many of the so-called notebook computers [20]. It is curious to note that Microsoft was expected to be first out with a tablet device in 2009 [21]. An up to date account of the latter's status, at the time of writing, is indicated by Marc Cieslak's report for "BBC <Click" at the Consumer Electronics Show 2011, Jan 6-9, in Las Vegas [22].

Let us now turn to the central question of getting art work onto the mobile device and curating it. There is already an Art app for the iPhone and iPad [23]. From the entire collection, one is able to curate one's own personal choice under the rubric of "My Gallery," a phenomenon that now appears to be commonplace for National Art Galleries online. The National Gallery of Ireland uses such a device, under the name of "My Collection." It will be discussed later. We want empower the people to curate their own mobile digital art exhibition by being able to choose each piece from an online collection. As a first step towards such a personal curating of a universal mobile exhibition we give four case study examples.

Case study 1: The Trinity College Art Collection



In December 2010, the Curator, Catherine Giltrap, published a book, entitled "George Dawson: An Unbiased Eye" [24] to celebrate 50 years (since 1959) of activities undertaken by George Dawson, the Professor of Genetics at Trinity College Dublin. A succinct account of this undertaking appeared in The Irish Times newspaper in October 2010 [25]. However, in conjunction with this classical activity, there was a special effort made to engage with the digital world



at the same time. Three specific activities are to be noted in this respect:

(1) the development of an App for the iPhone and iPad to illustrate some key art works from the collection; (2) the organization of a walkabout tour of art works whereby QR codes were used as digital links to information on the College Web about the art work in question (See Fig.1 below); (3) the hijacking of the classical Newgrange Winter Solstice spectacle [26] by overlaying the event with a Digital Solstice of Art taken from the collection. The latter has been postponed until December 2011 [27].

To illustrate the "showing is telling" principle, a one page art pamphlet was created (Fig. 2). There are 4 pieces of art shown, centred in each row:

1. *Le Diable* [28];
2. *Oiseau dans le Feuillage* [24, 29];
3. *Study '66* [30] and
4. *Kite!* [31].

There is a short text giving some standard information on the artist, the year, the materials, the provenance and so on. There is a QR code tag associated with the piece of art. Anyone with a smartphone and QR reader will be able to access the full text associated with the artwork by taking a photo. Using the GoGo feature on the iPhone [3], each QR code tag (eventually) led to the appropriate web page in Trinity College Dublin (2011-01-04). Interestingly, GoGo produced alternative possibilities to the interpretation of the QR code tag. Nothing is perfect!

George Dawson: An Unbiased Eye. Modern and contemporary art at Trinity College Dublin since 1959

19 November – 19 December 2010, The Royal Hibernian Academy, Ely Place, Dublin 2

SMARTPHONE INTERACTIVE EXHIBITION TRAIL - preview

Instructions: Smartphone users can download a free QR tag reader app to scan the following. Simply open the QR app once downloaded. This automatically opens the smartphone camera. Hover the camera over the black and white tags. Your phone will be directed to a page on the Trinity College Dublin Art Collections website where you can access more information on the artist and the work. Enjoy!

Direct access to the web pages is also available at www.tcd.ie/artcollections/exhibitions/index.php

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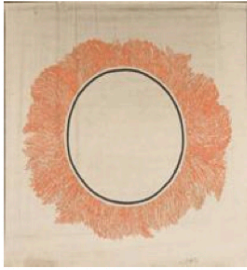

		<p>Karel Appel <i>Le Diable</i>, 1956 mixed media on paper 50 x 63 cm Purchased from Gimpel Fils, London; donated by George Dawson</p>
<p>Georges Braque <i>Oiseau dans le Feuillage</i>, 1961 lithograph, 15 of 50 80 x 114 cm Purchased from Galerie Maeght, Paris; donated by George Dawson</p>		
		<p>Micheal Farrell <i>Study '66</i>, 1966 acrylic on canvas 91.5 x 80.5 cm Purchased from The Dawson Gallery, Dublin, 1966; donated by George Dawson</p>
<p>Patrick Scott <i>Kite!</i>, 1974 acrylic on canvas, supplied by V'Soske 622 x 622 cm Created for the 'Kite' Exhibition, Kilkenny Castle, 1974 Donated by Scott Tallon Walker architects, Luce Hall, Trinity College Dublin</p>		

Figure 2: QR code tags for Smartphone Interaction

The display pattern of the alternating QR code tags on the art pamphlet has an aesthetic appeal. But, behind this façade there is a more serious purpose: 1. the minimum printed size is approximately square of side 1 cm and 2. there must **not** be another QR code tag within “half a tag width” [32].

