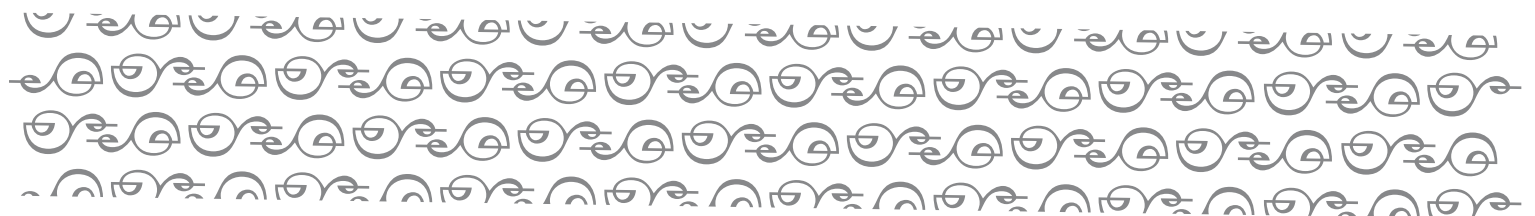




<http://bd.camara.leg.br>

“Dissemina os documentos digitais de interesse da atividade legislativa e da sociedade.”



Digital Preservation Policy of The Chamber of Deputies¹

Methodology for its development

Ernesto C. Bodê

Abstract

It's about the practical methodology used for writing the Digital Preservation Policy of the Brazilian Chamber of Deputies. The methodology uses the principles of work structuring, using macro steps to achieve the final text of the policy. In this work, we aim to derive and present the methodology in a way that might be applied by any other institution. To illustrate the use and application of the methodology, we present how the real work was done in the project. The main final products of the proposed methodology are also presented.

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1. Introduction

The objective of this paper is to present a practical methodology for the creation of an *Institutional Digital Preservation Policy*. This methodology was derived from our own experience in a project for the creation of a digital preservation policy in *The Chamber of Deputies* (National Congress of Brazil). First we present an overview of the methodology and the necessary stages proposed for implementing it. For each stage we present the goal and the general idea inside it. In addition, each stage contains a description of the way that effectively performed the proposed procedures. For each stage, we also present the real products produced in the *Chamber of Deputies*, i.e., reports, studies, up to the final product which is the final text of the policy. The policy that originated the execution of our work is in final form adopted by *The Chamber of Deputies*. Before discussing the methodology itself, we shortly present some concepts used throughout the paper.

2. Methodologies and Institutional Policies

Professionals will always devise ways to perform their regular work tasks. However, the pace of work and speed requirements often dictate how tasks should be performed, regardless of whether or not this is the best possible way to perform such tasks. Careful planning and the use of an adequate methodology, like the one described here, will help to mitigate this problem. Another advantage of using previously designed methods is that this will make it possible to promote further improvements in the procedures.

¹ The Brazilian Parliament is called *National Congress*. Brazil has a bicameral legislative assembly, composed by *The Chamber of Deputies* and *The Federal Senate*.

In this work, a methodology is understood as “A set of guidelines or principles that can be tailored and applied to a specific situation.”²

We are dealing here with institutional policies, i.e., a set of high level guidelines, applicable to an organization. In this article, the concept of policy is understood as follows: “*predetermined course of action established as a guide toward accepted business strategies and objectives.*”³

3. The Methodology Used

The use of previously *tested* and *approved* methodologies for the implementation of any project is always an approach that leads to better qualitative and quantitative results, e.g., reduction in the total number of hours spent in the project.

Like many institutions worldwide, *The Chamber of Deputies*,⁴ has felt the impact of the use of digital documents and technologies on their work processes. Therefore, there is a clear need for a digital preservation policy that provides greater security for the collections of digital documents. However, regarding projects aimed to assist in the implementation of policies, and more specifically, digital preservation policies, no tested practical methodologies are publicly available for use and for the development of a project like the one developed in our institution. In this scenario we had to propose and adopt a new methodology of working. Using this methodology allowed it to be tested and improved. In fact, our current knowledge on this now tested methodology has only been possible after the completion of all the stages that culminated with the official version of our *Digital Preservation Policy*.

