Utility Analysis for Digital Preservation
Choosing the Optimal Digital Preservation Solution

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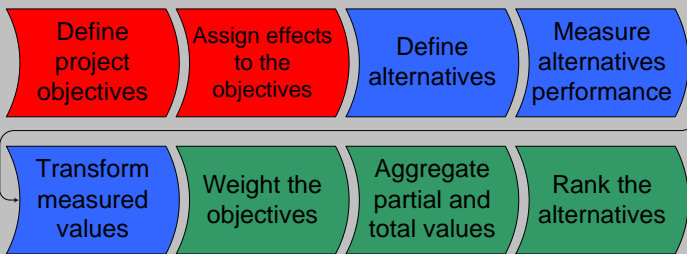Vienna University of Technology
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Motivation

- Several preservation strategies developed
- Right choice depends on the data collection and its usage
- How do you know which one is most suitable?
- What are the preservation requirements?
- How to measure and evaluate the results of each preservation strategy?
- How to define a controlled and trusted environment and a procedure for applying or testing preservation strategies?

Solution: Utility Analysis which,

- Evaluates different preservation strategies in a consistent manner
- Enforces the explicit definition of preservation requirements
- Enables informed and well-documented decisions
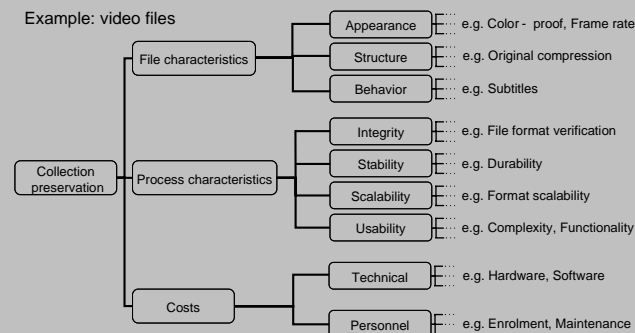- Establishes and maintains a trusted preservation process/procedure
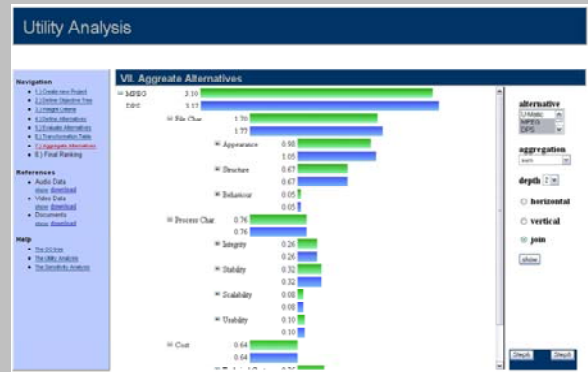
Workflow

- ➢ **Define project objectives**
  Define goals and requirements and construct the *Objective Tree*
- ➢ **Assign effects to the objectives**
  Assign measurable effects and units to each leaf
- ➢ **Define alternatives**
  Select alternatives for evaluation, such as specific migration tools or emulators
  Process the sample objects with selected preservation alternatives
- ➢ **Measure alternatives performance**
  Measure performance of each alternative for each leaf of the *Objective Tree*
- ➢ **Transform measured values**
  Transform obtained measures to a uniform, comparable scale
- ➢ **Weight the objectives**
  Define the relative importance of objects depending on specific preferences and requirements
- ➢ **Aggregate values**
  Calculate a single weighted value per alternative
- ➢ **Rank the alternative**
  Review results with respect to weighting sensitivity or external criteria

Objective Tree

- Definition of all relevant goals and characteristics (high-level, detail) with respect to a given application domain
- Specific to each individual preservation setting
- Based on Generic Objective Tree

Software

- Software support for the evaluation process (Web based, JSP, MySql)
- Single performance value for each alternative to rank the alternatives
- Single performance values for each alternative for each sub-set of criteria to identify the best combination of alternatives
- List of preservation alternatives ranked by performance

Case Studies

- ➢ Audio records of the Austiran Phonogram Archives
- ➢ Video records of the Autsrian Phonogram Archives
- ➢ Document records of the Dutch National Archives

Current Activities

DELOS DP Testbed
- ➢ Integration of the Dutch Testbed
- ➢ Extension of the workflow (14 steps with focus on the experiments)
- ➢ Adaption of the Software for supporting the DELOS DP Testbed

Case studies for
- ➢ Thesis publications with the Austrian National Library
- ➢ DB-Preservation