

The Case For Yet *Another* Digital Preservation Evaluation Tool

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Abstract

Early 2013 DEN and PACKED launched a score model for the preservation of digital collections (scoremodel.org). The model is intended as a self-evaluation tool: organizations that host and/or manage digital collections can use the Score model to identify the potential threats to the long-term viability and accessibility of digital collections. In contrast to OAIS-oriented tools such as ISO 16363, the Score model is aimed towards smaller institutions, who have limited technical and organizational competencies. The criteria in this checklist are grouped around seven sections, in each of which a limited number of criteria are given, using as little technical jargon as possible. The resulting report can be used as a planning tool to systematically tackle the threats to digital preservation. By introducing risk levels, organizations are triggered to prioritize actions and to focus on measurements that are most important to take.

Motivation and Aim Behind the Score Model

Early 2013, Dutch and Belgian cultural heritage supporting organizations DEN and PACKED, launched a *Score model for the Preservation of Digital Collections* [1]. The motivation and aim to create yet *another* digital preservation evaluation tool was the wish to facilitate an online self-evaluation tool, which can be easily used by smaller or less technical oriented institutions. The existing evaluation tools are mostly documents with a high level of complexity, full of technical and OAIS jargon and therefore not very accessible (in terms of use) to less experienced users. Clearly these tools are often meant as the basis for (external) audits [2], mostly executed by experts in the field.

However justified this complexity may be in regard of the arduous domain of digital preservation, these tools carry the risk of resulting in the opposite effect, in which inexperienced users drop the case for digital preservation altogether.

The *Score model* is explicitly intended as a *self-evaluation* tool: organizations that host and/or manage digital collections can use the *Score model* to identify the potential threats to the long-term viability. It is meant as a first step in auditing the digital preservation readiness of an organization. In this respect the *Score model* is complementary with and preparatory to an ISO 16363 (or other) audit.

The choice for an easy-to-use, self-evaluating tool was made on the presumption that institutions by using the tool would be more inclined to critically view their own digital preservation policy, expertise, systems and workflows. The format of an online score model was chosen because of the easy accessible and interactive nature of such a tool. Also an online tool can be easily managed and the user results can be easily published and (if wished for) shared.

Building the Score Model

The actual online tool was built and designed in house by a PACKED developer. To broaden the range of users, the tool was developed both in an English and Dutch version. The concept versions of the model were tested by a broad group of potential users and digital preservation specialists. On the basis of their comments, the model was adapted and refined to the current version.

User Results

An important quality of the *Score model* is that the results are not shared with any other parties than PACKED and DEN. This was considered essential as the data produced are in many cases of a confidential nature. Users can also choose to partake as an anonymous party. Registered users though have the advantage to always be able to return to their own report(s) and eventually review them. This gives them the possibility to fill in the criteria at their own tempo and - by creating reports at different moments - get a view how they are developing over time.

Relation With Other Evaluation Tools

The model is based on several well-known audit tools and evaluation checklists for digital preservation as for instance the *Trusted Digital Repository (TDR) Checklist* (ISO 16363) [3], DRAMBORA [4] and the *DANS Data Seal of Approval* [5] and was inspired by a concept of the *Digital Preservation Capability Maturity Model* [6] by Charles Dollar. Like most of these tools, the *Score model* focuses on both technical and policy/organizational related considerations.

One of the big challenges of building the *Score model* was translating the often complex and interlinked terminology of these tools and checklists into understandable, but not simplistic criteria. Also for the sake of conciseness the amount of criteria had to stay within reasonable bounds. This meant that sometimes two or more criteria had to be combined into one broader criterion. In some cases, the authors even decided to omit very exigent criteria. This took some effort and sometimes difficult choices.

Criteria and Risk Levels

The model contains in total 62 criteria, which have three risk levels (high-normal-low). Each criterion has some context information, an explanation of the risk when no action is undertaken and an example.

The criteria are divided into seven sections: organization and policy, preservation strategy, expertise and organization, storage management, ingest, planning and control and access. These follow more or less the logical order used in the different evaluation tools.

1 The sustainable preservation of the digital objects is in line with the mission or goals of the organisation.

Context Risk Example

yes
 no

Risk level high

For its normal operation, the organisation cannot provide sufficient means and staff to maintain the digital objects on a permanent basis.

6 The submitted file is also always preserved in its original file format.

Context Risk Example

yes
 no

Risk level low

By storing the digital object in its original format, it remains in principle still possible to open the file (if necessary by emulation).

7 In cases where migration is impossible, obsolete formats are emulated.

Context Risk Example

yes
 no

Risk level normal

An organisation wishes to preserve computer games in such a way that the games can still be played. An Atari emulator is used for playing Pacman.

Figure 1. Examples of three different criteria of a – respectively – high, medium and low risk nature. Also the different tabs - context, risk and example - are selected.

In terms of scores, the sections are each of equal value, but they are different in length. For instance the ingest section contains 15 criteria and the access section 7. This gives an indication of the complexity of the ingest phase in comparison to the access phase.

For each of these sections a maximum score of 100 points can be earned. One of the “teasing” parts of the model is that the user has to firstly fulfill all high risk criteria before scores for the medium and low risk level criteria will even be taken into account. The idea behind this is that you first have to solve the high risk challenges before you bother with problems of a lower impact.

