



Trustworthy **O**nline **T**echnical **E**nvironment **M**etadata Database TOTEM and Browsing System

INFuture 2011

Zagreb 9-11 November 2011

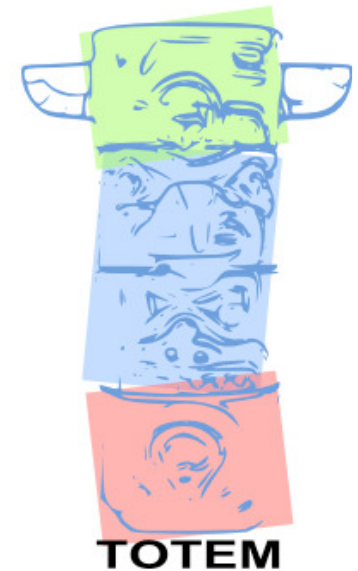
Janet Delve, UPHEC

Antonio Ciuffreda, UPHEC



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.

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.



2

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

Transfer Tools Framework

Digital archive

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.).

Digital archive

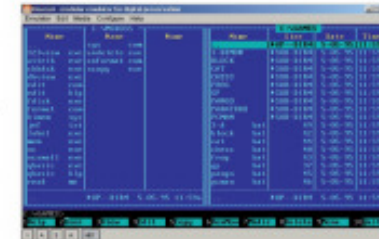
Emulation Framework

Emulator

6

TOTEM

KEEP Virtual Machine (VM)



CONCEIVING TOTEM

Janet Delve

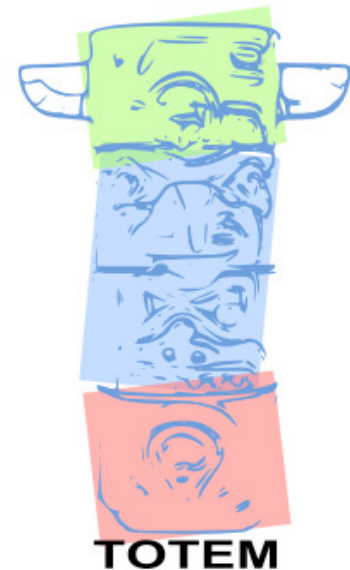


ROMAN METADATA!



TECHNICAL ENVIRONMENT 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
VIDEO
GAME
FRONT
COVER

PC VIDEO GAME BACK COVER Here!

Whether your game is strategy, sport, sim, or shoot '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 **.Now** technology™ which installs relevant game files, displays your player guide, and provides comprehensive off-line support. In addition, it is your gateway to a whole host of on-line services such as technical support, hints, and tips.

You will find everything you need to play your game on this CD, including Adobe Acrobat Reader 4.0, Macromedia Shockwave™ Player, Microsoft Internet Explorer, and any patches and updates that have become available. Sold Out is really isn't a better choice for quality, value, and service.

Sold Out
software
www.sold-out.co.uk



MIGHT & MAGIC VII

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

NEW WORLD COMPUTING 3DO™

Includes Microsoft Internet Explorer and Adobe Acrobat

© 1999 The 3DO Company. All rights reserved. Might and Magic, Blood and Honor, New World Computing, 3DO, and their respective logos, are trademarks and/or service marks of The 3DO Company in the U.S. and other countries. All other trademarks belong to their respective owners. New World Computing is a division of The 3DO Company. All Rights Reserved. Published under license by Sold Out Sales & Marketing Ltd. Adobe, Acrobat, and the Acrobat logo are registered trademarks of Adobe Systems Incorporated. This Sold Out product contains Macromedia Shockwave Player and Macromedia Flash Player software by Macromedia, Inc. Copyright © 1995-2001 Macromedia, Inc. All rights reserved. Macromedia, Shockwave, and Flash are trademarks of Macromedia, Inc. Microsoft and the Microsoft Internet Explorer logo are registered trademarks of Microsoft Corporation in the United States and/or other countries. The installer and associated **.Now** technology incorporated within this product are copyright © 2000-2001 Sold Out Sales & Marketing Ltd. All Rights Reserved.

