TECHNOLOGICAL OPTIONS FOR CAPTURING AND REPORTING PARLIAMENTARY PROCEEDINGS

European Parliament, Brussels, Belgium

14-16 July 2010

REPORT OF THE WORKSHOP

Organised by the Global Centre for ICT in Parliament
and the Office for Promotion of Parliamentary Democracy

The Report of the International Workshop on Technological Options for Capturing and Reporting Parliamentary Proceedings was prepared by the team of the Global Centre for ICT in Parliament and the Office for Promotion of Parliamentary Democracy and has benefited from the presentations and papers contributed by experts, as well as from the discussions held at the workshop among participants.

The European Parliament established the Office for Promotion of Parliamentary Democracy in 2008 to directly support new and emerging democracies beyond the borders of the European Union. The Office assists in the establishment and reform of parliaments and aims at strengthening their capacity to implement the chief functions of lawmaking, oversight and representation.

The Global Centre for Information and Communication Technologies in Parliament is a joint partnership, launched in 2005, of the UN Department of Economic and Social Affairs (UNDESA), the Inter-Parliamentary Union (IPU) and a group of national and regional parliaments. The Centre pursues two main objectives:
 - strengthening the role of parliaments in the promotion of the Information Society and
 - promoting the use of ICT as a means to maximise parliamentary processes including transparency, accountability and participation and to improve inter-parliamentary cooperation.

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INTRODUCTION

Background

Parliamentary documents such as committee reports and texts of debates and hearings are fundamental records of the legislature. These documents must be prepared quickly, efficiently and accurately. They must be distributed easily and then amended, revised and redistributed just as easily. And they must be archived effectively to ensure availability and long-term preservation. The findings of the 2010 edition of the World e-Parliament Report indicate that timely public availability of such legislative records is a key ingredient for a more open, transparent and accountable legislature, and therefore a cornerstone of healthy parliamentary democracies. The Report further considers it a key criteria for assessing the level of e-parliament that a legislature can achieve, with those at the top levels more likely to have technological systems for managing all parliamentary records and making them available to citizens through multiple channels and in a timely manner.

The use of modern technologies has dramatically changed the parameters and the dynamics involved in documenting the parliamentary process and in producing a verbatim record of debates, a record of votes and a record of other actions that occurred during a session. This has often resulted in greater efficiencies, lower costs, and faster and wider distribution for both members and the public, and it has significantly increased the openness and transparency of the process and therefore imbued it with greater legitimacy.

A number of parliaments have made highly effective use of ICT to provide accurate verbatim accounts of debate in plenary sessions on a timely basis, sometimes on the same day and sometimes within a few hours. Others offer text summaries of floor actions in near real time using sophisticated recording and transcription technology.

However, a significant number of parliaments around the world have not developed yet such capabilities and are still struggling to produce accurate records within an acceptable timeframe. Many of these parliaments have voiced their need for support in order to understand the technological options that could be available to legislatures and to implement them in their environment.

The work of parliamentary reporting – i.e. the recording of plenary and committee sessions and the production and publication of reports – has changed substantially over the years. Whereas in the past reporters relied mostly on shorthand and traditional stenography machines, over time technological developments started to offer a variety of new tools and instruments enabling easier production of transcripts and which provided parliaments the opportunity to establish a diverse set of reporting practices according to their needs and resources. Examples of these methods include the use of audio recording in combination with electronic document writers or real-time transcription software.

The type of technology chosen by legislatures very often depends on the available resources of the parliament, both in terms of budget and human skills. For example, tape recording can be very cost effective but offers limited functionality, while the more expensive digital recording provides more possibilities such as the publication of digital audio records on the parliamentary website. More promising is the application of voice recognition technology, although it still involves complexities and additional costs.

Overall, there is a lack of understanding regarding the range of technologies being used around the world for recording and publishing parliamentary proceedings; the benefits and drawbacks of each approach; which technology is more appropriate for a specific context, taking into account the income level disparities as well as language and cultural differences among countries; and what opportunities for bilateral or multi-lateral parliamentary cooperation exist, regardless of the development level of each parliament.

Goals and objectives

During a specialised session on this topic at the World e-Parliament Conference 2009, participants called for more inter-parliamentary cooperation in this important area. The July Workshop on Technological Options for Recording Plenary and Committee Sessions in Parliament intended to assist parliaments of developing countries that still do not publish recordings of plenary and committee proceedings regularly or timely, and those that are looking to improve their capacity to deliver a better service, to identify the good practices, ideas and technologies most appropriate for their needs for improved transparency and accountability, availability and preservation.

Selected parliaments using advanced technologies for recording plenary and committee sessions were invited to deliver in-depth presentations and engage in open discussions with a view to exchange experience and knowledge with their peers, both at the theoretical and operational level.

Structure of the workshop

The Workshop was structured around four key steps in the workflow – capturing, processing, managing and publishing - and on some of the most commonly used technologies for the recording and publication of parliamentary proceedings, such as stenography, speech recognition and digital recording and transcription.

