Trustworthy Online Technical Environment Metadata Database TOTEM and Browsing System

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PROGRAMME

- Conceiving TOTEM, Janet Delve
- Implementing and Browsing TOTEM; User Testing / Evaluation, Janet Delve
- TOTEM Demonstration, Antonio Ciuffreda
**At archive time...**

1. Suppose your collection holds old media carriers, such as 5.25" floppy disks. It is important to capture the data stored on these media, before it is too late.

2. The Transfer Tools Framework assists you with extracting the data from your old media. It does this by using existing transfer tools.

3. The result of this extraction is a container file holding all files of the storage medium (a "disk image"), enriched with metadata. This can now be stored in your digital archive, just like other files.

**At access time...**

4. When a user requests an item from your digital collection and this item requires an old computer environment to render, the Emulation Framework is used.

5. The Emulation Framework automatically selects and runs the best available emulator and configures the software dependencies required to render the object (operating system, applications, etc.).

6. TOTEM

KEEP Virtual Machine (VM)
CONCEIVING TOTEM

Janet Delve
ROMAN METADATA!
We have a digital object that we want to emulate. Which emulator do we choose?

Technical environment metadata describes what the digital object and hence the emulator needs in terms of:

- Software versions
- Library versions
- Operating System versions
- Hardware versions etc.
WHERE TO FIND TECHNICAL METADATA?

PC CD ROM

PC VIDEO GAME FRONT COVER

KEEP

INFUTURE 2011

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PC VIDEO GAME BACK COVER

Here!

Whether your game is strategy, sport, sim, or about 'em up, Sold Out bring you the biggest games at the lowest price around.

It couldn't be simpler to get to the action straight away! Every new Sold Out product includes our unique, PC demo software™ which installs relevant game files, displays your player guide, and provides comprehensive offline support. In addition, it's your gateway to a whole host of online services such as technical support, hints, and tips.

You will find everything you need to play your game on the CD, including liGio Arribal Studio 4.3, Macrominds Shockwave™ Player, Microsoft Internet Explorer, and any updates and patches that become available, plus much more for quality, value, and service.

MIGHT & MAGIC® VII - FOR BLOOD AND HONOR

To Experience the Future of Game Play
You'll Have to Take a Step Back in Time
Might & Magic® VII - For Blood and Honor redefines the fantasy role-playing genre with enhanced 3D acceleration, thrilling gameplay, and faster frame rates. The enhanced engine brings a new fantasy world filled with fearsome dragons, horrifying monsters, and exotic races. This game has everything that experienced role-player claimers love, including new characters, classes, spells, magic items, and a compelling story that will keep you absorbed for hours on end. Might & Magic® VII - For Blood and Honor brings to life the most fantastic, engrossing, and intense role-playing experience ever created.

Keep

INFuture 2011

Keeping Emulation Environments Portable
SYSTEM REQUIREMENTS PANEL

Pentium® 133 (Min.) Pentium® 200 (Rec.); Windows® 95/98 or Me;
4x CD-ROM Drive;
32Mb RAM (Min.) 64Mb RAM (Rec.);
Graphics Card DirectX™ compatible; 3D Accelerators: 3Dfx®, Matrox, Rendition, and all Direct3D supported video cards;
DirectX™ compatible sound card;
Mouse & Keyboard; Min 375Mb of free hard drive space;
Install .Now™ (optional) requires Pentium compatible PC and 16Mb RAM IE5 installation requires 18.5Mb free hard disk space.

