

## Chapter 5

# Systems and standards for parliamentary documents

Systems for managing documentation in digital formats can make parliamentary operations efficient and help increase the transparency of the institution. These systems are evolving to encompass the entire lifecycle of documents from creation through management, dissemination, and long term preservation. Within these phases documents may be edited and amended by various “authors”; exchanged with different organizations and systems; transformed, for purposes such as searching; validated and certified via digital signatures; rendered in various modes, including printing on paper and online displays; and integrated with other documents.

As described in Chapter 3, the nature of what can be considered parliamentary documentation is also expanding. Audio and video formats are increasingly available, enriching and diversifying the record of parliamentary activities. Because of the current state of the technology, most parliaments must manage written and audio/video records through parallel but separate systems. However, some progress is being made in integrating these different formats at a basic level. For example, 12% of parliaments report that they have a retrieval engine that can link the results from searches of documentation to relevant audio and video records.<sup>1</sup> Since these developments are at an early stage and because documents remain the primary and most frequently used records of parliaments, this chapter focuses on the technologies for creating and maintaining those in written formats.

Standards for documents – especially open standards for tagging the elements of records so that they can be interpreted properly by computers for editing, rendering, searching, exchanging, and preserving – are vital. Documents prepared in proprietary formats, that is formats that can only be used with particular software or specific hardware, constrain the options available for managing them, limit the capacity for meeting future requirements, and may cost more to maintain. However, there is no doubt that implementing open standards such as those based on XML is challenging for most parliaments, especially because these standards can be complex to initiate and require knowledgeable staff who are trained in their use. Collaborative efforts among parliaments can offer a number of benefits in addressing these challenges.

The preservation of the written parliamentary record in digital format poses its own set of issues especially because of the need for effective policies, sound management practices, and the capacity to accommodate constantly evolving technologies. Different organizations within a parliament may have overlapping responsibilities for managing, distributing, and preserving its records, and it can sometimes be difficult to reconcile competing mandates. Potential conflicts may need to be resolved by the Secretary General or occasionally by higher authorities or bodies.

<sup>1</sup> Source: Survey 2009, Section 5, Question 8.

To develop systems, to implement open standards, and to establish policies governing parliamentary documents require a multi-year effort supported by the leadership of the parliament. Short-term and long-term planning must be undertaken to acquire the needed technical skills and infrastructure, and cooperation from users must be secured, particularly from those in the parliamentary administration whose work procedures will change. In addition, one of the most fundamental requirements is a culture that recognizes the importance of and is dedicated to managing its documents. The experiences of many parliaments show that it is important not to underestimate the time, commitment and dedication needed to build and sustain effective systems for creating and managing written records of the parliament. The long-term benefits, however, can be substantial.

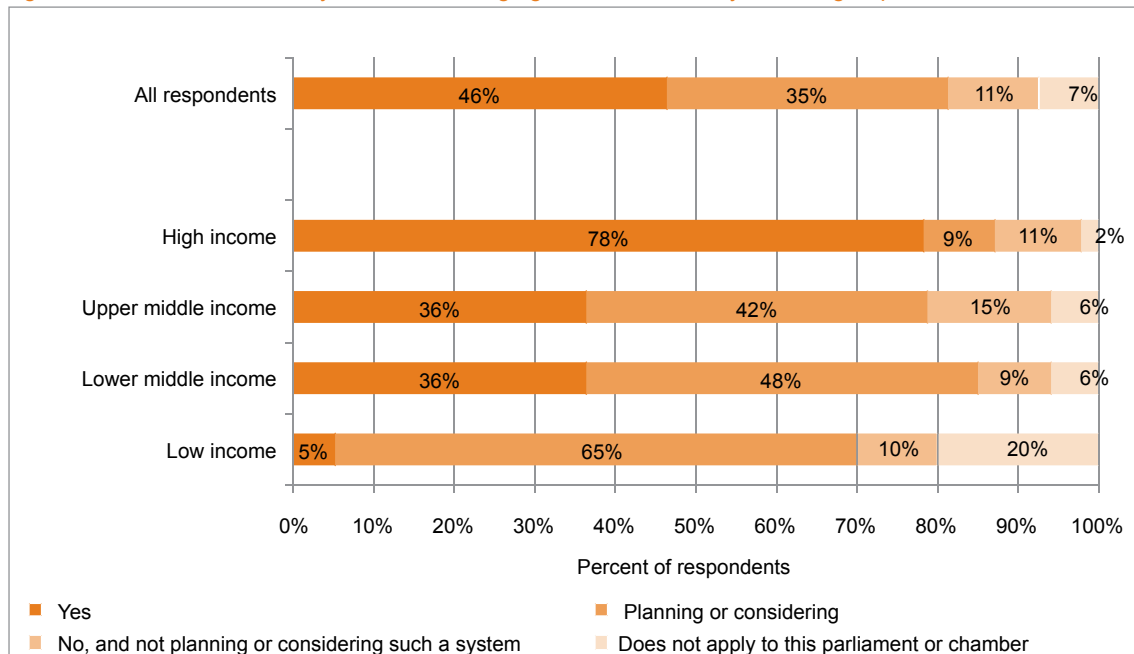
### RESULTS AND FINDINGS FROM THE 2009 SURVEY

The 2009 Global Survey of ICT in Parliaments focused on several components of standards and systems for parliamentary documents: 1) document management systems for proposed legislation; 2) document management systems for other types of documents, such as plenary and committee reports; 3) the use of XML; and, 4) digital preservation programmes.

#### Document management systems for bills

46% of all parliaments reported that they have a document management system (DMS) for the text of bills as they move through the legislative process. As in 2007, the income level of the country is highly correlated with whether a parliament has a system (see Figure 5.1). Only 5% of parliaments in countries in the low income group have a DMS compared to 78% of parliaments in countries in the high income group.