System Requirements:
 Pentium® 133 (Min.) Pentium® 200 (Rec.); Windows® 95/98 or Me;
 CD-ROM Drive;
 16MB RAM (Min.) 64Mb RAM (Rec.);
 Direct3D™ compatible; 3D Accelerators: 3Dfx®, Matrox, Rendition, 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 IES installation requires 18.5Mb free hard disk space.

RECOMMENDED FOR AGES 15+

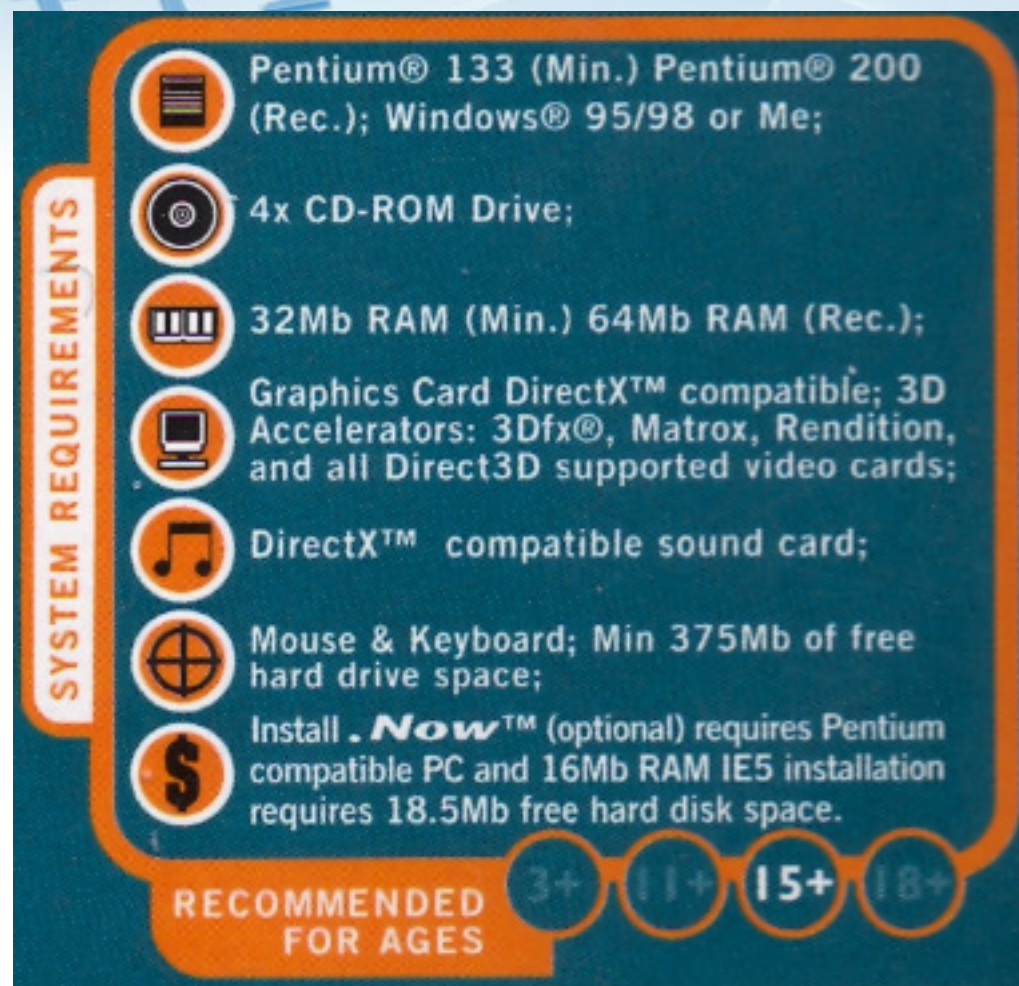
macromedia FLASH ENABLED macromedia SHOCKWAVE ENABLED

5 037999 003403 >










KEEPING EMULATION ENVIRONMENTS PORTABLE

SYSTEM REQUIREMENTS PANEL



A graphic titled 'SYSTEM REQUIREMENTS' with a vertical label on the left. It lists hardware and software requirements for a game, each preceded by an icon. At the bottom, it shows 'RECOMMENDED FOR AGES' with four circles containing '3+', '11+', '15+', and '18+'.

