Melting Pots:
Berlin Digital meets Berlin Culture

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INTRODUCTION

Forming, storming, norming and performing [1] – a well-known phase-modulation model of team building is probably reliable to describe the changeful relationship of Berlin Cultural and Berlin Digital in the Melting Pot of the metropolis. The pretty, shy bride awkwardly meets a nerdy, hyperactive groom when after the fall of the Berlin wall on November 9th, 1989, the wedding looms on the horizon: digital economy, the bullish beacon of hope of a city, which almost lost its subsistence from industrial production, and the reunified cultural institutions with their wonderful and much admired dowry of collections scattered and dispersed for so many decades over the Eastern and the Western parts of the town. Sometimes it comes to bitchy approaches in this restless partnership, sometimes afflicted with distrust and reticence, with bolder hope and economic calculus from both sides. There are only single, in retrospect amazingly ambitious projects, in which one comes closer to each other and gauges what a same household in the future time may look alike.

FORMING

The "Digital Gallery" of the Berlin Gallery of Old Masters (1997), the "Digital Joseph Beuys Video Archive" at the Hamburger Bahnhof – Museum für Gegenwart (1998), the interactive time travel "Kidai Shôran" at the Museum of Far Eastern Antiquities (1999) and the electronic inventories of the DISKUS series (from 1995 on) are highly illustrative examples of this phase of rapprochement of digital economy, publishers and museums [2]. Co-operation is fostered by conferences like "Ars Digitalis" (since 1996) or the annual EVA Berlin event – Electronic Imaging and the Visual Arts (1994), which is a caucus of digital culture and technology from the beginning. Technology providers like Gesellschaft zur Förderung angewandter Informatik e.V. (GFaI), research sector like Hochschule für Technik und Wirtschaft Berlin, University of Applied Sciences, and cultural sector, Staatliche Museen zu Berlin – Preußischer Kulturbesitz, are on the way to develop a convergent digital vision. Furthermore, extensive support programs of the European Commission provide broader perspectives. International expertise of Berlin Digital and Berlin Culture liaises with projects like RAMA – Remote Access to Museum Archives (1994) [3] and NARCISSE – Network of Art Research Computer Image Systems in Europe (1993) [4]. Cultural institutions and digital industry are brought together signing a European Memorandum of Understanding of "Multi-media access to Europe's Cultural Heritage" already in the year 1996. The appeals of the G7 Ministerial Conference on the Information Society "for open multimedia access to cultural heritage in the world" (1995) [5] obtain a positive hearing in Berlin and create considerable energy in setting up pilot projects and proposals.

STORMING

The collapse of the speculative dot-com bubble in March 2000 then changes everything. The glamorous appeal of some of the early interactive media applications in some of the museums melts away in disillusionment, as do also the unreal optimism and the exaggerated business expectations of digital technology and economy. In Berlin the collapse is a dramatic one. Many previously hyped media start-up companies end up with meagre income and solely fed by chronically strapped budgets of their clients from the cultural sector. It is a time of closing ranks and pooling intellectual and financial resources. The interdisciplinary networking of heritage institutions –

museums, libraries and archives is the new core value of the digital mission of Berlin Culture. Evidently, the concept of aggregator portals with shared metadata and harvested content from heterogeneous cultural repositories becomes the linchpin of the digital mission. The number of these types of portals is surprisingly increasing in the cultural sector. Users may find local content by getting access through a larger aggregation and most often through search engine. In Berlin we are witnessing the creation of Wikimedia Germany – association for the promotion of free knowledge (2004) but also the leading role of public cultural institutions in collaborative and technology driven projects like Kalliope, MICHAEL, ATHENA+ or Europeana. With the European Year of the Disabled in 2003 many initiatives were launched to improve the accessibility of the barrier-free Internet [6]. The administrative office of the DDB "German Digital Library" [7], established in the year 2009 as the national aggregator of cultural content and jointly funded by local, federal and national authorities, is based in Berlin at the Prussian Cultural Heritage Foundation. The availability of digital cultural content beyond commercial, temporal and spatial restrictions is connected with the intention of democratizing the Information Society. But at the same time we notice a valuable impact on the growth of Berlin's creative industries. The shifting of the brick-and-mortar museum into the virtual data space reaches out to a spectacularly broader and globally networked audience. Semantic Web technologies, authentic cultural content and fair-use licensing models bear a chance to develop advanced business models beyond the apparent omnipotence of large search engine providers.