Figure 5.1: Parliaments with systems for managing the text of bills, by income groups



(Source: Survey 2009, Section 3, Question 1; 134 respondents)

Figure 5.2: DMS for bills - 2009:2007 Compare Group

DMS for Bills	2009	2007	Diff.
Yes	48%	46%	2%
Planning or considering	30%	37%	-7%
No, and not planning or considering	14%	11%	3%
Does not apply	8%	6%	2%

(Sources: Survey 2009, Section 3, Question 1; Survey 2007, Section 3, Question 1; 87 respondents)

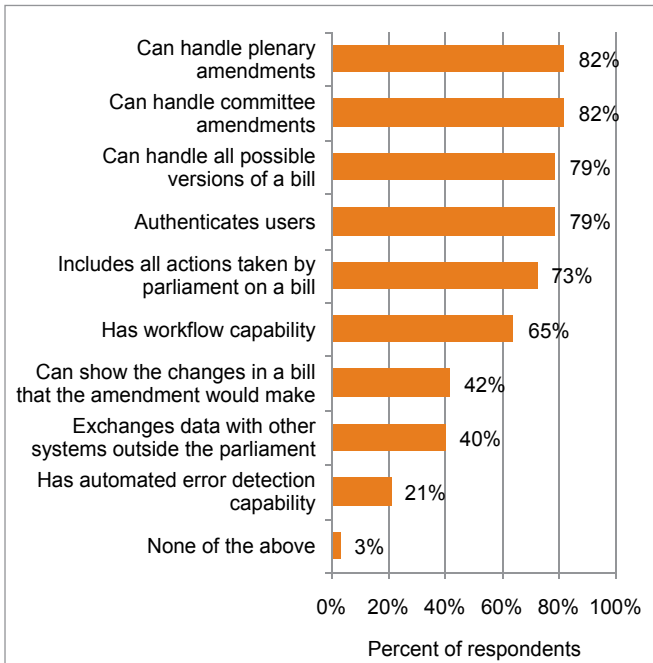
As shown in Figure 5.2, the analysis of the responses of the 2009:2007 Compare Group indicates a very small increase since 2007, from 46% to 48%. However, fewer parliaments are planning or considering a system than in 2007 (-7%), and more are not planning or considering a system (3%).

There are several possible explanations for the little progress in the implementation of document management systems for proposed legislation evidenced by data. As it takes time to build systems that meet complex requirements such as managing bills, it may take several more years before the base numbers first documented in 2007 begin to improve. Systems such as these can also require changes in procedures which many parliaments may find difficult to adopt or accept. Also, managing legislative documents may not be considered as central to the work of some parliaments in comparison with other functions, as for example conducting plenary sessions or carrying out oversight of the government. Future surveys may need to determine the relative weight of this activity compared to other legal responsibilities and correlate it with the implementation of a DMS.

As highlighted in the *World e-Parliament Report 2008*, systems for managing bills must have a number of characteristics to be responsive to the needs of the members and staff of parliaments. The survey focused on several of these, including:

- *Workflow.* This allows bills to be moved automatically and smoothly among the members, officers and organizational units responsible for preparing and distributing them. Workflow also includes the ability to control versions so that authorized changes by one person or office are not overwritten by another.
- *Accommodations of all versions of bills.* It is important that all versions of proposed bills be introduced in the system as soon as possible. These include preliminary versions that are under active consideration for presentation to the body; versions that are considered and reported by committees, along with committee amendments if they are part of the process; versions considered and voted upon in plenary sessions, along with amendments considered in plenary; and versions sent from the legislature to the executive.
- *Exchange and integration of documents and information.* To have the complete legislative history of an act, it is essential that a bill system be able to integrate relevant documents and information related to a specific measure, such as amendments, plenary votes, status steps, and committee reports and activities, along with documents from other chambers, the government, or the judiciary.
- *Accommodation of bills with special formats.* Some types of bills, such as those dealing with the budget, may have particular requirements that affect their presentation online and in paper. A bill system must accommodate these requirements.
- *Authentication of users.* This is a crucial security procedure for ensuring the accuracy and authoritativeness of the text of the bill. There are various ways to implement authentication and the most secure systems may require both a fixed password and a constantly changing password or a physical token.

Figure 5.3: Features of DMS for bills

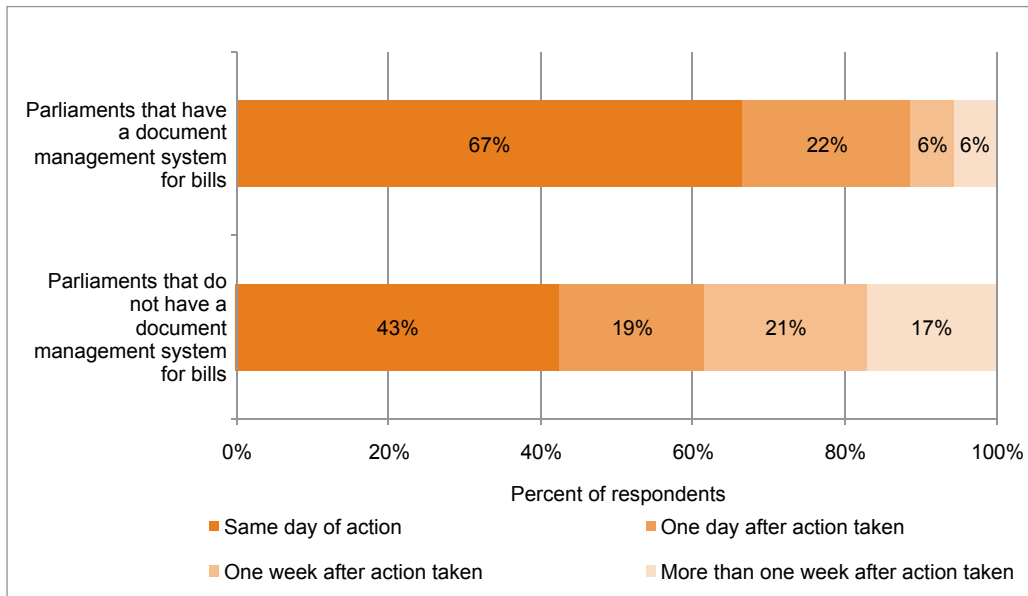


(Source: Survey 2009, Section 3, Question 2; 62 respondents – 46% responding “yes” to Question 1)

For those parliaments that have deployed a DMS for bills, Figure 5.3 shows their capabilities. Well over 75% of parliaments have four of the nine features listed in the figure and two thirds have six of the nine. The features listed by less than half of all parliaments are among the most difficult to implement. One conclusion is that while there has been little increase in the number of parliaments using document management systems, those that are in place have many of the important functions that enhance their usefulness.

One of the values of document management systems is that they enable parliaments to make proposed legislation available sooner. Figure 5.4 analyzes the timeframe within which bills are made available in parliaments that have and do not have a DMS. 90% of parliaments that have a DMS make bills available on the same day or one day after action, but only 62% of those that do not have a DMS meet this criterion.