Now that one can see the way in which to present art/images with QR code tags, one will be interested in experimenting for oneself. The basic (missing) link is, of course, the QR code generator. A typical search provides multiple possibilities. One choice leads to the Kaywa QR code generator [33]. Any QR reader will (ought to) return the URL and web page of “2. *Oiseau dans le Feuillage*” above.

On the other hand, one might start with the print of “*Oiseau dans le Feuillage*” as shown in “*George Dawson: An Unbiased Eye*”, Fig.20, p.38 [24]. Application of GoGo returns the primary result as a web page of the Stadtmagazin Echo Münster [34], a result which might seem to be surprising for the novice.

The success of this TCD QR tagged mini-exhibition opened the door to a more general-purpose curation of mobile digital art. In particular, revisiting the two national art galleries in Sofia and Dublin, neither of which had good digital art interfaces to the public in 2010 [3], we proposed to carry out two experiments on each gallery to see if one could curate a good MDAE. The following two case studies are affirmative outcomes.

Case study 2: The National Art Gallery (Sofia, Bulgaria)



There is a small collection of art works digitally available online, presented in separate Bulgarian and English language pages. Google Goggles (GoGo) has the technology to do image recognition. For example, using GoGo directly on the digital image “*Composition – Female Figure III*” circa 1950, by Nicolai Abracheff [35], does not result in an appropriate match. One hypothesis for the failure might be that the image is too abstract to be recognizable (as that of a woman in red). We will see later, in the case of the National Gallery of Ireland, that a similar failure to recognize an

image also occurred. We hypothesize, that such image recognition failure, is due to the fact that GoGo has not yet had enough “learning experience.” If there is no recognition, then the “showing is telling” curation strategy will be unsuccessful.

There is a very simple and effective solution to this problem, now to be explained in some detail in the practical context of the recent Trinity College Art Collection exhibition, outlined above. One generates a QR code tag (of size approximately 2.54 x 2.54 cm, equivalent to 200 x 200 pixels) [36] for the URL of the web page on which the digital image of the painting is located. Then the image and the QR code tag are collocated, such as on Flickr [37]. Finally, use of GoGo will bring one to the web page in the National Art Gallery (Sofia). [[The reader is invited to GoGo the QR tag above to see the “*Composition – Female Figure III*” on the Sofia gallery website]]. The results of this practical research are electronically published in the form of a Flickr Gallery entitled “*EIPub2011 Mobile Digital Art Exhibition*” [14].

We can also turn this mobile digital art collection into a simple game. Specifically, one of the 18 images chosen for the Flickr Gallery does **not** belong to the collection of images on the National Art Gallery (Sofia) web site. The goal is to determine which one and then to determine where it is located. It is worth noting, *en passant*, that the number of images per web page of the National Art Gallery (Sofia) is 12 and $12 = 4 \times 3$ is a nice number (months of the year, hours of the day,...). The image panning of a tablet (iPad, iPhone,...) to facilitate a 4x3 or (3x4) exhibition has great aesthetic appeal.

Case study 3: The National Gallery of Ireland (Dublin, Ireland).








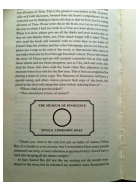
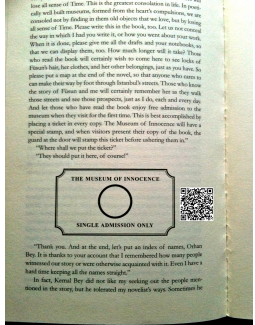
At the EIPub 2010 Conference in Helsinki one reported on the then status of the digitized collection of the National Gallery of Ireland [38]. Now one year later [4] it is gratifying to see that it compares well with other world class “National” Art Galleries. In the context of a Mobile Digital Art Exhibition, the entry point is the Online Collection [39]. One feature of particular relevance is the ability to create online one’s own collection of images under the rubric of “My Collections” [40].

Let us consider the art work entitled “The Meeting on the Turret Stairs, 1864” [41], a popular piece. Use of GoGo currently gives a good variety of URL choices, and that which takes one to the National Gallery of Ireland website is currently [2011 Jan 24] on the 5th page of results... Undoubtedly over time, as people get used to exploring the NGI web site and using its “My Collection” feature, the NGI URL will rise higher in the search results list. But in the context of an MDAE, we can greatly augment the standing of the NGI. There is a large choice of images. It is possible to create an external Flickr Gallery [42] where each image from the NGI collection is given a suitable precise QR tag. An example is shown in Table 1 below.

