Evaluation Criteria and Measures for Digital Preservation Practice

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Introduction and Methods

This poster presents part of a larger project that develops an evaluation framework for digital libraries. Based on a document analysis, we identified a range of evaluation criteria and measures for different dimensions of digital libraries including digital preservation. In this poster, we report on the evaluation criteria and associated measures specifically designed for digital preservation practice.

To validate those criteria and measures, we conducted two rounds of online surveys with 30 digital library scholars and 30 digital library scholars. The purposes of the surveys were: (1) prioritize the importance of evaluation criteria (round 1), and (2) confirm the appropriateness of measures (round 2). A seven point Likert scale was used to collect feedback from the participants.

Evaluation Framework

As shown in Table 1, this study identified seven criteria applicable to evaluation of digital preservation practice. These evaluation criteria are suggested to assess different aspects of digital preservation, including migration, process, policy, infrastructure, methods, institutional support, and cost.

Criteria	Definition
Ability to migrate	To assess the ability of data migration for preservation.
Process completeness	To assess to what extent the archiving process to preserve archived materials is complete.
Preservation policy	To assess whether a policy regarding preservation is developed and what is covered in the policy.
Preservation infrastructure	To assess the types of archiving equipment and facilities used for digital preservation
Types of archiving methods	To assess the types of archiving methods librarians or staff need to apply for digital preservation.
Institutional support	To assess the types and amount of support or incentives provided by an organization.
Cost per record	To assess the average cost for archiving one record.

Evaluation Criteria

In the first round, the importance of evaluation criteria was surveyed using a seven point Likert scale. The purpose of the first round was to prioritize the importance of evaluation criteria for digital preservation practice from the perspectives of two different groups of experts, including digital library scholars, and digital librarians. "Ability to migrate", "process completeness", and "preservation policy" were ranked 1st, 2nd and 3rd respectively. "Institutional support", "types of archiving methods", and "cost per record" were less important according to the survey. Interestingly, librarians rated the highest importance to the criteria of "ability to migrate", but they perceived less important for "cost per record" compared to the scholars group. The librarian participants also rated preservation infrastructure more important than the scholars did. Overall, both the groups perceived the criteria of migration ability and process completeness are important in evaluation of digital preservation.

Criteria	Scholars	Librarians	Total
Ability to migrate	6.21	6.45	6.33
Process completeness	6.07	6.23	6.15
Preservation policy	5.97	6.00	5.99
Preservation infrastructure	5.66	6.16	5.91
Types of archiving methods	5.66	5.90	5.78
Institutional support	5.72	5.74	5.73
Cost per record	5.69	4.87	5.28

Evaluation Measures

Then, the participants were asked to rate the appropriateness of specific measures for digital practice using a seven point scale. As shown in Table 3, the two measures related to migration were rated highly: migratable data type (6.036) and exporting capability (6.309). Also, the presence of preservation policy was perceived highly appropriated (6.164). Those measures related to infrastructure or institutional support were also perceived adequate for digital preservation evaluation. On the other hand, "components of preservation policy (5.618)", "refresh frequency (5.473)", and "preservation cost per record (5.400)" were rated less appropriate to be used to evaluate digital library practice.

Criteria	Measure	Explanation	Response
Ability to migrate	Migratable data type	Types of data that can be migrated to other systems	6.036
	Exporting capability	Whether it is possible to export data in different formats for preservation	6.309
Preservation policy	Presence of preservation policy	Existence of a documented policy regarding preservation practices	6.164
	Components of preservation policy	Types of components in the preservation policy	5.618
	Strategies of preservation	Types of strategies presented in the preservation policy	5.655
Preservation infrastructure	Types of preservations tools	Types of preservation tools offered (e.g. local repositories, shared repositories, outsource archives, etc.)	5.782
Institutional support	Types of support	Types of support offered by the institution (e.g. staff, budget, etc.)	5.855
	Level of support	The extent of support offered from the institution	5.909
Cost per record	Preservation cost per record	Average cost for preserving a record	5.400
Ability to refresh	Refreshable data type	Types of data that can be refreshed	5.618
	Refresh frequency	How frequently data are refreshed	5.473