Figure 5.4: Timeliness of availability of bills by parliaments with and without a DMS

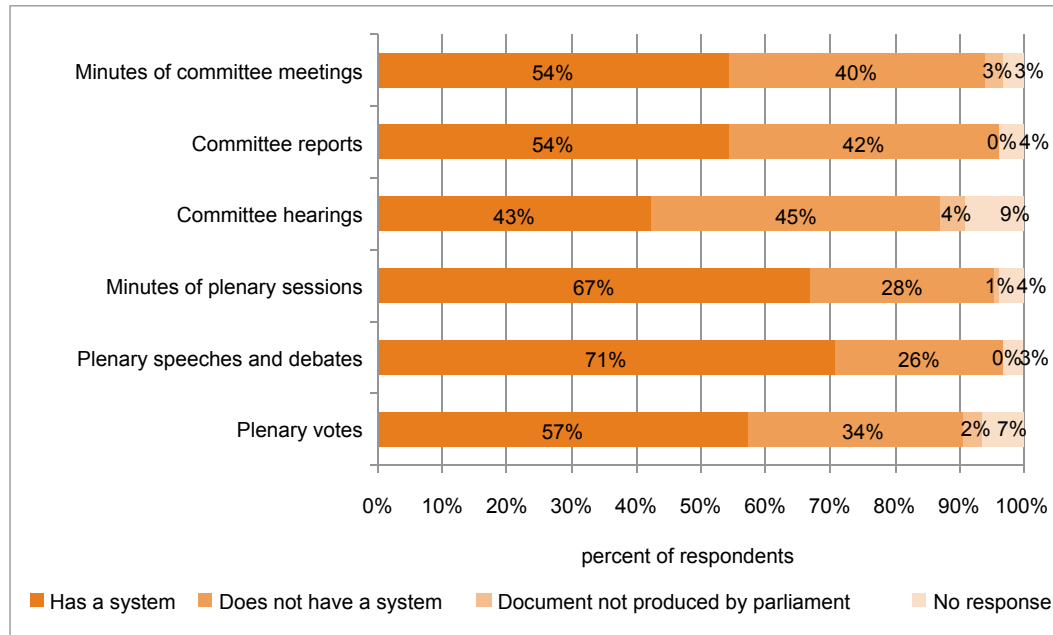


(Source: Survey 2009, Section 3, Question 1 and Section 5, Question 7b; 101 respondents)

### Document management systems for other documents

More parliaments have systems for managing committee and plenary documents than they do for managing bills and amendments (see Figure 5.5).

Figure 5.5: DMS for committee and plenary documents



(Source: Survey 2009, Section 3, Question 5; 133 respondents)

The wording and structure of the questions in the 2007 survey were sufficiently different to preclude an exact comparison with earlier findings. However, it is useful to note the percentage of all parliaments that acknowledged having a system for each of these documents in the two surveys. The results shown in Figure 5.6 indicate that in both years, with the exception of committee hearings, more than half of all parliaments reported that they have such systems. While differences in the surveys prevent us from concluding that there has been an actual increase in the last two years, it is reasonable to characterize the relatively large percentages for some documents such as plenary minutes (67%) and plenary speeches and debates (71%) as positive findings.

Figure 5.6: Percentage of all parliaments with DMS for managing other documents

Have a DMS for managing:	2009	2007
Committee meeting minutes	54%	52%
Committee reports	54%	47%
Committee hearings	43%	42%
Plenary minutes	67%	50%
Plenary speeches and debates	71%	59%
Plenary votes	57%	52%

(Sources: Survey 2009, Section 3, Question 5; 133 respondents; Survey 2007, Section 4, Questions 1, 3, 5, 7, 9 and 11)

The 2009 percentages of those that have a DMS for these documents are even higher if one excludes from the group those that said the document is not produced by the parliament or gave no response. The percentages based only on parliaments producing the documents are shown in Figure 5.7.

Figure 5.7: Parliaments producing each document with DMS

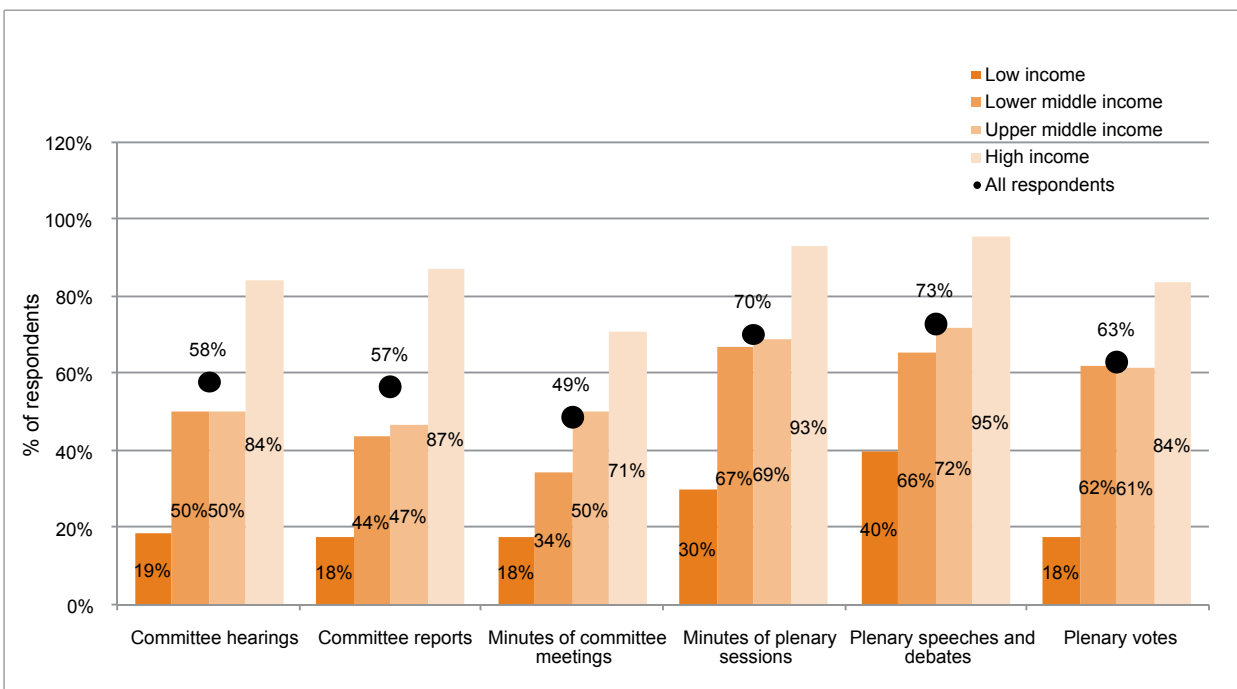
Have a DMS for managing:	2009	Respondents
Committee meeting minutes	57%	125
Committee reports	56%	128
Committee hearings	49%	117
Plenary minutes	71%	126
Plenary speeches and debates	73%	129
Plenary votes	63%	121

(Source: Survey 2009, Section 3, Question 5; respondents vary as shown)

In general, these are positive findings, especially in light of the lower percentage of parliaments that have systems for managing bills. It also adds weight to the interpretation that the lower percentages of DMS for bills is caused by the different levels of responsibility for proposed legislation among assemblies, with some of them not giving it as high a priority. Chambers that do not have a major role in considering proposed legislation are without one of the most important means for affecting public policy. A document management system for bills will not address this issue, but for legislatures that do have legislative responsibilities, it is a critical tool.