We highlight two benefits of the use of the proposed methodological approach, besides the advantage of having already been tested with *actual available products*, that is, with a *Working Model* to guide the activities' path. First benefit: reduction in **subjectivity**. Policy texts are always elaborated by people, that is, they are products of human intellect. Hierarchical and personal differences within a team can cause some opinions to prevail over others. Also, besides the misunderstanding that may arise from this process, the views that prevail are not always the most appropriate, even if they are expressed by experts. Anyway, some degree of subjectivity will always exist, but we believe that the use of the methodology proposed here will help to mitigate this problem.

Second benefit: parallel to the problem of subjectivity is the need for theoretical **argument** for the guidelines in the policy text. Through the use of the methodology, each guideline is well-founded, and, consequently, the whole internal discussion and persuasion process tends to be smoother. Again, as it is something produced by people and as part of institutional negotiation processes, some guidelines may exist that are obtained through an institutional negotiation process rather than through the use of technical reasons. However, this problem is also expected to be mitigated. The reasons we support these two benefits will be clarified after the presentation of the methodology itself.

The methodology proposed here is not complex. It is rather an eight-stage methodological work, each one delivering an **actual product** (presented and exemplified below). The last product is the official version of the policy adopted by the institution.

² Jason Charvat, *Project management methodologies: selecting, implementing, and supporting methodologies and processes for projects* (New Jersey: John Wiley & Sons, 2003), 3.

³ Stephen B. Page, *Establishing a system of policies and procedures* (Ohio: BookMasters, 1998), 2.

⁴ <http://www2.camara.gov.br/english>.

The methodology is grounded on the **Technical Reasons** for proposing guidelines for drafting a **Digital Preservation Policy**. This reasoning shall be based on an *Initial Source* of information on *Digital Preservation* and the establishment of a *Areas* for the policy text. The *Initial Source* is the basis for the construction of the *Areas*. As soon as the *Areas* are available, the other steps of the process take place with the guidelines being drafted before the final official version is obtained and ultimately approved. Also, a step for the procedures of internal discussion and persuasion process regarding the policy text is proposed.

As part of the methodology, the adoption of consolidated technical standards is suggested, not only regarding *Digital Preservation*,⁵ but also *IT Governance*,⁶ *Repositories*⁷ and *IT Security*.⁸ In addition, previously defined technical terms must be included, and a *Glossary* of the terminology used in the policy text must be provided, which shall contain all of these technical terms. These technical words will be gradually added to the *Glossary* throughout the eight-stage process and the latter will finally be added to the final product as an *appendix*. The use of a *Glossary* of terminology based on widely known technical terms avoids lengthy discussions on the concepts used in the policy.

The search for institutional support to develop the project in the case of *The Chamber of Deputies* and the selection of the team responsible for project management up to the step of discussion with the other members is not listed here as a stage in the policy development process, though it is a key “pre-processing step.”

3.1 The Stages of the Methodology

The methodology developed and used in the elaboration of the *Digital Preservation Policy* in *The Chamber of Deputies* involves an eight-stage process:

- Original Source
- Areas
- Pre-guidelines
- Minute Drafting
- Internal Persuasion
- Official Formal Writing
- Official Approval
- Revision

3.1.1 Original Source

Overview

Each new policy to be developed includes a specific domain of technical knowledge related to the main theme addressed. In this step of the process of elaboration of the policy, the project team should collect all the technical information available on **Digital Preservation**, **Institutional Policies** and **Digital Preservation Policies** to support the project. It is desirable that at least one member of the team has expertise in *Digital Preservation*. Alternatively, support can be sought from external consultancy.

⁵ See ISO/TC 46/SC 11 Digital Records Preservation.

⁶ See ABNT NBR ISO/IEC 38500:2009.

⁷ See ISO 14721:2003.

⁸ See COBIT 4.1.

The source of this particular information can be scientific papers, institutions that developed similar projects and experts on topics of interest. *Digital Preservation Policies* already done or similar works from institutions that have already developed such projects are an excellent source of reference for the proposed activities.