Although the choice for the criteria’s three risk levels were carefully considered, these choices are always slightly arbitrary. Users of the *Score model* might for some criteria think otherwise and change the risk levels according to their own judgment and institutional context. That said, the *Score model* user at this moment has no possibility to change the risk levels according to their own wishes. This is one of the possible future adaptations to the web tool.

Final Report and Action Plan

When the user has filled in all the criteria a report can be produced and downloaded (as PDF). Firstly a radar chart is shown in which the user can see how he has scored on the different sections at a glance.

This is followed by a list of “actions” (i.e. all the criteria where the user has selected “no”) which must be undertaken to get to a higher level of “trustworthiness”. By taking in account the different risk levels, organizations are stimulated to prioritize actions and to focus on measurements that are most important to take. In this way the *Score model* can also be used as a digital preservation planning tool and an action plan.

The report ends with a list of all the criteria and the user’s answers.



Figure 2. Example of the radar chart in which the scores for the different sections can be seen.

Challenges

Of course a model like this is never finished and must always adapted to corrections, better formulations and new insights. The challenge in this case is to properly inform existing users of the new versions so they will not be disappointed or disorientated when they compare results with earlier made reports. Good and clear version management is essential.

Another challenge is the privacy of the data. Of course user information like this can be quite sensitive and so protection must be secured. It might be necessary to make the score model more robust in this respect.

On the other hand, information like this can be used to monitor how organizations are developing in the field of digital preservation. We are thinking of methods where information is reused in a acceptable (users have to be asked for agreement), non-interfering and anonymous way. At the same time we would like to have some information about the nature of the institute (big, medium, small, museum, archive, library etc.) for the data to be meaningful.

As mentioned before, a future development taken into consideration is to allow users to adapt the criteria’s risk levels to their own institutional context. Of course this has some serious disadvantages. The model web tool will become more complicated and harder to manage. A more serious drawback will be that the model’s reports will lose their mutual comparability.

A challenge is lastly to find out how users are using the model and how (dis)satisfied they are. The inclusion of a non-interfering and non-too-time-consuming user survey tool is a serious consideration.

Broader Implications

As jargon free and technical understandable as we tried to make the model, some parts of the model may still be hard to be fill out. As the model covers the whole spectrum from institutional policy, financial and organizational practices, preservation planning, ICT strategies and dissemination, it might be a challenge for one person to give answers to all criteria.

This is of course a bigger problem than the *Score model* itself. The broad implications of implementing digital preservation policies in an organization are exactly why digital preservation is still very problematic for a lot of cultural heritage institutions. The feeling of urgency and the (costly) investments needed in people, knowledge, soft- and hardware may, in the daily battle for other priorities, be snowed under or even (willfully) ignored. Of course the *Score model* as an instrument cannot solve this lack of commitment and/or feeling of urgency. However it can help giving insight where the major obstacles lay and where first steps towards digital preservation “trustworthiness” might be taken.

Lastly an unspoken implication of the model’s end results might be that the challenges faced when creating a digital preservation ready organization are so high that outsourcing parts, or even the whole, of the preservation process becomes a serious consideration. Cooperation with other organizations facing the same challenges may of course also be a strategy

Conclusions

The *Score model for the preservation of digital collections* has now been online for almost a year. It has been used by a diverse group of institutions mainly from the Netherlands, Belgium and the United States. The case has been proved for an easy accessible and understandable tool, which will guide institutions towards better digital preservation policies and practices. As the model is based on existing digital preservation evaluation methods like ISO 16363, the wheel has not been reinvented. The *Score model* is a self-evaluation tool and is a first step toward a full swing external ISO 16366 (or similar) audit. Broader implications of using the model might be that organization might consider outsourcing parts of the digital preservation process or start cooperating with other organizations facing the same challenge.

References

- [1] URL: scoremodel.org, <http://www.packed.be/en/>, <http://www.den.nl/english>
- [2] With the exception of the DANS (Data Archiving and Networked Services) *Dataseal of approval* which is also a self-evolution tool (URL: <http://datasealofapproval.org/en/>) used in the context of persevering scientific datasets.
- [3] URL: <http://www.crl.edu/archiving-preservation/digital-archives/metrics-assessing-and-certifying/iso16363>.
- [4] URL: <http://www.repositoryaudit.eu/>.
- [5] See note 2.
- [6] As yet the *Digital Preservation Capability Maturity Model* seems to have no internet resource. Some explanation about the DPCMM can be found at: <http://www.savingthedigitalworld.com/resources/digital-preservation-capability-maturity-model> [retrieved November 2013].

Author Biographies

Robèrt Gillesse (1967) studied history at the University of Leiden. He has worked as researcher and quality manager for different digitization projects at the National Library of the Netherlands (KB) and the City Archives of Amsterdam. Currently he works as senior consultant at the DEN (Digital Heritage Netherlands) Foundation. In this capacity he is responsible for the stimulation of standardization and interoperability of digitization projects within the Dutch cultural heritage sector. He specializes in digital preservation, validation of standards, image quality assurance and still image file formats.

Henk Vanstappen (1964) has a master degree in History (University of Brussels) and Information Sciences (University of Antwerp). He has worked as an information management expert and project manager in several cultural heritage institutions in Belgium and the Netherlands. Currently he is senior researcher at PACKED – Flemish expertise center on digital cultural heritage, where he is responsible for the development of digitization guidelines for the Flemish cultural heritage sector (projectcest.be). Since 2010 he is also working as an independent advisor in the domain of digital preservation and digital strategies for heritage institutions.