As with bills, the income level of the country associates significantly with the deployment of a system for managing committee and plenary documents. For countries in the low income group the percentage of parliaments that have a DMS is less than 20% for four of the six types of documents considered (see Figure 5.8). Only for plenary minutes (30%) and plenary speeches and debates (40%) do the percentages rise above a fifth of parliaments in this income group.

Figure 5.8: Parliaments with DMS for committee and plenary documents, average by income groups



(Source: Survey 2009, Section 3, Question 5)

Participants at the World e-Parliament Conference 2009 stressed that in countries lacking financial and technical resources, collaborative software development among partnering legislatures offers a unique opportunity to leverage limited funds for deploying such systems and ensuring a high quality and sustainable documentation process. One such possibility is the *Bungeni* Parliamentary and Legislative Information System being developed as part of the *Africa i-Parliaments Action Plan*, a project of the United Nations Department of Economic and Social Affairs funded by the Italian Development Cooperation (see Box 5.1)

## Box 5.1

### Bungeni: Parliamentary and Legislative Information System

*Bungeni is an open source Parliamentary and Legislative Information System that aims to make parliaments more open and accessible to citizens, virtually allowing them “inside parliament”, or “bungeni” in Swahili.*

*The Bungeni system covers the entire document life-cycle of parliamentary documents from drafting to publication and supports the whole range of parliamentary documents: questions, motions, bills, tabled documents, etc. It meets typical legislative document archival requirements by recording multiple versions of a document at various points in time through various stages of the parliamentary process.*

*Bungeni is made up of three components:*

**Bungeni Portal:** *the web site that the public see with all the information about the parliament and the parliamentary activities. Bungeni Portal navigation has been designed with usability in mind and has been sampled from a variety of parliamentary websites. It covers topics and issues that are typically present in parliamentary websites. It also allows citizens to post comments, suggest amendments and track items that may be of interest to them.*

**Bungeni MembersSpace:** *a website where members of parliament have the opportunity to directly communicate with citizens and highlight their own activities. Members can create their own content which can be in the form of blogs, events, documents to download, links, and news. Citizens may be allowed by members to access their space and to comment, post a document for comment or take part in polls or surveys to gauge the mood of citizens on specific issues.*

**Bungeni Workspace:** *is for registered parliament users, such as members of parliament, staff of the Secretary General’s and Speaker’s offices and committees’ clerks. This is the space where all the content of Bungeni Portal and Bungeni MembersSpace is generated. Accessing Bungeni Workspace requires a user to authenticate and only authorised users have access to it. Different users have different workspaces that suit their roles, responsibilities and requirements.*

*Bungeni is available in several languages (English, French, Portuguese, and Swahili) and, being fully internationalised, can be translated into others.*

*The Bungeni pre-deployment phase began in February 2010 with testing by 14 parliaments. Features tuning and localisation following feedback from these parliaments will take place in the second quarter of 2010. The deployment is foreseen in the third quarter of 2010.*

*The deployment in parliaments will coincide with the progressive involvement of developers from those institutions, as well as from the wider open source community, in supporting the localisation and development of additional features, under the coordination of the Bungeni Development Team.*

*For more information: <http://www.bungeni.org>*

Despite constructive and hopeful initiatives such as *Bungeni*, the findings from the survey underscore that there is still a large percentage of parliaments that do not have a document management system for bills or for other types of documents. This problem is especially severe for parliaments in low income countries. These findings are worrisome because they mean that the capabilities of legislatures to manage the parliamentary process effectively and to provide accurate and current documentation to the electorate are reduced.



## Use of XML

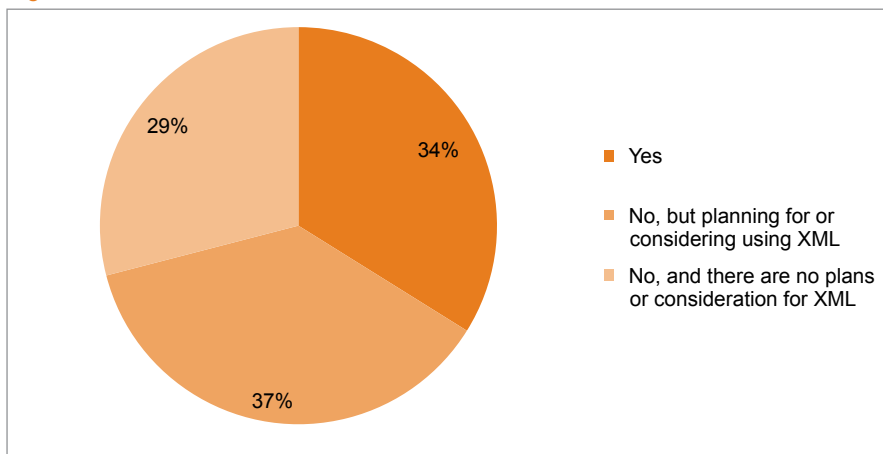
As outlined in the 2008 edition of this Report, there are a number of important advantages to the use of open standards in parliaments:

- *Exchange of documents.* Open standards make it easier to share documents between individuals and organizations, even if they use different software for editing and managing documents. They can facilitate such exchanges between departments within a parliament, with another chamber, between the parliament and the government, with citizens and civil society organizations, and with legislative bodies and organizations in other countries.
- *Search.* Search engines can provide more accurate results and users can formulate more precise queries if data is tagged for its specific content. Open standards permit documents to be indexed with a variety of search engines, thereby giving legislatures choices in the selection of a technology.
- *Linking among documents.* Legislative documents are highly interrelated. Open standards allow links among documents to be created automatically and even have the potential, depending on the depth of tagging, to support linking between elements within documents. For example, a section of a proposed bill could be automatically linked to the portion of an existing law that it would amend.
- *Multiple forms of output.* A source document tagged with an open standard could be rendered into different appearances such as for an online website, a paper copy, or a version modified to be incorporated into another document. XML can also be used to produce versions which could be easier for persons with disabilities to access by supporting, for example, large type fonts or audio output.
- *Consistency in formatting.* Tagging standards can be used to encourage or even enforce proper formatting so that members and others who prepare the texts do not have to know the exact conventions used when they draft bills or amendments.
- *Ease of preparation.* Open standards can be demanding to use but once understood they can ease the effort required to prepare a bill or amendment by guiding the drafter through the required formatting steps.
- *Preservation.* One of the most important uses of open standards is to ensure the long-term preservation of documents. Proprietary systems change constantly in response to market pressures for new capabilities. As these systems are enhanced, they often reach a point where they cannot be used to access documents prepared using older versions of the same software. Over time this has the potential for making it difficult, if not impossible, to access digital documents.
- *Access for citizens.* The problem of long-term preservation becomes most acute in the context of ensuring permanent access for citizens to legislative documents. Documents in digital formats that are accessible today may become inaccessible over time because previous media, software, and proprietary formats are no longer supported. And this could prevent public institutions from guaranteeing that archived public records in digital formats will remain accessible in the future.