How we did it

With respect to *The Chamber of Deputies*, the team has always relied on the assistance of a *Digital Preservation* expert. Thus, the necessary expertise has been naturally incorporated into the project. On the other hand, as we explained above, the specific issue of *Digital Preservation Policies* has been little explored and not much information has been made available to the public. The alternative adopted in this stage was the development of a *benchmark* for policies or similar strategies elaborated or adopted by other institutions.

After a preliminary study with technical definitions on the *basics* of digital preservation, we carried out a survey and identified thirteen policies or similar texts available in the Internet to support our *benchmarking* activities. These texts are listed in Table 1.

Table 1. References for the original source.

INSTITUTION	COUNTRY	TITLE OF THE WORK
Direção Geral de Arquivos, Ministério da Cultura	Portugal	Repositório de objetos digitais autênticos: política de preservação digital
National Library of Australia	Australia	Digital Preservation Policy
UK Data Archive	United Kingdom	UK Data Archive Preservation Policy
National Library of Wales	United Kingdom	Digital Preservation Policy and Strategy
Online Computer Library Center	USA	OCLC Digital Archive Preservation Policy and Supporting Documentation
University of Minnesota	USA	University Digital Conservancy Preservation Policy
Yale University Library	USA	Digital Preservation Policy
Arts and Humanities Data Service	United Kingdom	Collections Preservation Policy
Columbia University Libraries	USA	Policy for Preservation of Digital Resources
British Library	United Kingdom	BL Digital Preservation Strategy
State Library of Victoria	Australia	Digital Preservation Policy
Inter University consortium for political and social research	USA	ICPSR Digital Preservation Policy Framework
Cornell University Library	USA	Cornell University Library Digital Preservation Policy Framework

Note: All documents available online Mar/2010.

An analysis of each source identified in the *table 1* has been made to highlight the most important points and the standards adopted.

Products delivered

Report 1 that includes a preliminary study on concepts of digital preservation and *benchmark work* with thirteen institutions previously identified and assessed.

3.1.2 Areas

Overview

The specific knowledge on *Digital Preservation* and research on previous policies or similar strategies is aimed to enable, in the second stage of the process, the development of *Areas* for the policy text.

One key principle for the development of a methodology is decision making based on pre-established and consistent criteria. In *stage 1*, the purpose of the research on knowledge about digital preservation approaches was meeting the referred principle. The development of *Areas* for the policy text will allow the pursuit of the project based on criteria aimed to mitigate the inherent subjectivity of a work team, even in the final steps where other actors will participate in the policy refinement process.

The name and purpose of each *Area* are defined based on information provided in *stage 1*. Another advantage of the use of *Areas* is that it makes it possible to streamline working procedures so that team members are assigned different areas.

How we did it

The study of *Report 1* project led to the establishment of eight⁹ *Areas* to be contemplated in a *Digital Preservation Policy*. There is no exact match between these eight areas and the parts of the policy text. What matters here is to establish all the key elements to be contemplated.

1st Area: Aims of the policy and its establishment

It is about the purposes of the institution that elaborates this policy and clarification of the relationship between these aims or objectives with the policy currently under construction.

2nd Area: Objectives of the policy

It is about all the aims or objectives of the policy currently under construction. The following items specify guidelines for action, but the more general aims and objectives should be recorded in this part of the policy text.

3rd Area: Relationship with other policies

It is about the relationship of the text of this policy with other policies or strategies of the institution, or else with available legislation related to the objectives and actions set out in this policy. Specifically mention the standards to which the policy complies and upon which it is based.

4th Area: Scope of the policy

It is about the scope of the digital documents comprised by the policy. Non-scope can also be stated. Another possibility is to establish the priority for action in relation to the groups of digital documents within the defined scope, thus, prioritizing some digital documents over others. This is a solution to the problem of accepting a wide scope and, at the same time, prioritizing some groups of documents more relevant to the institution. When priorities for action are defined, the levels of support for some file formats are also defined. However, because of their importance, file formats should be addressed separately.