Case study 4: The Digital Museum of Innocence (Everywhere for Everyman)

Wanted! Curator for the Museum of Innocence! The most recent news concerning the “real” Museum of Innocence is that it will be in place by Spring 2011 [43]. One will see. Orhan Pamuk’s Museum of Innocence is founded upon his earlier work, “Istanbul, Memories of a City,” [44]. His “prolonged study of these photographs [each one assigned its place in the museum] led [him] to appreciate the importance of preserving certain moments for posterity” [44] p.13. And the Istanbul book is full of photographs. It is also full of his own personal memories up until the age of 18 when he abandoned the career of artist to undertake the career of writer. Taking the two books together one sees how memories accumulate in the things preserved. For our final MDAE we will construct a simple “game”/“play” based again on a Flickr Gallery of 18 images. The theme will be the “Seven ages of man”: infancy, boyhood, lover, soldier, justice, pantaloon, second childishness [45, 46]. Games have rules. We propose the following set. **Rule 1:** One will universalize the “ages of man” to apply equally to woman in our times. **Rule 2:** One of the ages will be dropped. It matters not which one. **Rule 3:** There will be 3 images for each of the resulting 6 ages. **Rule 4:** Each image will carry the same Creative Commons license. **Rule 5:** Each image will carry the appropriate QR tag. **Rule 6:** Each image *may* carry the designated age of (wo)man in an appropriate aesthetic form. Such game/play may initially be considered to be similar to a game of Solitaire. However, with a little more thought and corresponding rules and moderation, one can deduce that the game might readily evolve into a “distributed” family game played out digitally over the web. Space does not permit the development and presentation of a worked-out game for the Digital Museum of Innocence to be presented here. But given the image-driven nature of a “mobile digital art exhibition,” we can explain briefly how it ties in with the well developed, yet evolving, “digital re-discovery of culture and the game of inquiry/identity” [47-49], abbreviated DrDC game, for convenience.

Table 1. Construction of QR tagged art works

Table	URL	QR tag	Image	Image Tagged
NAG Sofia	http://www.nationalartgallerybg.org/index.php?l=60&id=21			
NGI Dublin	http://www.nationalgallery.ie/en/aboutus/RightsandReproductions/PrintSales/EmotiveScenes/TurretStairs.aspx			
Museum of Innocence	http://www.flickr.com/photos/mihalorel/5363085749/			

Conclusion

Instead of choosing the “Seven Ages of Man” for the “Digital Museum of Innocence,” one might follow more closely the strategy used by Orhan Pamuk, in both Istanbul (with photographs) and The Museum of Innocence (with stories). The 5 basic elements of a DrDC game [50] are, in order,

1. Backstory (this is a neologism for Background story): it is a personal narrative (a story), which directs the search and which sets the scene;
2. Web pages: a small set (3) of Web pages which provide essential information, together with

3. Keyimages: a set (3) of Key images which provide important visual clues.
4. Goal: The Goal of the game ought to be stated clearly. It may be very precise, leading to reasonably early (psychological) closure for the player(s), or it may be open-ended, much like a social computer game such as the SIMS or Second Life.
5. Keywords: Practical game-playing experience has taught us that hints in the form of keywords, for example, may be essential in directing the search.

One might begin with Chapter 2 of the book “Istanbul”: **The Photographs in the Dark Museum House**. This has an immediate resonance with “The Museum of Innocence.” In the book “Istanbul” most of the photographs are of “uncertain quality.” Nevertheless, GoGo does recognize those on (a) p.83: returning web pages for “Istanbul” (book) and “Istanbul” – a review of the book; (b) p.219: returning web pages for “Orhan Pamuk” writer and “Istanbul” – a review of the book.

There are no captions associated with any of the photographs. In this way they are really presented in the “**showing is telling**” paradigm. However, Pamuk does list all photographs in an appendix “**About the Photographs**,” giving their provenance. “I relived much of the excitement and puzzlement of writing this book while choosing the photographs. Most were taken by Ara Güler; during my time searching in his home-studio-archive-museum (in Beyoğlu, where he has spent most of his life)...” [51].

At the end of Chapter 2, so early in the entire book, “the cloud of gloom and loss that the fall of the Ottoman Empire had spread over Istanbul finally claimed my family, too.” “I was at this point—hovering between fact and remembrance, between the pain of loss and its meaning—when the idea of a museum first occurred to me.” [52] p.490.

Let us finish with one final remark. There is a Wikipedia page for Ara Güler. On that page there is listed his website: <http://www.araguler.com.tr/>. Trying to access the website (2011-01-24) is currently not possible. A good goal for this game of life would be the construction of a mobile digital art exhibition of his work (18 images in all) to be presented in the Museum of Innocence in order to re-create some of the Memories of the City, Istanbul.