The survey results suggest that the percentage of all parliaments that have implemented or are planning or considering implementing XML for bills has not increased significantly in the last two years (see Figure 5.9). 34% of those that have a system for managing bills currently use XML. This represents 16% of the 134 parliaments responding to the 2009 survey. The comparable figure for the 2007 survey was 12%. While 16% represents a 30% increase over 12%, it still means that fewer than 20% of parliaments are using XML in document management systems for bills.



Figure 5.9: Use of XML for bills



(Source: Survey 2009, Section 3, Question 3; 62 respondents – 46% responding “yes” to Question 1)

This lack of significant progress is seen even more clearly in the results from the 2009:2007 Compare Group which show that those using XML and those planning or considering the use of XML actually declined (see Figure 5.10).

Figure 5.10: Parliaments using XML for bills - 2009:2007 Compare Group

Use XML for Bills	2009	2007	Diff.
Yes	31%	33%	-2%
No, but planning or considering	36%	44%	-8%
No, and not planning or considering	33%	23%	10%

(Sources: Survey 2009, Section 3, Question 3; Survey 2007, Section 5, Question 2)

The situation is much the same for other parliamentary documents. Figure 5.11 shows the percentages of parliaments with systems that use XML as the document standard in 2009 and 2007. The differences in the structure of the questions prevent a more precise assessment of changes over time using the 2009:2007 Compare Group, but the general conclusion that emerges from these percentages is that relatively few parliaments have implemented an open standard for their documents.

Figure 5.11: Parliaments with a DMS using XML in all documents

DMS using XML standard for:	2009: Yes	2007: Yes	Diff.
Bills	34%	30%	+4%
Committee meeting minutes	14%	14%	0%
Committee reports	18%	19%	-1%
Committee hearings	11%	18%	-7%
Plenary minutes	19%	14%	+5%
Plenary speeches	20%	21%	-1%
Plenary votes	17%	15%	+2%

(Sources: Survey 2009, Section 3, Question 6; Survey 2007, Sections 3 and 4)

Implementation of XML poses a number of challenges. In the 2009 survey, parliaments using XML, or that have tried to use it, were asked which problems they had experienced. Figure 5.12 summarizes responses from two groups: those currently using XML<sup>2</sup> (34 parliaments) and all those that identified at least one challenge on the list (59 parliaments). This latter group includes parliaments in the first group and those that are not currently using XML but have faced barriers in trying to implement it.

Figure 5.12: Challenges in using XML

Challenges	Parliaments that identified at least one challenge (Total=59)	Parliaments currently using XML (Total=34)
Lack of staff knowledge and training	59%	26%
Lack of financial resources	44%	15%
Finding authoring / editing software	41%	26%
Complexity of using XML	34%	26%
Difficulty in developing a DTD or schema	34%	26%
Lack of management support	24%	12%
User resistance	14%	12%
Other	7%	9%
None of the above	N/A	29%

(Source: Survey 2009, Section 3, Question 7; number of respondents varies by row and column)

Several findings contained in Figure 5.12 are particularly informative. For the 34 parliaments currently using XML there was a relatively even distribution among four challenges, all identified by at least a quarter of the respondents: lack of staff knowledge and training, finding software for authoring and editing, the complexity of using XML, and difficulty in developing a Document Type Definition (DTD)<sup>3</sup> or schema. It is interesting that the challenge checked by the most parliaments, however, was “None of the above”.

For the 59 parliaments that identified at least one item (whether they are currently using XML or not), the challenge mentioned by the most parliaments was the lack of staff knowledge and training (59%). The other obstacles mentioned by the most parliaments were the lack of financial resources (44%) and finding authoring and editing software (41%). If legislatures currently using XML are removed from the combined group, the remaining 37 parliaments, which have presumably experienced challenges in trying to implement XML, cite the top two problems - staff knowledge and training and financial resources - even more frequently (70% and 57%, respectively).

There are a variety of ways to address these issues, all involving some form of cooperation among parliaments and the support of the international community. Because parliaments represent a relatively small market, commercial solutions are not always available or appropriate. Sharing knowledge and collaborating on initiatives can sometimes yield better results, especially for parliaments in developing countries. While primary responsibility for financial resources must always rest with the legislature itself, well formulated and managed startup support from outside organizations can have a significant effect, particularly for training staff and establishing initial schema. Distance learning can often help, particularly when it is difficult and expensive for

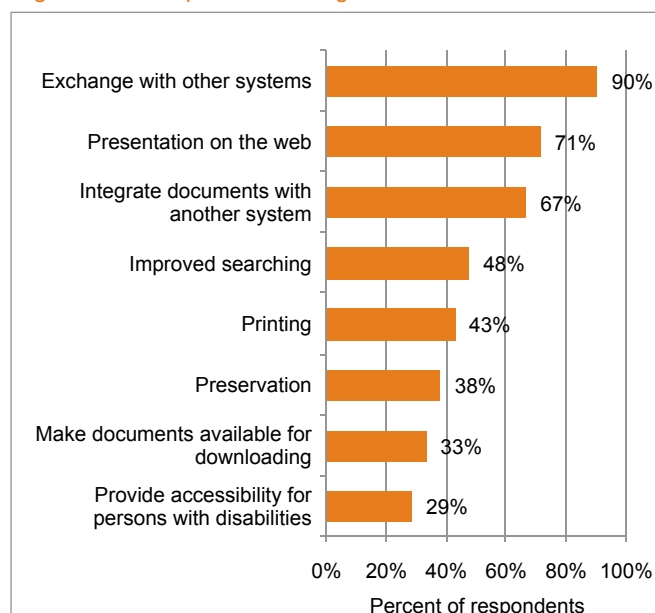
2 This group consists of those who said they are using XML for bills (Section 3, Question 3) and / or for other documents (Section 3, Question 5).

3 A Document Type Definition is an XML schema that defines the set and structure of XML markups contained in the document.

staff to leave their parliaments for extended periods. One such project being carried out by the Inter-American Development Bank with funding of the Italian Development Cooperation aims to provide an e-learning system for parliamentary staff in Latin America. Cooperative regional efforts can be useful for addressing problems such as the need for versions of software in appropriate language. Collaboration among those who share common legislative backgrounds can also be useful for dealing with DTDs and schemas that need to be adapted to particular traditions and procedures. Partnerships between parliaments can be valuable if they involve a legislature that has successfully implemented XML and one that is just beginning. Sustained mentoring of staff who are learning to use XML soon after they have had a basic introductory course can be highly beneficial. Both parliaments would need to agree on a plan for such support, including schedules, time commitment and responsiveness of the donating parliament, and the obligations of the receiving parliament.