5th Area: What and how to preserve

It is about what the policy is committed to preserving in digital documents (specifying the documents) and for how long, e.g., preserving only the bit sequences, access to content and/or its relationship to the social context in which it was created. The commitments made directly affect the complexity of the

⁹ Different projects in other institutions could derive more or less than eight areas.

actions to be implemented to comply with the referred commitments. Therefore, attention should be paid to the possible scenarios before accepting a certain level of commitment.

6th Area: Cooperation with other institutions

It is about declaring that the institution cooperates or intends to cooperate with other institutions. This element needs special attention, for it is necessary to ensure that the institution really intends to establish ties with other institutions. It could also be introduced in future versions of the policy.

7th Area: Roles and responsibilities

It is about the roles and responsibilities undertaken by the different bodies and offices of the members of the organization regarding *Digital Preservation*. This element will be the product of the study of all the actions set by the policy text in its relation to the different bodies and offices of the members within the organization.

With respect to the responsibilities undertaken, pay attention to the *Open Archival Information System (OAIS)*.

8th Area: Governance

For this group, perhaps more important than defining what to do and how to do it, is establishing guidelines on the periodical updating of these recommendations. For example, the establishment of an *Internal Management Committee*¹⁰ for periodically reviewing the policy text and suggesting changes to the subsequent versions of the text. The content of this element involves recommendations of specific accepted and recommended Technologies, as well as the necessary procedures, the most important items include:

1. Document and track changes made to formats, media or any other technology used during the custody of digital documents;
2. Who will evaluate the file formats recommended for use and specific applications such as still image, video or sound;
3. Who will evaluate the specific media to be used in the institution and how it will be done;
4. Define the procedures and strategies to be adopted, e.g., the migration of file formats and media;
5. Define the authorized file formats (recommended, mandatory) and where they should be used. Define also the versions of the authorized file formats.

Products delivered

Report 2 with the *Areas* of the **Digital Preservation Policy**, specifying which areas and objectives will be contemplated.

3.1.3 Pre-guidelines

Overview

In this stage, **pre-guidelines** will be introduced in each of the *Areas* previously established. The name of the *Area* and its objective are the main source for the selection of these **pre-guidelines**. We use here the

¹⁰ Another policy in *The Chamber of Deputies* created this committee. Chamber of Deputies, “Digital Preservation Policy,” [in Portuguese], 2012, <http://www2.camara.gov.br/legin/int/atomes/2012/atodamesa-48-16-julho-2012-773828-norma-cd.html>.

term “pre-guidelines”, because this stage is not aimed to create the definitive version of the guidelines of the policy. Our concern here is to insert in the policy all the important guidelines related to each *Area*. The adequate **elaboration** and **drafting** of these guidelines are further steps in the process.

One advantage of this methodological approach is that, at this point, it is possible to streamline working procedures by assigning the tasks of insertion of **pre-guidelines** according to the area of the team member. Thus, there may be focus of some members on specific areas, increasing the possibility of detection of all the **pre-guidelines** necessary for the institution considered.

All possible **pre-guidelines** should be introduced in this step. The refinement process, that is, the possible removal of unnecessary or redundant **pre-guidelines** (relative to other areas of the framework) will take place in subsequent steps.

What is the source for the insertion of these **pre-guidelines**? As already mentioned, the first source is the objective of the area where it is being inserted. Other sources should be sought by the team members responsible for populating the respective area, such as papers¹¹ on digital preservation, policies or similar strategies from other institutions.¹²

How we did it

Tasks were assigned to team members for different *Areas*. Proposals of pre-guidelines related to the objectives of a given area were made.

Below is an illustrative example of proposal made for 3th *Area* (*Relationship with other policies*):

3.1

This policy attempts to meet the Brazilian standard 15.472 of April 09, 2007 in its reference model for an open archival information system (OAIS).

Rationale for this pre-guideline development

One major assumption in the policy development process was the use of standards, especially the OAIS standard, which establishes the information model and the minimum responsibilities that should be taken on to achieve successful digital preservation.

Products delivered

Report 3, which includes the first proposal of **pre-guidelines** by *Area* of the policy.