NORMING

The next phase in the relationship of our couple of Berlin Digital and Berlin Culture is a stage of mutual re-education. Social media such as Facebook (2004), YouTube (2005) or Twitter app (2010) find their way into the cultural institutions and effect a substantial transformation of cherished habits and traditional communication models. They offer individualized and self-supporting information services. Smart, mobile devices may control the distribution of information even independently from the museum's authorities. The physical museum, on the one hand, and the virtual museum, on the other hand, are henceforth not opposing or complementary positions, but merge into a single homogeneous experience and perception space. With all the forums, blogs and sharing sites the cultural institutions expand their outreach and gain new experiences from direct interaction with online-visitors and user-generated content. But in fact, they are also losing the accustomed sovereignty

over their narrative. Monologue-type communication models (one to many) – as for example a traditional Director's Welcome or the guided tour in the museum – turns into a polyphonic dialogism (many to many) where the narrator is not necessarily the museum's authority itself.

PERFORMING

The last phase of acceptance between Berlin Culture and Berlin Digital is characterized by effective cooperation and productive coexistence. Digital transformation has become the catchphrase for all the ongoing processes of change and reinvention of cultural institutions in an even more digital world. There might be fundamentally different requirements and strategic approaches amongst different cultural institutions, but they are all aware of the necessity to adapt digital technology and to bring it in line with their changed profiles and their new role in society as a whole.

Currently, emphasis lies mainly on the challenge of curating, i.e. 'curating digital data' and 'digital curating'. The former involves key issues like long-term archiving, storage architectures, and reliability of digital cultural content. This corresponds with the historical responsibility of the heritage institutions, which care for the digital objects with all the same diligence they show for their physical beholding. Thus, data standards, technical equipment, and software solutions are mainly developed and implemented in a process of reciprocal and iterative exchange of cultural institutions, research funding councils and technology developers. In Berlin, this becomes evident in projects such as DIGIS, the service point digitization at the Zuse Institute Berlin (ZIB) [8], CultLab3D of the Fraunhofer Institute for Computer Graphics Research IGD [9] and ZEDIKUM, a Centre for Digital Cultural Heritage in Museums at the Museum of the Ancient Near East in Berlin [10].

The creative, cultural and economic potential of these co-operations opens up only with liberal access and availability of data – while respecting copyright constraints. The access to online resources and the development of fair-use licensing models are thus crucial to the current discussion. A far reaching progress in this respect has been achieved by the "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities" [11] (2003). The document has finally been recognized by many cultural institutions in Berlin as well as the Prussian Cultural Heritage Foundation, though with the addendum of a "Best Practice Recommendation" (2013) on commercial usage and exploitation of digital repositories [12].
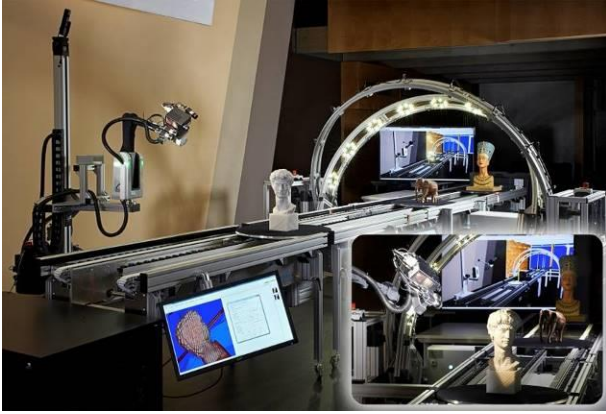
Figure 1: *Mass digitalization of cultural artefacts.*
© Fraunhofer IGD, CultLab3D, 2015.

Figure 2: *Screenshot from a 3D Model by Fraunhofer IGD. (The scanning has been supported by the German Federal Government, BKM)*
© Antikensammlung, Staatliche Museen zu Berlin, Pergamonaltar, 3D Model, Detail, 2016.