It can be particularly helpful for parliaments to share examples of the benefits derived from XML. The 2009 survey provides a useful picture of some of these. Parliaments that are currently using XML were asked how it is being employed. The results, shown in Figure 5.13, highlight exchanging documents with other systems (90%), presenting documents on the web (71%), integrating documents with another system (67%), and improving searching (48%). Printing and preservation were also mentioned by 43% and 38% of parliaments respectively. So far only 29% are using XML to provide accessibility for persons with disabilities. This list illustrates both the range and the value of the goals that XML supports. Future objectives will likely include the rendering of parliamentary information on mobile communication devices, increased support for accessibility by persons with disabilities, and more effective integration with new web technologies. The important point is that open standards such as XML offer greater flexibility for meeting both current and future needs for parliamentary document systems.

Figure 5.13: Purposes for using XML

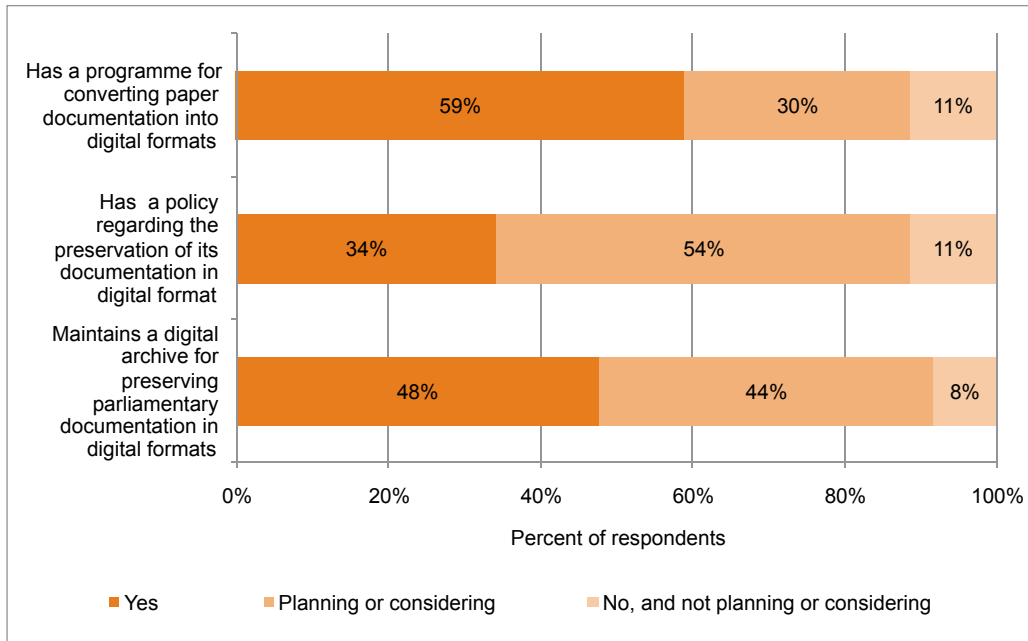


(Source: Survey 2009, Section 3, Question 4; 21 respondents – 16% responding “yes” to Question 3)

### Digital preservation programmes

The majority of parliaments (59%) have programmes for converting paper documentation into digital formats or are planning or considering them (30%). Some parliaments have also established or are considering establishing a policy for the preservation of their documentation in digital formats (34% and 54% respectively). Nearly half already maintain a digital archive (see Figure 5.14). Parliaments also reported that on average they have bills and plenary speeches in digital format for approximately half the number of years they have them available in any format.<sup>4</sup>

Figure 5.14: Preservation of digital documents



(Source: Survey 2009, Section 3, Questions 9, 11 and 12; 134 respondents)

These findings suggest that many parliaments are making progress in ensuring the preservation of their digital records. However, substantial challenges lie ahead, especially as technology continues to evolve and as more parliaments move toward operations that are primarily paperless. Open standards such as XML can play an important role because they are less dependent on changes in the underlying hardware and application software. But for the near term, dual preservation modes – in paper and in digital format – are likely to be necessary. This is a particularly complex problem because a variety of people and bodies with complementary responsibilities, but sometimes conflicting goals, are usually involved in solving it, including archivists, technologists, and librarians.

4 Source: Survey 2009, Section 3, Question 10.

## DEVELOPMENT OF LEGISLATIVE OPEN DOCUMENT STANDARDS

Since the publication of the *World e-Parliament Report 2008*, which highlighted some notable efforts in the field of open document standards,<sup>5</sup> several parliaments have been involved in initiatives aiming at adopting open document standards. Three of these deserve mention in this Report in view of the progress made and their potential impact on other legislatures and systems.

### Brazilian Legal and Legislative Information Portal (LexML Brazil)

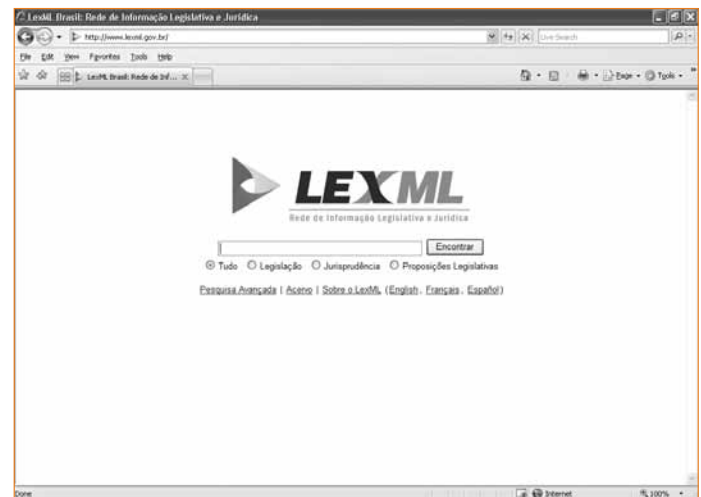
Computer controlled legal and legislative information in Brazil was born in the 1970s. From then onwards, a series of different databases were developed by different government entities. Almost forty years later, the LexML Brazil portal was launched. Its purpose is to unify, organize and facilitate access to legislative and legal information made available in digital form by several bodies of the executive, legislative and judiciary branches, the Office of the Federal Solicitor General (AGU), and the Office of the General Prosecutor, at the federal, state, municipal and district levels.

The system was developed on the basis of the information already released to the general public, the adoption of an improved process of generation of new information, and the ongoing concern to preserve digital information in a centralized form and make it available to the general public in an efficient way.