3.1.4 Drafting

This process step is aimed to transforming the content of the pre-guidelines, which has been previously proposed and defined, into a clearer and direct text.¹³ In this step, besides the use of the vernacular, another concern is the arrangement of the guidelines in hierarchical order, that is, more comprehensive guidelines should precede less comprehensive guidelines. It is necessary to eliminate redundancies

¹¹ Neil Beagrie, Najla Semple, Peter Williams, and Richard Wright, “Digital Preservation Policies Study,” Part 1: Final Report October 2008, Prepared by Charles Beagrie, Ltd., Funded by JISC, http://www.jisc.ac.uk/media/documents/programmes/preservation/jiscpolicy_p1finalreport.pdf.

¹² Luciana Duranti, Jim Suderman, and Malcolm Todd, “A framework of principles for the development of policies, strategies and standards for the long-term preservation of digital records,” InterPARES 2 Project, 2008, [http://www.interpares.org/public_documents/ip2\(pub\)policy_framework_document.pdf](http://www.interpares.org/public_documents/ip2(pub)policy_framework_document.pdf).

¹³ Michael R. Overly, *e-policy How to develop computer, e-mail, and internet guidelines to protect your company and its assets* (USA: Amacon, 1999), 4.

between the different pre-guideline proposals submitted. This step also involves detailed examination of the wording of each pre-guideline to obviate doubts regarding its use.

Terminology is regarded as important throughout the entire process, but will deserve further consideration from this step on (fourth stage), which is precisely focused on drafting *guideline text*. The use of consolidated terms from standards can save a lot of time and effort regarding the best way to draft the text of guidelines.

How we did it

We read all versions submitted for each contemplated area. We began a drafting process that included several text versions. Guidelines were grouped by chapters¹⁴ to be addressed.

After several revisions, the first version, but not the final one, of one article of the policy reads as follows:

- Art. 4 The objectives of the Digital Preservation Policy of The Chamber of Deputies are:*
- I. ensure the right conditions to provide full-text access to all digital documents for the period of time specified by the institution;*
 - II. create (adopt) standards, instruments and mechanisms to ensure the permanent authenticity of digital documents;*
 - III. define the software and hardware requirements for the establishment of the institution's own digital repository to allow for digital preservation;*
 - IV. contribute to reducing information security risks;*
 - V. promote the exchange of information and experiences on digital preservation with national and international institutions, aiming at reducing the effort and cost involved in finding solutions;*
 - VI. disclose [train?] and share knowledge and best practices of digital preservation;*

Products delivered

The product delivered in this step was the first version (draft) of the **Digital Preservation Policy** of *The Chamber of Deputies*.

3.1.5 Internal persuasion

This step requires the existence of a basic text (a first version) of the **Digital Preservation Policy**. The text obtained here is not necessarily the final version of the policy, but is supposed to contain the essential proposal. After the preparation of this text, it should be checked and, if appropriate, adjusted to the needs and limits of the different bodies within the institution.¹⁵

This step is essential because different actors will contribute to the success of the policy within an institution. Thanks to the commitment and partnership of those actors, the chances of success of the final product will increase considerably. On the other hand, the actual scenario of each institution should be taken into consideration. When it comes to people, the subjectivity of each of them must not be neglected, so that situations where it may be necessary to impose the policy or overcome resistance to its implementation must be considered for each specific case. Some issues may be just a matter of lack of communication, that is, briefings and meetings to present the policy can not only clarify doubts, but also

¹⁴ These “Chapters” do not have an exact correspondence with the *Areas* proposed.

¹⁵ Notably, those bodies that will be directly affected by the text of the policy.

gain supporters of the policy. In an ideal scenario, the policy is elaborated by a team composed of people from key bodies affected by the policy. With the support of such a team, the persuasion process will be easier. However, the mere existence of such team does not necessarily mean support to the text submitted to the internal bodies.

Another reason for conducting this step is the possibility of improvement or even correction of the policy text, not only in respect to its form, but also regarding aspects not discussed during the establishment of the first guidelines.

In the internal persuasion process, the existence of the *Areas* for the policy text and its respective guidelines, including that reasons for proposing such guidelines, that is, the first steps of the process can and should be used as arguments to make clear that the proposed text is well-grounded and consistent, and is not merely a subjective proposal of the work team.