Apart from 'curating digital data' attention of Berlin Cultural is currently focused on 'digital curating'. Recent technological advances show a profound impact towards the way in which we curate, exhibit, perform or broadcast our art: e.g. ultra-high-resolution panorama techniques of the Berlin based Heinrich-Hertz Institute [13], high-precision optical sensor systems of the German Aerospace Center – Institute of Optical Sensor Systems [14] or new tools for 3D mass digitization in the cultural heritage domain of Fraunhofer IGD (see Figure 1) [15]. There is no speculation in assuming that these technological achievements shall inevitably pose the question how to use and how to play the circuit of hybrid screens, virtual exhibitions and streamed concerts in the future time. Thus, the major challenge of Berlin Cultural is certainly to strengthen technical, legal and curatorial co-operation with Berlin Digital. Augmented reality and mixed reality applications are already on the horizon with the UHD live streaming from the Berlin Philharmonic Orchestra [16] or the High-Res 3D modelling of the Pergamon Altar (see Figure 2) [17].

At the Humboldt Forum in the Berlin City Palace, projected as a unique centre for art, culture, science, and learning, an exhibition space shall be put into practice for an encounter of a world of objects, issues and ideas. Physical objects and digital media will enhance each other to promote the leading concept of "multiperspectivity" and a holistic experience of the world [18].

REUNIFICATION

With the German reunification not only has the Berlin wall come down but Berlin's economy as well. The former 400,000 industrial workplaces – 200,000 in West Berlin and 200,000 in East Berlin – were cut to only 150,000 over the following years. When I started my job at the Berlin Senate for Economics I [Eva Emenlauer-Blömers] found myself right in the middle of these problems of how to create and manage structural change to new workplaces and new industries. It was an enormous challenge for the political administration – resulting in intensive research and worldwide best practice analysis for finding new strategies and methods for a prosperous future of the city. One of the most suitable role models we have found in fact in London with the Government Creative Industries Task Force (CITF) and its program for new creative enterprises. Incidentally, this program started in 1997 – the same year we launched the Future Project (Landesinitiative Projekt Zukunft), which exists today with a large variety of projects and measures with sustainable results for Berlin's structural change into a modern and creative information society.

Amongst different measures – like building network ties between the economy, science, culture and politics and establishing public-private partnerships (PPPs) – the Future Project Initiative followed the concept of reinforcing strengths. So we also focused on Berlin's cultural sector and the museums. As a key project, the "Museumsportal Berlin" (see www.museumsportal-berlin.de) was created, an extensive online portal encompassing more than 200 museums in Berlin, based on a wide network and financed by public and private money.

But how far can we go with digitization and privatization of public culture? An outstanding example and – so far as we know – a unique one is the "Digital Concert Hall" (DCH, see www.digitalconcerthall.com) – a subsidiary of the Berlin Philharmonic Orchestra Foundation. Each season, around forty concerts are broadcasted via live-stream on the Internet with thousands of paying users worldwide. Having started in 2008, a breakeven point is expected in 2016. The DCH is also a technical pioneer. Experience with online-

transmitting, and the feedback of the audience and other users, leads to new research questions. This might also influence the design of new technological developments – from the already introduced 360-degree panoramic recording (with the OmniCam-360 of the Fraunhofer Institute HHI) and 3D Audio and 3D Video to immersive media (see Figure 3) – revolutionizing the way we experience and appreciate cultural events like concerts, theatre and exhibitions.

Figure 3: *Mobile TimeLab,*
An Immersive Viewing Area, HD Panorama.
© Fraunhofer Heinrich Hertz Institute, 2015.

NOTES

[1] Cf. Tuckman, Bruce W.: Developmental sequence in small groups, Psychological Bulletin, 1995. See also: http://infed.org/mobi/bruce-w-tuckman-forming-storming-norming-and-performing-in-groups/ [last 23.5.2016].

[2] Digitale Galerie der Gemäldegalerie, MIB GmbH, Arthur Engelbert, u.a., 1997. Cf. Bienert, Andreas, Die Digitale Galerie, in: Museumsjournal, Nr. 2, 12. Jg., Berlin, 1998, pp. 23–25. http://www.duplicon.de/projekte/digitale-galerie-besucherinformation-gemaeldegalerie.php [last 24.5.2016]

Digitales Medienarchiv Joseph Beuys. Nationalgalerie, Hamburger Bahnhof – Museum für Gegenwart, Berlin, LuRaTech GmbH, Berlin, 1998. Cf. Bienert, Andreas: Virtuelles Museum – SMB-PK, in: Museumsjournal, Nr. 4, 12. Jg., Berlin, 1998, pp. 74–77.