It must be emphasized that this is a joint initiative of different participating bodies, under the leadership of the Federal Senate of Brazil, and the result of the political will of different actors. A network of technical staff, led by an Information Management Committee, was established to organize the legal and legislative information available in digital form from the three branches of government

The LexML Brazil portal was officially launched on 30 June 2009, with an initial collection of 1.2 million documents from the Office of the Federal Solicitor General (AGU); the State Legislative Assembly of Minas Gerais; the House of Representatives; the National Justice Board; the Superior Board of Labor Justice (CSJT); the Office of the Comptroller General (CGU); the National Press; the São Carlos Town Council (SP); the Office of the Federal Prosecutor-General; the Federal Senate; the Higher Court of Justice (STJ); the Supreme Federal Court (STF); the Brazilian Court of Audit (TCU); the Higher Labor Court (TST); and the Higher Electoral Court (TSE). As of February 2010, LexML Brazil collected more than 1.4 million documents.

Figure 5.15: Homepage of LexML



(Source: <http://www.lexml.gov.br>)

5 United Nations, Inter-Parliamentary Union, Global Centre for ICT in Parliament, *World e-Parliament Report 2008*, [New York]: United Nations, 2008, pp.80-84 [<http://www.ictparliament.org>].

In its work, LexML Brazil was influenced by the *Norme in Rete*<sup>6</sup> project for persistent identifiers and by *Akoma Ntoso*<sup>7</sup> for XML schema specification.

The portal homepage features a simple search interface similar to Google Search. Users can further refine search results by locality, authority, document type and date.

The LexML portal is developed entirely with open source software. Originating institutions use a data provider toolkit in order to generate and validate the metadata of documents according to a defined schema. Such metadata is then harvested automatically by LexML using the Open Archiving Protocol for Metadata Harvesting (OAI-PMH). Scalability and availability of LexML search and resolution are achieved through a distributed system of servers located at various institutions.

LexML Brazil currently focuses on the consolidation of the portal and persistent identifiers, the development of a unified view of the bills from the Federal Chamber of Deputies and Senate, and a linker application that will automatically insert links to reference laws and documents in legislative texts. Future work will focus on the development of open source tools (such as editor, compiler and publisher) for managing XML documents.

### XML at the European Parliament

The European Parliament's increasing role in the European Union law-making process has resulted in an increasing workload for the institution's members and officials, and in an increasing pressure on its working processes and information systems. The IT environment supporting the legislative process has grown increasingly complex and fragmented over time. In particular, the tools that support document and content management during legislative procedures are numerous, heterogeneous, functionally and technically limited, and insufficiently integrated.

The complexity and limitations of existing IT systems represent a growing risk and constraint for the efficiency and effectiveness of the European Parliament's legislative process. The e-Parliament Programme is the change programme that has been initiated to consolidate, streamline and strengthen the information systems supporting the EP's legislative process over a period of four years.

Legislative documents are currently managed on the basis of unstructured data. This makes the production of legislative content and documents difficult, time-consuming, inconsistent, and insufficiently flexible. Furthermore, these documents are stored in multiple repositories at different stages of the legislative process, which makes their tracking, location and retrieval challenging and conveys risks regarding their consistency across the legislative production chain. In addition, there is no common way of exchanging these documents across the different IT applications supporting the legislative process.

The e-Parliament Programme aims to remedy these shortcomings by supporting the transition from a legislative production chain managed on the basis of unstructured data (Word documents) to a legislative production chain managed on the basis of structured data (XML-tagged content).

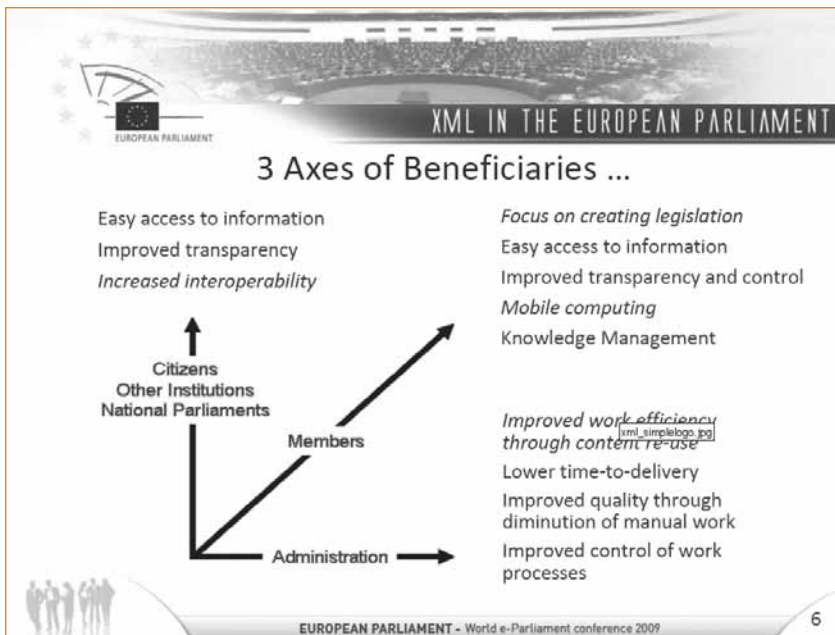
The e-Parliament Programme relies on a complex business process, workflow, and various technological tools. The process starts with a conversion of incoming official documents from the

6 United Nations, Inter-Parliamentary Union, Global Centre for ICT in Parliament, *World e-Parliament Report 2008*, [New York]: United Nations, 2008, p.80 [<http://www.ictparliament.org>].

7 <http://www.akomantoso.org>



Figure 5.16: Beneficiaries of XML in the European Parliament



(Source: Presentation by Flemming Sorensen, Head of Service, Directorate General for Innovation and Support, European Parliament, at the World e-Parliament Conference 2009)

Commission and the Council to XML, as there is not yet a common agreed XML standard between these institutions. Specialized XML authoring tools will be made available for further document processing in committees or in plenary. Members of the European Parliament will be able to digitally sign documents and amendments. All documents will be stored in a content repository and indexed according to the Eurovoc thesaurus. The entire process will be controlled using a workflow management and communication tool.

The main challenges that the e-Parliament Programme faces in rolling out XML are multilingualism and interoperability with partner institutions. Because of the high number of official languages, translation in the European Parliament happens on a massive scale. In 2006, 1.15 million pages were translated. To improve the efficiency of the process, it is imperative to ensure that XML markups support the re-use of already translated information. Regarding interoperability, the European Parliament would eventually like to be able to exchange documents in XML format with the European Council, the European Commission, and national parliaments.

The European Parliament opted not to develop its own XML standard, but to comply with an existing standard, the *MetaLex/CEN* standard.<sup>8</sup> The e-Parliament Programme will derive its own XML schema from *Akoma Ntoso*,<sup>9</sup> as it already meets many requirements of the programme. In this regard, and if needed, the European Parliament will contribute to the further development of *Akoma Ntoso* in a transparent manner, inviting the stakeholders to review, discuss and adopt proposed changes to the standard.