How we did it

This step was performed at *The Chamber of Deputies* in various ways. First the policy text was made available for internal public consultation, so that various bodies might be informed of it and proposes modifications to the text.

There have also been several meetings with different internal bodies of the institution to present and discuss the policy text. In our case, there has been a partnership between the body responsible for documentation and the one in charge of information technology at the institution. We set a *deadline* for the internal bodies to present their considerations and suggestions relative to the policy text, as well as for clarification meetings.

Finally, to facilitate the internal persuasion process, several documents detailing the policy architecture, that is, how it is structured, were produced. We also produced a document with comments on each article of the policy text. As a result of this process, improvements have been made to the text and new versions were produced.

Products delivered

The products delivered in this step were a new version of the *Policy Text* (with many improvements), a *Policy Text* with comments on each article and a report detailing the *Policy Architecture* (areas covered by the policy and scope of digital documents).

3.1.6 Official Formal Writing (Minute)

Depending on the institution, this step may or may not be necessary. For some institutions the policy text must follow some standard patterns, so they provide models and standards for this type of document.¹⁶

Depending on the institution, it may be recommended that the official formal writing step precedes the internal persuasion step. Still, we believe that it should take place after stage 5 because it is essentially a work of text revision when required.

At any rate, with respect to the work methodology, this step should be done separately from the drafting step, because in the latter focus should be given to content.

¹⁶ Stephen Page, *7 steps to better written policies and procedures* (Ohio: Process Improvement Publishing, 2001), 9.

How we did it

As some team members were also knowledgeable in formal writing, several aspects related to formal writing style were used. In the end there was little need for adjustments in this regard.

Products delivered

The product delivered in this step was an improved version of the *Policy Text*, in the formal writing style. This version was called *Minute*,¹⁷ to which we attached a *Glossary* with terms used in the Policy.\

3.1.7 Official Approval

As in the case of *stage 6*, this step may or not be necessary, depending on the specific institution where the work is being developed.

The final approval mentioned here indicates that the institution's top level of hierarchy is to approve the text. Such official support will be important in the subsequent steps of policy development, that is, the implementation of the procedures and actions to carry out digital preservation. In several institutions, this final approval implies the existence of an internal official standard, which will be specific to each institution considered.

How we did it

This step was performed by the directors of the centers responsible for *Documentation* and *Information Technology*. Negotiations were held at senior management level.

Products delivered

At the end of this step, the product delivered was the text of the *Digital Preservation Policy* as an *internal standard* of *The Chamber of Deputies*.¹⁸

3.1.8 Revision

It may seem odd to include a stage in the digital preservation policy after the final approval step. In fact, this stage is not part of the methodology, but was introduced here because of its importance. Institutional scenarios change, and information technology and computing issues, in particular, are in a continuous state of evolution. Both software and hardware may undergo major changes in little time.

This is not about considering whether there will be technological changes, but to monitor those changes as they occur. The success and effectiveness of the policy text depends on this monitoring and on the actions necessary to adapt the policy text to the new existing scenarios.

How we did it

There was no need so far to revise the standard, but this responsibility is foreseen in the approved official version.

Products delivered

No products delivered.

¹⁷ Here it means a version before the formal and legal one.

¹⁸ Chamber of Deputies, "Digital Preservation Policy."

4. Conclusion

In the limits of this paper we did not present an in depth detailed steps of real work done. But from the use of the practical methodology presented in this paper, we highlight some points. First of all, the use of this methodology allowed the production of a text coherent and well-reasoned. Finally, the conduct of work among team members has been rationalized, i.e., it was possible the division of tasks and consequent focus on specific points.

The work presented here is certainly not finished. We presented here a start point to be improved by others. At least, that's what we hope. It is very important to say that this work could not be possible without so many important research centers and people dedicated to study and improve this new and fascinate area, *Digital Preservation*. The few citations presented here are the ones essential to explain the methodology; many others were omitted due to the limits and format of this paper.

Finally, the main product produced by this methodology became more coherent and well-reasoned. This allows future actions of *Digital Preservation* with higher chances of success in *The Chamber of Deputies*.