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References

1. Trinity College Dublin. *College Art Hire Scheme*. 2010 [cited 2011 Jan 14]; Available from: http://www.tcd.ie/Communications/news/news.php?headerID=1570&vs_date=2010-10-1.
2. Thorpe, V. 'Gallery rage' mars the Tate's record-breaking Gauguin show. 2011 [cited 2011 Jan 16]; Available from: <http://www.guardian.co.uk/artanddesign/2011/jan/16/gauguin-tate-modern-crowds>.
3. Mac an Airchinnigh, M. and G. Strong, *Social networks and the national art gallery*, in *EIPub 2010, Publishing in the networked world: transforming the nature of communication.*, T. Hedlund and Y. Tonta, Editors. 2010, Hanken School of Economics: Helsinki, Finland. p. 217-33.
4. *National Gallery of Ireland*. 2011 [cited 2011 January 16]; Available from: <http://www.nationalgallery.ie/>.
5. *National Art Gallery Sofia*. 2008 [cited 2010 January 18]; Available from: <http://www.nationalartgallerybg.org/>.
6. *Museo Nacional del Prado*. 2010. **2010**(March 23).
7. *Ateneum Art Museum*. 2010 [cited 2010 January 20]; Available from: <http://www.ateneum.fi/>.
8. Flickr, *The Flickr Gallery*, 2011, Flickr.
9. Orela, M. *EIPub2011 The Museum of Innocence*. 2011 [cited 2011 Jan 24]; Available from: http://www.flickr.com/photos/mihal_orela/galleries/72157625717729259/.
10. Marincola, P., *What makes a great exhibition?* 2006, Philadelphia, PA and Chicago, IL: Philadelphia Exhibitions Initiative. Distributed for Reaktion Books in the USA and Canada by the University of Chicago Press. 183 p.
11. Storr, R., *Show and Tell*, 2006. p. 14-31.
12. Orela, M., *Flickr Gallery Танцьорка*, 2011.
13. Edelfelt, A. *Virginie*. 1883; Available from: <http://www.flickr.com/photos/floridagirl7/4180173503/>.
14. Mihal Orela. *EIPub2011 Mobile Digital Art Exhibition*. 2011 [cited 2011 Jan 11]; Available from: http://www.flickr.com/photos/mihal_orela/galleries/72157625665088475/.
15. Aggarwal, A., S. Molines, and L. Wei. *Smartphones Let Loose - The Museological Potential of Wireless Technology*. 2010; Available from: aggarwal.arnav@gmail.com, clafou@gmail.com, weilai.irl@gmail.com.
16. Apple. *iPad*. 18-by-24 cm].
17. Halliday, J. *RIM announces Playbook tablet device*. 2010 [cited 2010 Sep 30]; Available from: <http://www.guardian.co.uk/technology/blog/2010/sep/28/rim-playbook-tablet-computer>.
18. Samsung. *Galaxy Tab*. 19-by-12 cm]. Available from: <http://galaxytab.samsungmobile.com/>.
19. Driver and Vehicle Licensing Northern Ireland. [cited 2006 June 19]; Available from: <http://www.dvlni.gov.uk/>.