RECOMMENDED FOR AGES 3+ 11+ 15+ 18+
Target Computer Platform for multimedia encyclopaedia: Multimedia-PC with Pentium-Processor (from 90 MHz); with 16 MB RAM, 32 MB RAM or with 48 MB RAM and higher,

- 75 MB hard disk; Microsoft Windows 95, Windows 98 or Windows NT 4.0; Quad-Speed-CD-ROM-drive (or faster); with Windows enabled 16-Bit-Sound card, graphics card with 800x600 pixel resolution or higher and 65000 Colour or higher

- !!!!!???!!! Which data to choose?
DATA COLLABORATIONS

- Linked Data
- OPF Eco Registry
- Metadata standards – PREMIS, OAIS, Cedars, METS, NEDLIB etc.
- Computer History Museums
Generic Metadata Model for Hardware Architecture Type

Hardware Architecture Type

comprises

d

d denotes disjoint

eventually add more Architecture Types

Acorn Architecture Type

Apple II Architecture Type

eventually add more Architecture Types

PC Architecture Type

Processor

RAM

Hard Disk

input / output

CD-ROM Drive

Sound Card

Graphics Card

Internet Connection

Input / Output

processor type

size

processor speed

number of bits

Windows-enabled?

pixel resolution

Language Card

Audio Cassette Interface Input

Peripheral Card

Floppy Drive

Expansion Card

RF Modulator Output

Video Output

Expansion Slots

Motherboard

size

processor type

processor speed

Auxiliary Slot
Adrian Brown:

Assistant Clerk, Parliamentary Archives, author of Planets report on Representation Information Registries, regarding TOTEM

“I think KEEP is addressing some key questions about the potential to use emulation as a mainstream strategy”

(private correspondence)
The TOTEM database and Browsing System
Janet Delve
The Trustworthy Online Technical Environment Metadata (TOTEM) Database

Janet Delve
Background to TOTEM

- KEEP explored:
  - issues relating to the current state-of-the-art in metadata standards and their suitability for supporting emulation environments
  - gaps in provision of technical metadata
  - necessity for KEEP to cover both standard digital library content (e.g. scientific theses in PDF) and complex digital objects (e.g. computer games)
What is TOTEM

- A user interface for the database:
  - access to searching and browsing technical metadata
  - accessible via network
  - personalised to satisfy requirements of different user roles
TOTEM Objectives

- metadata data model to assist in the creation of a database for the KEEP Core Emulation Framework

- covers omissions in existing metadata standards for technical specifications (hardware, software, OS, libraries...)

KEEPING EMULATION ENVIRONMENTS PORTABLE
Support for 3 technical environments

- PC x386 Architecture
- Commodore 64 Architecture
- Console gaming platforms
Examples

Input

- File Type ID
  - File type versions
  - Software packages supporting file type

- Software ID
  - Operating systems supporting this SW
  - Libraries supporting this SW

- OS ID
  - Hardware types supporting this OS
  - OS versions

- Console Game ID
  - Supported gaming platforms
  - Supported controllers
Functionality

- Supports two types of search:
  - Simple Search
  - Compatibility Search
- User Registration
- Contact Form and Help
Sounds too good to be true?

Watch the demonstration

KEEPING EMULATION ENVIRONMENTS PORTABLE
Testing and Evaluation of TOTEM
Janet Delve
## Evaluation Design

<table>
<thead>
<tr>
<th>Type</th>
<th>How and when it is being used?</th>
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<tbody>
<tr>
<td><strong>Front-end involvement</strong></td>
<td>Scoping study of experience in 3 national libraries and one museum. Informed the development of the emulation platform.</td>
</tr>
<tr>
<td><strong>Normative evaluation and testing</strong></td>
<td>Applied as an internal testing of the database and interfaces.</td>
</tr>
<tr>
<td><strong>Summative evaluation</strong></td>
<td>Would be done when the emulation platform is released with the participation of key players such as BL, OPF, DCC, DPC.</td>
</tr>
<tr>
<td><strong>Direct engagement of wider professional communities</strong></td>
<td>Crowdsourcing for data on the emulator knowledge base is being considered.</td>
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Internal Testing (July-August 2011)

- Nielsen’s heuristics
- Cross-browser testing and mobile device friendliness
- Stress test

Recommendations
External Evaluation

- Currently launched through a web questionnaire on SurveyMonkey
- We also gather feedback during the KEEP workshops – thank you for your feedback!
Thank you for listening!
Questions?