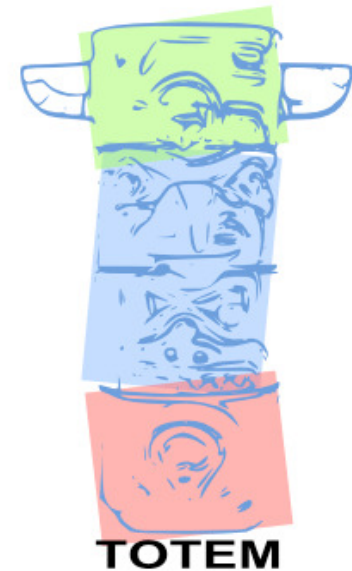
SYSTEM REQUIREMENTS

-  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+

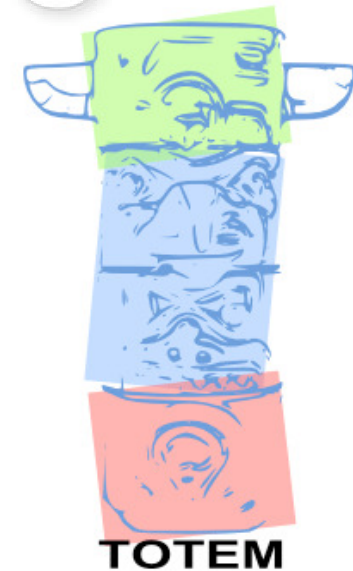
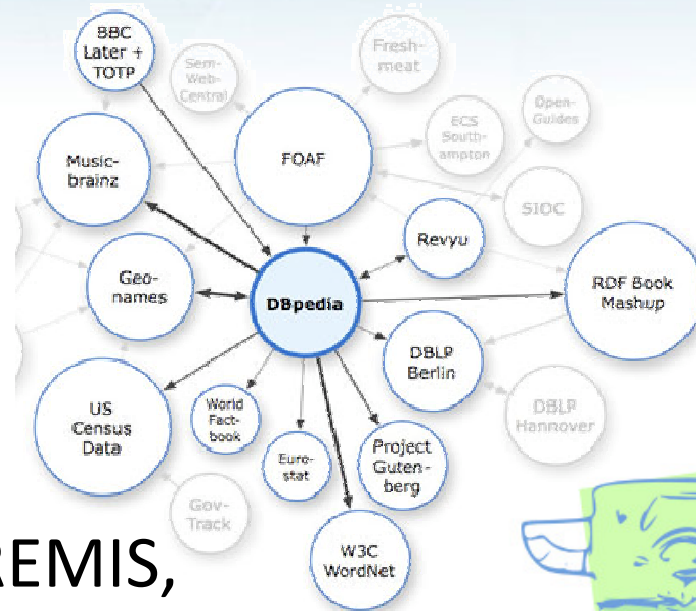
LIBRARY CATALOGUE DATA

- **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?

