Audiovisual cultural heritage

Bridging the gap between digital archives and its users
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Introduction: myself

- Graduated in February 2008 in Business Informatics at Utrecht University
- Master thesis in eHealth domain
- Worked for small research and consultancy firm Dialogic
- Started 1 December with PhD track at University of Twente
**Introduction: the project (1)**

- **Funding partners:**
  - Strengthen relationship NL-BE
  - Similar cultural heritage: Dutch language plus both felt the need for disclosure of content

- **Executors:**

- **Partners:**
Title: Archives on the move

Aim: disclosure of digital archives from a user point of view

Supervisors:

Roughly 3 steps defined:
• Investigate demand and possibilities
• Create demonstrator and business model
• Evaluate demonstrator
2 conditions for useful disclosure:
  • Digitization of content
  • High capacity infrastructure for the users

Dutch situation:
  • 60% of audiovisual heritage is digitalized (funded by the government)
  • 78% of the population has a broadband internet connection

Time to bring the content to the users
Different users:

- Broadcasters
- Profit organizations
- Non-profit organizations
- Education
- General public

(Oomen et al., 2009)
Research objective: IS research

Practical focus

- Audiovisual content
- User

Services → match → Needs

- Broadcasters
- Profit organizations
- Non-profit organizations
- Education
- General public
Research objective: research paradigm

Scientific focus

Two IS Research paradigms:
- Behavioral science: goal is truth
- Design science: goal is utility

Design cycle:

Resulted in IS Research Framework:
Research objective: research paradigm

(Hevner et. al., 2004)
# Design science: guidelines

<table>
<thead>
<tr>
<th>#</th>
<th>Guideline</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Design as an Artifact</td>
<td>Design-science research must produce a viable artifact in the form of a construct, a model, a method, or an instantiation.</td>
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<tr>
<td>2</td>
<td>Problem Relevance</td>
<td>The objective of design-science research is to develop technology-based solutions to important and relevant business problems.</td>
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<td>3</td>
<td>Design Evaluation</td>
<td>The utility, quality, and efficacy of a design artifact must be rigorously demonstrated via well-executed evaluation methods.</td>
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<td>4</td>
<td>Research Contributions</td>
<td>Effective design-science research must provide clear and verifiable contributions in the areas of the design artifact, design foundations, and/or design methodologies.</td>
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<tr>
<td>5</td>
<td>Research Rigor</td>
<td>Design-science research relies upon the application of rigorous methods in both the construction and evaluation of the design artifact.</td>
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<td>6</td>
<td>Design as a Search Process</td>
<td>The search for an effective artifact requires utilizing available means to reach desired ends while satisfying laws in the problem environment.</td>
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<tr>
<td>7</td>
<td>Communication of Research</td>
<td>Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences.</td>
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Work to be done / Methodology (1)

- What is the current situation
  (stakeholders analysis and content flow)
    - Desk research / Literature study
    - Interviews with stakeholders

- State-of-art techniques
  - Desk research
  - Field study

- Define user needs
  - Vignette method
  - Search log files of ‘Sound and Vision’
Work to be done / Methodology (2)

- Development of a service (in collaboration with other parties)
- Development of viable business model based upon STOF model

(Bouwman et al., 2008)
## Evaluation of the service/demonstrator

<table>
<thead>
<tr>
<th>Design evaluation methods</th>
<th>1 Observational</th>
<th>2 Analytical</th>
<th>3 Experimental</th>
<th>4 Testing</th>
<th>5 Descriptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study:</td>
<td>Study artifact in depth in business environment</td>
<td>Static Analysis: Examine structure of artifact for static qualities (e.g., complexity)</td>
<td>Controlled Experiment: Study artifact in controlled environment for qualities (e.g., usability)</td>
<td>Functional (Black Box) Testing: Execute artifact interfaces to discover failures and identify defects.</td>
<td>Informed Argument: Use information from the knowledge base (e.g., relevant research) to build a convincing argument for the artifact's utility</td>
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<tr>
<td>Field Study: Monitor use of artifact in multiple projects</td>
<td>Architecture Analysis: Study fit of artifact into technical IS architecture</td>
<td>Simulation - Execute artifact with artificial data</td>
<td>Structural (White Box) Testing: Perform coverage testing of some metric (e.g., execution paths) in the artifact implementation</td>
<td></td>
<td>Scenarios: Construct detailed scenarios around the artifact to demonstrate its utility</td>
</tr>
</tbody>
</table>
Premature thinking: long tail

- broadcast of program
- program accessible through Video on Demand (online or television)
- cultural heritage
Stakeholders and content-flow are identified

**Process**
- Producing
- Packaging
- Aggregating
- Distributing
- Consuming

**Stakeholders**
- Broadcasting companies
- Cable companies
- Consumers
- Production houses
- Technical facilitators
- Internet Service Provider
- Studio facilitators
- Content distributors

**Details**
- pre-production
- production
- post-production
- ingestion
- encoding
- transcoding
- dubbing
- (dub) localization
- scheduling
- monitoring
- execute objective
- portable media
- television
- pc
- mobile
- general public
- profit organizations
- non-profit organizations
- education
- broadcasters
Research gaps / Expected contribution

Practical relevance
• Service for general public
• Business model for “Sound and Vision”

Scientific relevance
• Evaluation of design research
  ✦ e.g. how does a vignette study fit in design research?
  ✦ e.g. is the model of Hevner et al. complete?
  ✦ e.g. how are the guidelines connected and fitted into the model?
• Contribution to several domains:
  ✦ User modeling
  ✦ Business models for cultural heritage
  ✦ Use and usability of services
Thank you for listening

🌟 You can contact me via:

- g.ongena@utwente.nl
- linkedin.com/in/ongena
- twitter.com/gongena