20. Wikipedia. *Laptop*. [cited 2011 Jan 24]; Available from: <http://en.wikipedia.org/wiki/Laptop>.
21. Gizmodo. *Microsoft Courier Tablet*. 2009 [cited 2011 Jan 24]; Available from: <http://gizmodo.com/5365299/courier-first-details-of-microsofts-secret-tablet>.
22. BBC >Click. *Blackberry and Microsoft enter busy tablet market*. 2011 [cited 2011 Jan 24]; Available from: http://news.bbc.co.uk/2/hi/programmes/click_online/9362136.stm.
23. ADS Software Group, I., *ART (app) version 4.4*.
24. Giltrap, C., *George Dawson: An Unbiased Eye* 2010, Dublin: Trinity College Dublin.
25. Dunne, A., *Anchorman, Pop Tarts, Picasso . . .* 2010, The Irish Times: Dublin.
26. *Newgrange – Winter Solstice*. [cited 2011 Jan 24]; Available from: http://www.newgrange.com/winter_solstice.htm.
27. Giltrap, C. *Celebrating 50 Years of Modern and Contemporary Art at Trinity*. 2010 [cited 2011 Jan 1]; Available from: <http://www.tcd.ie/artcollections/exhibitions/50years.php>.
28. Karel Appel. *Le Diable*. 1956; Available from: <http://www.tcd.ie/artcollections/exhibitions/appel.php> last access 2011-01-04.
29. Georges Braques. *Oiseau dans le Feuillage* 1961; Available from: <http://www.tcd.ie/artcollections/exhibitions/braque.php> last access 2011-01-04.
30. Micheal Farrell. *Study '66*. 1966; Available from: <http://www.tcd.ie/artcollections/exhibitions/farrell.php> last access 2011-01-04.
31. Patrick Scott. *Kite!* 1974; Available from: <http://www.tcd.ie/artcollections/art-campus/scott-kite.php> last access 2011-01-04.
32. Brennan, S., *Minutes of Meeting - 2/11/2010*, 2010: School of Computer Science and Statistics, Trinity College Dublin.
33. Kaywa. Available from: <http://qrcode.kaywa.com/> last access 2011-01-04.
34. Stadtmagazin Echo Münster. *Das Abenteuer der Moderne: George Braque hat es mitgeprägt*. [cited 2011 Jan 12]; Available from: <http://www.echo-muenster.de/node/37757>.
35. Nicolai Abracheff. *Composition – Female Figure III, circa 1950*. [cited 2011 Jan 9]; Available from: <http://www.nationalartgallerybg.org/index.php?l=60&id=3>.
36. *The 2D Code*. [cited 2011 Jan 9]; Available from: <http://www.the2dcode.com/qr-code-generator>.
37. Mihal Orela. *WomanInRed QRtagged*. [cited 2011 Jan 9]; Available from: <http://www.flickr.com/photos/mihalorel/5340241080/>.
38. *National Gallery of Ireland*. 2010 [cited 2010 January 20]; Available from: <http://www.nationalgallery.ie/>.
39. National Gallery of Ireland. *Online Collection*. 2011 [cited 2011 Jan 23]; Available from: <http://onlinecollection.nationalgallery.ie/start?t.state.flow=579bb9c1-a6db-4aec-9ef7-7f9b7a736352>.
40. National Gallery of Ireland. *MyCollections*. 2011; Available from: <http://onlinecollection.nationalgallery.ie/mycollections/view?t.state.flow=a905a902-3e39-4179-94cb-66aeb8865e66>.
41. Frederick William Burton. *Hellelil and Hildebrand, the Meeting on the Turret Stairs*. 1864 [cited 2011 Jan 16]; Available from: <http://www.nationalgallery.ie/en/aboutus/Rights%20and%20Reproductions/Print%20Sales/Emotive%20Scenes/Turret%20Stairs.aspx>.
42. Mihal Orela. *ElPub2011 National Gallery of Ireland*. 2011 [cited 2011 Jan 16]; Available from: http://www.flickr.com/photos/mihal_orela/galleries/72157625713817097/.
43. *Where is the Museum of Innocence?* 2011 [cited 2011 Jan 17]; Available from: <http://istanbul2010culture.com/2011/01/where-is-the-museum-of-innocence/>.
44. Pamuk, O., *Istanbul : memories of a city* 2005, London: Faber and Faber. 348.
45. William Shakespeare. *The Seven Ages of Man*. [cited 2011 Jan 18]; Available from: http://www.bintmagazine.com/bint_stories/500.php?story_id=475.
46. Wikipedia. *All the world's a stage*. [cited 2011 Jan 18]; Available from: http://en.wikipedia.org/wiki/All_the_world's_a_stage.
47. Sotirova, K., *EDUTAINMENT (Game) – DIGITAL (RE)DISCOVERY OF CULTURE*. Review of the National Center for Digitization, 2005. **2005**(6): p. 58-68.
48. Mac an Airchinnigh, M., K. Sotirova, and Y. Tonta, *Digital re-discovery of culture game of inquiry & the physicality of soul*. Review of the National Center for Digitization, 2006. **2006**(9): p. 19-37.
49. Mac an Airchinnigh, M., *The Digital Culture*, in *Balkan Ülkeleri Kütüphanelerarası Bilgi-Belge Yönetimi ve İşbirliği Sempozyumu*, Ender Bilar and Y. Ekinci, Editors. 2008: Trakya Üniversitesi, Edirne, Turkey. p. 75 - 83.
50. Mac an Airchinnigh, M. *Let me tell you something about (y)our culture?* 2010.
51. Wikipedia. *Ara Güler*. [cited 2011 Jan 24]; Available from: http://en.wikipedia.org/wiki/Ara_Güler.
52. Pamuk, O. and M. Freely, *The museum of innocence*. 1st North American ed 2009, New York: Alfred A. Knopf.