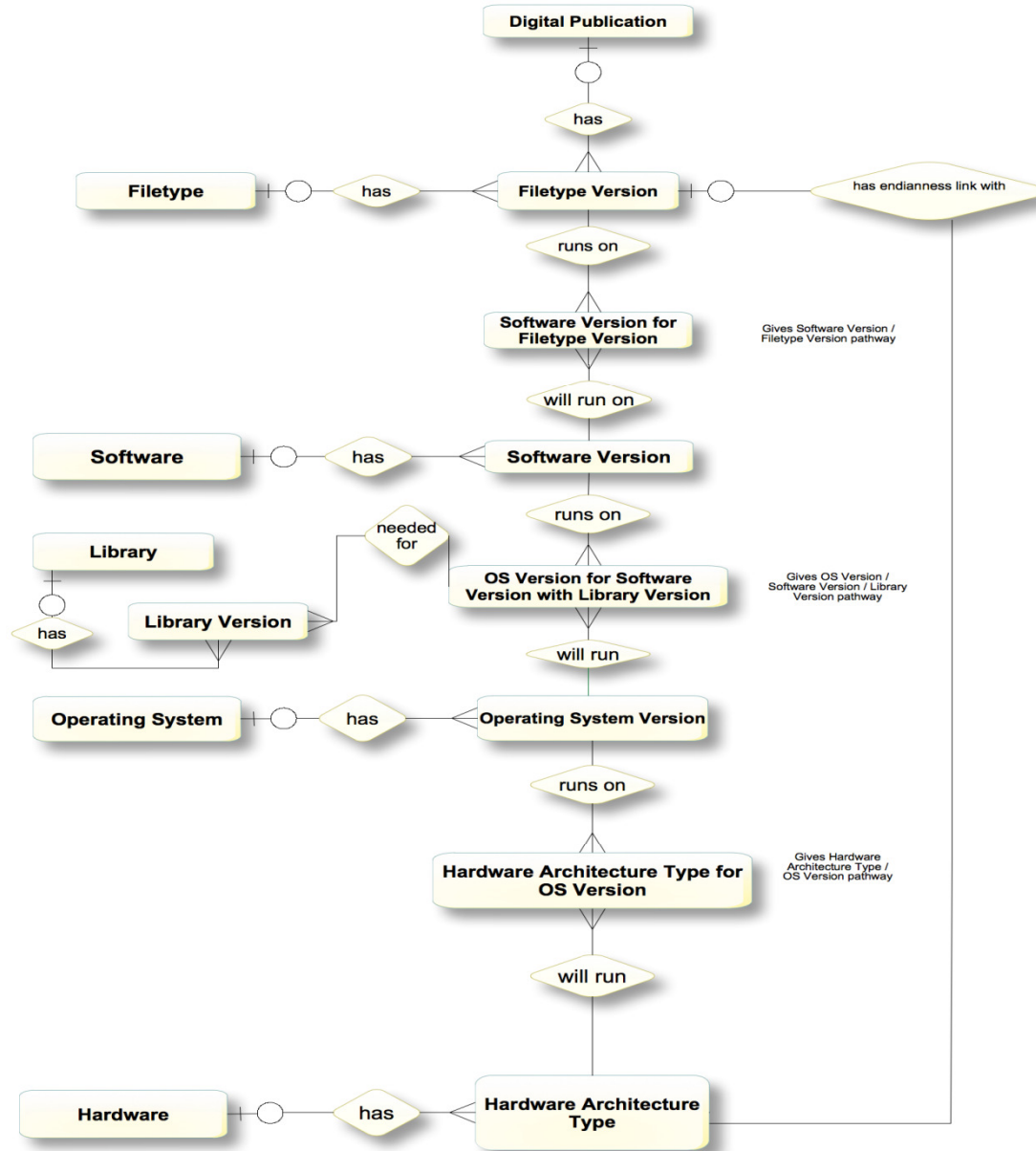


DATA COLLABORATIONS

- Linked Data
- OPF Eco Registry
- Metadata standards – PREMIS, OAIS, Cedars, METS, NEDLIB etc.
- Computer History Museums