Kidai Shôran, ed. Jeannot Simmen, Museum für Ostasiatische Kunst, Berlin, 1999; CD-Rom, Köln, 2000.

DISKUS – Digitales Informationssystem für Kunst und Sozialgeschichte, ed. Bildarchiv Foto Marburg, Deutsches Dokumentations-

zentrum für Kunstgeschichte, Philips-Universität Marburg; Computer & Letteren, Utrecht; K. G. Saur Verlag München; 1995 seg. Cf. http://www.kulturerbe-digital.de/de/projekte/9_38_363730.php [last 2.3.2016].

[3] RAMA – Remote Access to Museum Archives, 1992–1994. Cf. http://cordis.europa.eu/project/rcn/14406_en.html [last 3.5.2016].

[4] NARCISSE – Network of Art Research Computer Image Systems in Europe, 1990–1993. Cf. http://cordis.europa.eu/project/rcn/19104_de.html [last 3.5.2016].

[5] Cf. http://europa.eu/rapid/press-release_DOC-95-2_de.htm [last 3.5.2016].

[6] EVA Conference, 2002, Berlin devoted a whole workshop session to these initiatives. See English versions of selected papers in: Hemsley, Cappellini & Stanke, Digital Applications for Cultural and Heritage Institutions, Ashgate 2005.

[7] Cf. https://www.deutsche-digitale-bibliothek.de [last 12.5.2016].

[8] digiS – Servicestelle Digitalisierung Berlin, c/o Konrad-Zuse-Zentrum für Informationstechnik Berlin (ZIB). Cf. http://www.servicestelle-digitalisierung.de [last 12.5.2016].

[9] CultLab3D is being developed at the Competence Center for Cultural Heritage Digitization at Fraunhofer Institute for Computer Graphics Research IGD, in Darmstadt, Germany. CultLab3D also stands for the corresponding research project funded by the German Federal Ministry for Economic Affairs and Energy. Cf. http://www.cultlab3d.de [last 12.5.2016].

[10] http://www.zedikum.de [last 12.5.2016].

[11] Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, Max Planck Society and the European Cultural Heritage Online project. Cf. https://openaccess.mpg.de/286432/Berlin-Declaration [not available on 12.5.2016].

[12] Cf. https://www.preussischer-kulturbesitz.de/schwerpunkte/digitalisierung/best-practice-empfehlung-zu-open-access.html [last 4.5.2016].

[13] Fraunhofer Heinrich Hertz Institute, Berlin. Cf. http://www.hhi.fraunhofer.de/en/start-page.html?NL=0 [last 4.5.2016].

[14] DLR-German Aerospace Center – Institute of Optical Sensor Systems. Cf.

http://www.dlr.de/os/en/desktopdefault.aspx
[last 4.5.2016].

[15] Fraunhofer Institute for Computer Graphics Research IGD. Cf. https://www.igd.fraunhofer.de/en/Institut [last 4.5.2016].

[16] Fraunhofer HHI successfully completed Panorama-Live-Streaming through the Digital Concert Hall of the Berlin Philharmonic. Cf. http://www.hhi.fraunhofer.de/press-media/news/fraunhofer-hhi-successfully-completed-panorama-live-streaming-through-the-digital-concert-hall-of-the-berlin-philharmonic.html [last 12.5.2016].

[17] Cf. 3D Scan of the Pergamon Altar, Martin Ritz e.a., in: EVA Berlin 2015: elektronische Medien & Kunst, Kultur, Historie, ed. Andreas Bienert, Berlin, Staatliche Museen zu Berlin – Preußischer Kulturbesitz, 2015, pp. 47–51. Cf. http://www.smb.museum/pergamon3d [last 24.5.2016]

[18] Cf. Media Strategies for the Humboldt Forum, Bettina Probst e.a. in: EVA Berlin 2015: elektronische Medien & Kunst, Kultur, Historie, ed. Andreas Bienert, Berlin, Staatliche Museen zu Berlin – Preußischer Kulturbesitz, 2015, pp. 176–177. Cf. http://www.sbs-humboldtforum.de/en/Home [last 12.5.2016].