### Integration of Akoma Ntoso and MetaLex/CEN

*Akoma Ntoso*, a multi-country collaborative initiative of the “Africa i-Parliament Action Plan”,<sup>10</sup> a project carried out by the United Nations Department of Economic and Social Affairs, is a set of common XML standards that allow the efficient exchange and reuse of parliamentary, legislative, and judiciary documents. It is a collection of technology-neutral XML machine-readable descriptions of official documents, such as legislation, debate records, and minutes, that enable

<sup>8</sup> See description in the following section.

<sup>9</sup> See description in the following section.

<sup>10</sup> See <http://www.parliaments.info>, and <http://www.akomantoso.org>.



the addition of a descriptive structure (markup) to the content. *Akoma Ntoso* XML schema makes the structure and semantic components of digital documents accessible, thereby supporting the creation of high value information services.

*MetaLex/CEN*, a product of the European Committee for Standardization,<sup>11</sup> is an interchange format, a lowest common denominator for other standards, intended not to replace jurisdiction-specific standards and vendor-specific formats in the publications process but to impose a standardized view on legal documents for the purposes of information exchange and interoperability in the context of software development. To meet these requirements, *MetaLex/CEN* defines a mechanism for schema extension, adding metadata, cross-referencing, constructing compound documents, and a basic naming convention.

An initiative is being undertaken that could lead to the integration of these two standards into a single “Legal XML Family of Standards”, for marking up legal information including legislative, parliamentary, and judiciary documents. It is being developed with the awareness that many national and local XML legal standards already exist or are being developed inside parliaments, governments, and academic and commercial organizations. On the other hand, many countries have not yet adopted XML in any official form for the publication of legal documents on the Web, nor for managing the archiving of these documents.

The initiative intends to achieve two specific purposes:

- To make available a meta-level XML language that provides the infrastructure for the interchange and the interoperability of heterogeneous legal and parliamentary documents that use different pre-existing legal XML standards. This is specifically made possible by *MetaLex/CEN*.
- To make available a document-level XML language that provides the vocabulary, constraints, philosophy, and tools necessary to mark up legal and parliamentary documents of institutions for a wide range of uses and with a strong emphasis on structure and semantics beyond printing and on-screen presentation. This is specifically made possible by *Akoma Ntoso*.

<sup>11</sup> The European Committee for Standardization (CEN) is a business facilitator in Europe, removing trade barriers for European industry and consumers. Its mission is to foster the European economy in global trading, the welfare of European citizens and the environment. Through its services its 31 national members work together to provide voluntary European standards and other technical specifications.

## SUMMARY

Improving the efficiency of a parliament's operations and increasing its transparency and accessibility requires a system for managing documents in digital formats. The functions that these systems must support have grown to encompass a broad range of life cycle activities from creation through preservation. Audio and video formats are also becoming increasingly useful for recording and rendering the work of the parliament. While written records are still the dominant mode, the integration of these with records in different formats is likely to become important in the future as more parliaments adopt technologies such as webcasting of plenary sessions and committee meetings.

Although their implementation can be challenging, open standards for documents are an essential component of these systems. Standards are needed to provide the functionality and flexibility required by parliaments for diverse requirements such as searching, exchanging, integrating, rendering, and particularly for ensuring the long term availability of digital records at an affordable cost.

XML supports the values of transparency, accessibility, and accountability in a variety of ways. For example, it can help make documents more accessible to persons with disabilities or allow documents to be re-used in innovative and informative ways by civil society organizations.

Because of the complexity of their requirements and their impact on so many aspects of parliamentary operations, document management systems based on open standards take time, resources, and knowledgeable staff to build and sustain. They require strong management support and cooperation among a wide range of stakeholders. They also must be based upon a culture that recognizes the importance of, and is dedicated to managing its documents. Since they are a primary source of information for parliamentary websites, they demand a high degree of accuracy, reliability, and commitment from the leadership and the parliamentary administration, including ICT staff.

Findings from the 2009 survey indicate that there has been relatively little progress since 2007 in the number of parliaments that have systems for managing proposed legislation (from 43% in 2007 to 46% in 2009). The analysis of responses from the 2009:2007 Compare Group also suggests that there has been a decrease in the number of parliaments planning or considering such systems and an increase in the number of legislatures not planning or considering one at all. The percentage of parliaments that have systems for documents other than bills are more encouraging, reaching as high as 71% for plenary speeches and debates. Over half of all parliaments reported having systems for five of the six types of committee and plenary documents included in the 2009 survey. The lower percentage of parliaments having systems for bills may be due to their greater complexity or possibly to the fact that some parliaments may not have legislative responsibilities that make a DMS for bills a high priority.

The implementation of open document standards – XML specifically – has also lagged. 34% of parliaments that have a system for managing bills currently use XML. This represents 16% of the parliaments responding to the 2009 survey. The comparable figure for the 2007 survey was 12%. While 16% in 2009 represents a 30% increase over 2007, it is still well below a fifth of all parliaments that responded to the survey. The situation is much the same for other parliamentary records. Of those that have systems for managing a variety of committee and plenary documents,

the percentages of parliaments using XML range from 11% to 20%. Overall, only 25% of parliaments (34 of the 134 that responded to the survey) use XML for any parliamentary document.

The survey highlights some of the major challenges in implementing XML and reasons why progress has been so slow. These include lack of staff knowledge and training, lack of financial resources, and difficulties in finding adequate authoring and editing software. A number of these barriers can be overcome through various modalities of cooperation among parliaments and the support of the international community. Funds and activities targeted to training and supporting startup efforts can be helpful, as can distance learning systems, cooperative regional efforts to find or develop software that can be shared, and partnerships between a technically advanced parliament and a parliament in the early stages of its adoption of ICT. Equally valuable would be the sharing of experiences, through a variety of channels, which illustrates some of the ways to acquire and maximize the benefits offered by XML. These include improvements made possible by XML for exchanging, integrating, and searching documents, and for providing greater transparency through timely and enhanced presentation on parliamentary websites.

XML is at a crucial stage in its development in parliaments. Despite previously noted commitments to the goal of using this open standard, its implementation has been lagging for a variety of reasons, including technical complexity, the requirement to have well trained staff, and the necessity for better tools. Significant and highly beneficial multi-national discussions and collaborative initiatives are taking place in Europe, Africa, and Latin America. They could have a positive impact in meeting a number of these challenges.

Finally, the findings suggest that many parliaments are making progress in the policies, management practices, and technologies needed to preserve digital documents. For the near term it is clear that dual systems for paper and digital formats are required, but as technologies evolve and parliaments adapt to them, more sophisticated technical solutions and open standards for all records, including those in written, audio, and video formats, will be required.