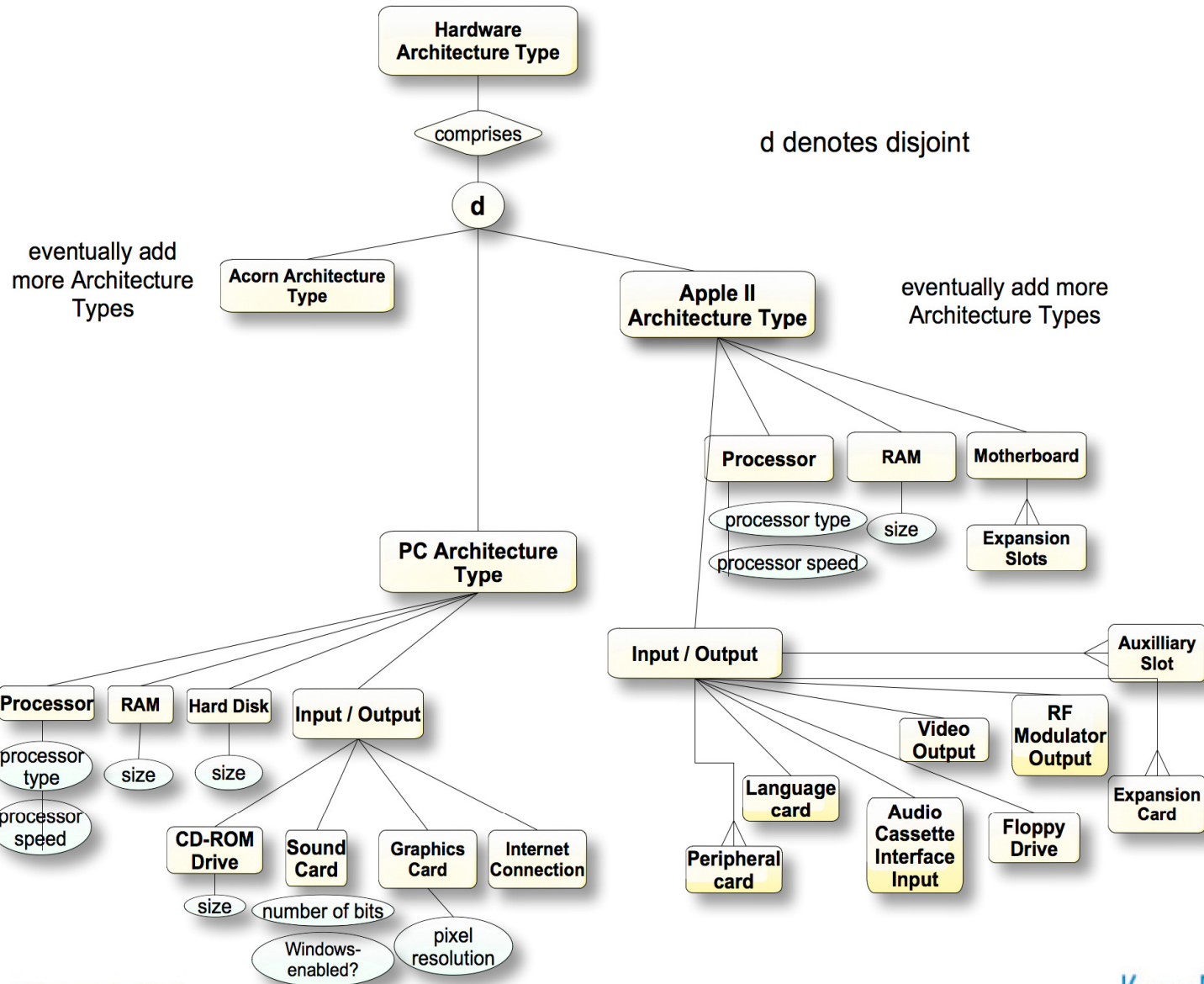


Generic Metadata Model

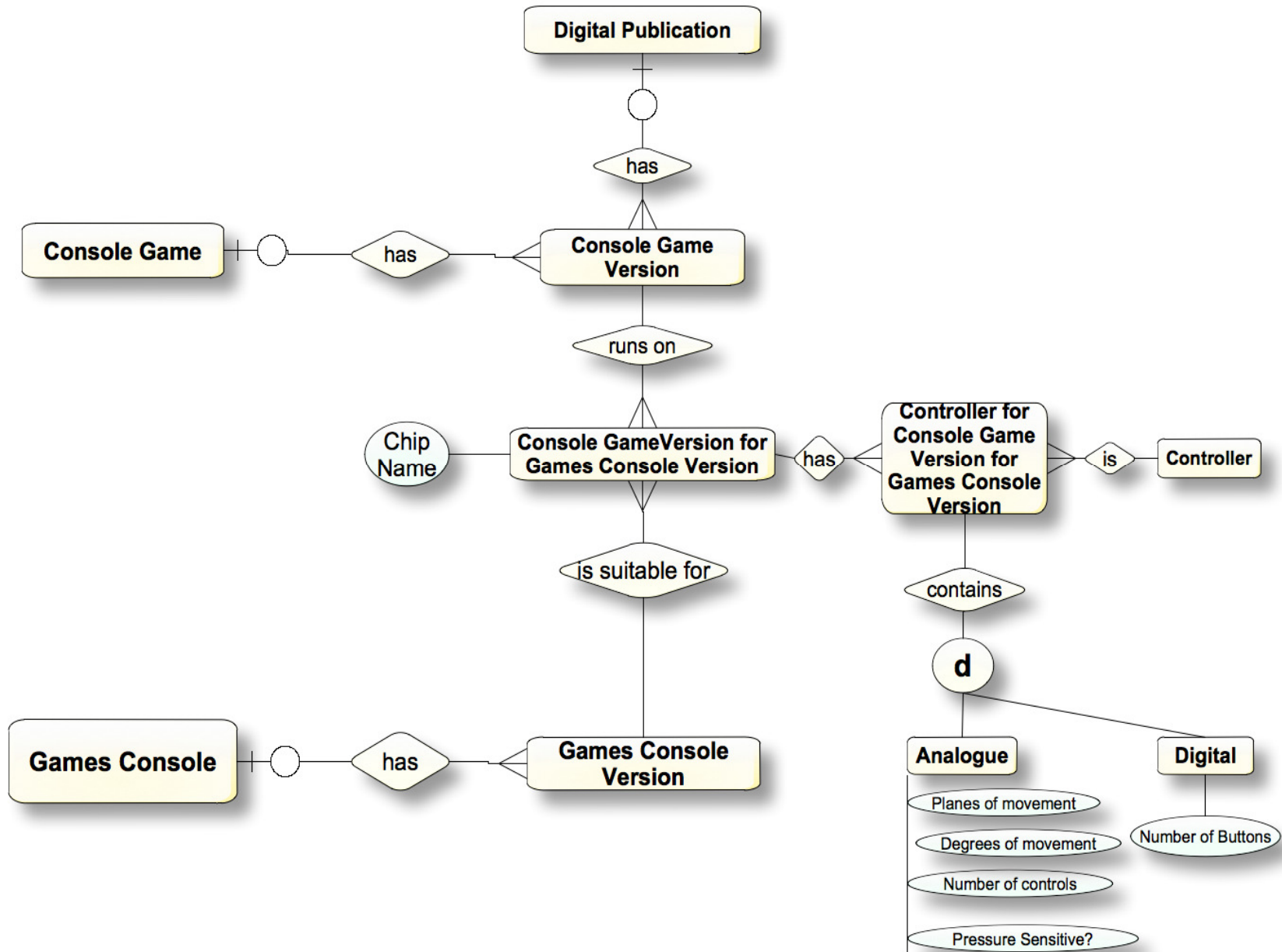


See Expansion of Hardware Architecture Type

Generic Metadata Model for Hardware Architecture Type



Computer Game Example



CONCEPTUAL MODEL / SCHEMA

- 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



KEEPING EMULATION ENVIRONMENTS PORTABLE



The Trustworthy **O**nline **T**echnical **E**nvironment **M**etadata
(TOTEM)
Database

Janet Delve



KEEPING EMULATION ENVIRONMENTS PORTABLE

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...)

