The digital Beethoven house

A project of

Fraunhofer Institut Medienkommunikation

in cooperation with

BEETHOVEN-HAUS BONN
Museum | Archiv | Kamermusiksaal | Verlag
Overview

• Motivation

• Goals of the project „The digital Beethoven house“

• Overview of the project

• Core Components of the project
  - Digital Archive
  - Web Site
  - Virtual Installation

• Technical data

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Motivation: Problems of museums and art collections

• Historical manuscripts are very fragile and usually irreplaceable

• Display of manuscripts in an exhibition puts great strain on these manuscripts

• Constraints on the size of the exhibition space necessitate, that only a small part of the collection can be displayed at a time

• Loaning objects to/from other institutions is very expensive (insurance & transport)

• Lack of interaction with exhibition objects

Some of these fundamental problems can be solved by digitising the collection and construction of a digital library from this digitised data.
Motivation: Added value through digital objects

Interaction with/manipulation of digital objects: Touching instead of watching

Storage of the structure of the original allows navigation within a digital object

Piece of music

First movement

Second movement
Motivation: Goals of digital libraries

Primary goals

• Preservation of cultural heritage
• Providing the collected knowledge and data of the institution
• Advance education of the public

This is achieved by

• provision of an efficient means of access to the whole collection
• answering of queries
• functionalities for dissemination and publication of the presented content
• creation of semantical connections to other institutions with similar topics
• world-wide accessibility via internet and WWW
• multilingualism
Goals of the project „The digital Beethoven house“

- Preservation and Promotion of the complete works of Beethoven as part of the world heritage
- Strengthening of the connection of Beethoven with Bonn
- Becoming a touristical and cultural attraction
- First colour-digitisation of composer-related documents
- Creation of a digital library with access over the internet
- Visualisation of classical music
- Semantical connections to other digital libraries
Overview for the project

Core Components
- Digital archive of Beethoven’s work
- Professional web site
- Highly-immersive virtual environment visualisations of music pieces of Beethoven

Partners
Beethoven-Haus Bonn
RHRZ Uni Bonn

Funding Agencies
Deutsche Forschungsgemeinschaft
Bundesministerium für Verkehr, Bau- und Wohnungswesen (BMVBW)
City of Bonn

Funding
4.6 Million Euro

Duration
September 2000 - December 2004
The digital Beethoven house — Core components

Digital Archive
- Digital library containing over 26,000 digital images (musical handwritings, letters, first prints as well as portraits of Beethoven and other persons, places, musical instruments and various other objects in the possession of Beethoven)
- Enrichment of the digital objects with structural and descriptive metadata

Web Site
- Bilingual attraction for music-lovers (German, English)
- Presentation of the departments
  - Research, Library, Publishing, Chamber Music Hall, Shop
  - Beethoven House Society, Museum, Virtual Installation
- Access to the images of the Digital Archive

Virtual Installation
- Interactive experience of classical music in the cellar of the museum
- Immersive audio visual display of the Live and Work of Beethoven
- CAVE-like Virtual Reality Systems (Powerwall)
Digital Archive

Goals:
• Appealing presentation of the whole collection
• Provision of comfortable search-interfaces, especially for internet-users
• Support for the international scientific Beethoven-community
• Provision of semantical connections with other digital libraries
• Allowing extensions of the system and its scope

Features:
• Different image qualities for internet and intranet
• All image material is watermarked (visible and invisible)
• Reproductions of images can be ordered online
Digital Archive: Data Types

26.000 high-quality color-digitised images of

- Music handwritings (6.300)
- Prints (first prints of sheet music etc.) (13.300)
- Letters and other documents (2.900)
- Pieces of art (portraits and sculptures) (2.900)
- Objects (musical instruments and other objects) (600)

Sound examples for every musical piece of Beethoven, on the internet, full pieces on the intranet

Access to Beethoven-documentaries

As well as metadata, metadata, metadata ...
Digital Archive: (Meta-)data sources besides digitised images

Opus indices
- Kinsky-Halm (Henle-Verlag)
- additional Data (Beethoven House)

Internal Database of the Beethoven House
- Dublin Core
- additional fields

Letter Edition
- Henle-Verlag

Sound Examples
- Record companies
- own recordings of BH

Incipits
- Themes of the musical works

Selection process

For the images
- structure
- techn. data (TIFF-header)

Digital Archive

Semantical integration

SGML XML MIDI Allegro GIF
Herzlich willkommen im digitalen Beethoven-Haus


Wir wünschen Ihnen viel Vergnügen auf unseren Internetseiten!

Ihr Beethoven-Haus Bonn

The home page of the web site (translation in process)
Web Site

The following pages are part of the web site for the project:

- Museum birth place (with special exhibitions)
- Research centre Beethoven-Archiv (including scientific publications)
- Library
- Publishing House
- Chamber Music Hall (calender of events)
- Beethoven-House Society
- Shop
- Virtual Reality Installation
- Digital Archive
Das sogenannte "Testaments-Haus" in der Heiligenstädter Probaspasse 6 galt bis in die jüngste Zeit als dasjenige, in dem Beethoven im Oktober 1802 den an seine Brüder gerichteten, dann aber doch nicht abgeschriebenen Brief schrieb, der heute als "Heiligenstädtischer Testament" bezeichnet wird.

Erst neuere Forschungen von Wälther Brauneis haben ergeben, daß der straßenseitig gelegene Wohntrakt, in dem sich heute die Beethoven-Gedenkstätte befindet, erst 1807 nach einem Brand wieder aufgebaut wurde, also keinesfalls authentisch sein kann.

Klaviersonate no. 16 G-dur op. 31 No. 1

Bonn und Umgebung
Virtual Reality Installation

Goal
- Provision of audio-visual experiences of Beethoven’s work

Approach
- Installation of a CAVE-like system
- Creation of works of Beethoven as virtual environments

Status
- conception phase finished
- implementation started in January 2002

Unique selling points
- Synesthetic music-experience
- Musical parameters influence the visualisation
- User-integration

Sub-Contractors
- RMH, Köln
- Vertigo, Köln
Virtual Reality Installation

3D model of Beethoven’s last study
Virtual Reality Installation: How do CAVEs work?
Technical data of the project

Digitalisation
- 26,000 pages, ~6 Terabyte volume (done by sub-contractor)
- colour management system
- Cruse Scanner System CS 145 P 220, 400-600 dpi opt. resolution, 48 bit color depth

Digital Archive
- Basis: Content Manager, IBM
- Access and presentation: A derivate of MILESS or MyCoRe, depending on release

Web Site
- Web Content Management System SixCMS (Six Offene Systeme GmbH)

Virtual Reality Installation
- Powerwall at the back wall of the cellar of the museum
- Image generation using SGI Onyx II / PC cluster system
- Projection using 2 beamers
- Passive stereo (polarised glasses)
Contact

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