Support for 3 technical environments

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



Examples

Input

• Outputs

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

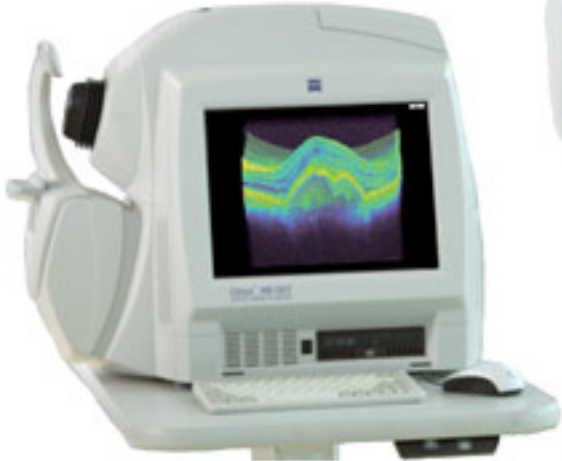
Console Game ID

- 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

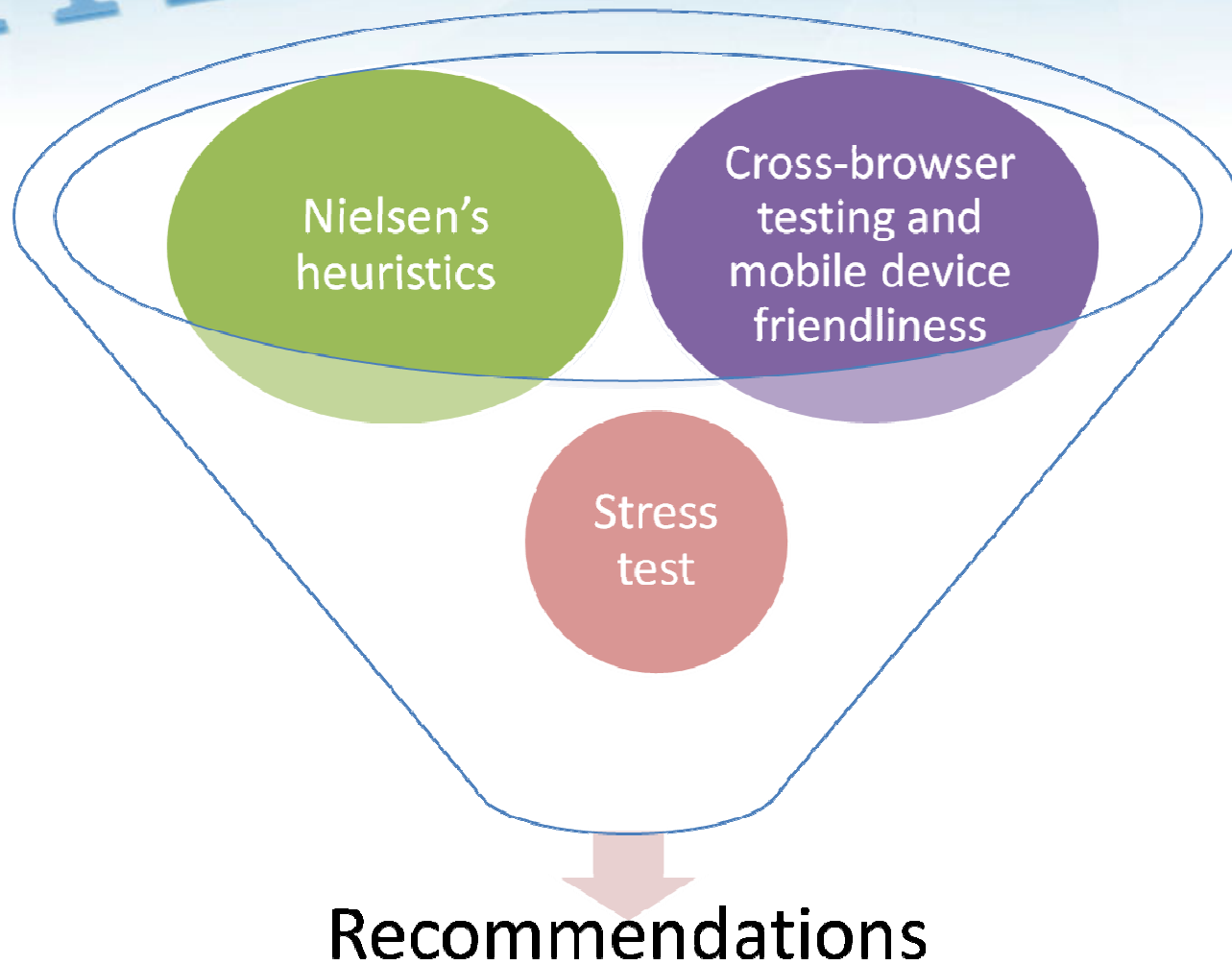


KEEPING EMULATION ENVIRONMENTS PORTABLE

Evaluation Design

Type	How and when it is being used?
Front-end involvement	Scoping study of experience in 3 national libraries and one museum. Informed the development of the emulation platform.
Normative evaluation and testing	Applied as an internal testing of the database and interfaces.
Summative evaluation	Would be done when the emulation platform is released with the participation of key players such as BL, OPF, DCC, DPC.
Direct engagement of wider professional communities	Crowdsourcing for data on the emulator knowledge base is being considered.

Internal Testing (July-August 2011)



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?



KEEPING EMULATION ENVIRONMENTS PORTABLE