Targeted Audiences

The workshop was directed to:

- Parliamentary reporters (Heads of offices or senior staff), as they need to understand the potential of ICT for their work and to know how to make effective use of newer ICT tools and methods for producing verbatim records

- Staff providing IT services and support to parliamentary reporters, as they are the ones who maintain the audio recording / transcript producing technology and provide appropriate services

The European Parliament through its Office for Promotion of Parliamentary Democracy (OPPD) and the Global Centre for ICT in Parliament sponsored a limited number of participants from developing countries to participate in the workshop. As a result of the workshop, a roadmap for further work in this area was laid out. A small working group has since been established which will work on a Handbook on Capturing and Recording Parliamentary Proceedings. A baseline document will be drafted by the Brazilian Chamber of Deputies. The matter will also be discussed at the 2010 World e-Parliament Conference and be the subject of two regional workshops to be convened in Africa and Latin America in the course of 2011.

Dick Toornstra
Director
Office for Promotion
of Parliamentary Democracy

OPENING SESSION

Mr. Dick Toornstra, Director of the Office for Promotion of Parliamentary Democracy, at the European Parliament, welcomed participants and stated the purpose of the workshop, which was to deepen the knowledge of different approaches and systems regarding the capturing and reporting of parliamentary proceedings by presenting examples of concrete solutions, thereby allowing parliaments to benefit from best practices and discussions among peers. He invited participants to exchange frankly and openly about the successes and failures they have encountered in transforming the process of reporting in their parliaments. Mr. Toornstra then introduced Hon. Rainer Wieland, Vice-President of the European Parliament.

Mr. G. Casini, Hon. R. Wieland, Mr. D. Toornstra

In his opening address, **Hon. Rainer Wieland** welcomed participants on behalf of the European Union. He expressed his appreciation for the work of the Global Centre for ICT in Parliament, notably through the World e-Parliament Conferences and the World e-Parliament Reports, and for the collaboration between the Global Centre and the European Parliament. Mr. Wieland reaffirmed his parliament's commitment to assist parliaments all over the world in developing sufficient capacity to fulfil their tasks of legislation, oversight, and representation; and to stimulate strong worldwide inter-parliamentary cooperation, as many of the challenges faced by parliaments can only be addressed through internationally agreed decisions. Taking cues from the decisions needed to control the damages of the financial crisis, Mr. Wieland stressed that such political coordination would not be possible without the use of advanced information technologies. Parliaments thus need to be properly equipped, as it is Mr. Wieland's conviction that a modern parliament cannot do its part in a democratic governance system without making full use of IT. He underscored the importance of direct exchange between parliamentarians, both within and across countries. Mr. Wieland however emphasized the need to take into account the different levels of IT adoption among parliamentarians. He stressed that speed in itself has become a political issue, as politics acquired a more instant nature, (instant decision, instant comment, instant knowledge). In this regard, the Bureau of the European Parliament has opted and advocates for a forward-looking, long-term approach to challenges, including in the ICT field.

Mr. Wieland noted that despite its technical nature, the stakes of the Workshop were highly political. The essence of a parliamentary democracy is that it resolves challenges and problems, disputes and arguments by talking. Such talking, exchanging of ideas based on knowledge and political ideologies, which may take place in standing committees, delegations and plenary meetings, should not only enhance the quality of decision-making, but also allow these decisions to become understood and supported by the people represented in parliament. Parliamentary debates should be seen by citizens as reflecting their opinions, living within the society, allowing minorities to be heard and instilling a sense among the citizens that the decisions have resulted from meaningful and fully representative discussions.

Mr. Wieland also noted that the media landscape is changing as more and more people become content producers and content transporters.

Recording and publishing parliamentary debates are essential to the openness of the discussions and to transparency, two of the cornerstones of democracy. Publicly accessible records of debates, including the history of bills, hearings and debates in committees meetings, are of essential importance in the government structure. Mr. Wieland cautioned against the introduction of electronic gaps in the archiving of written records and the over-abundance of unstructured information. While ICT tools can be instrumental in strengthening democracy and encouraging political participation by facilitating accessible, transparent and accountable processes, leaders of parliaments need to commit to ensuring that all segments of society are able to access their information and thus participate in the democratic process. Records of debates alone will not provide that transformation. Much more will be needed to allow citizens to follow each step of the parliamentary process. The digital divide must be bridged, not only between countries, but also within countries, and in the coming years, the European Parliament will strengthen its proactive role in this regard.

Mr. Wieland noted that the Workshop constituted part of the answer to the request from the World e-Parliament Conference 2009 for a platform for continued exchange of experiences and discussions of concrete solutions. By stressing the figures from the World e-Parliament Report 2010 concerning parliamentary reporting, Mr. Wieland acknowledged that the workshop is both timely and useful. He concluded by wishing participants constructive discussions at the workshop.

In his opening address, **Mr. Gherardo Casini**, Coordinator of the Global Centre for ICT in Parliament, thanked Hon. Wieland, Mr. Toornstra and the European Parliament for hosting the workshop and for sponsoring the participation of a number of delegates from all over the world. Mr. Casini presented the newly published World e-Parliament Report 2010 and described the role of the Global Centre for ICT in Parliament, its mandate and activities. He framed the workshop as a concrete follow-up to discussions started at the World e-Parliament Conference 2009. He indicated that the workshop was the beginning of a process intended to explore and debate the important issue of providing information on parliamentary proceedings to the public, to members of parliaments and even to members of other countries' parliaments within an acceptable timeframe. He urged participants to detach themselves from any environment in the course of the workshop in order to have a fresh view unencumbered by legacy technologies. He also invited them to examine the possibility of working together as a group to prepare a handbook or guidelines on recording and publishing parliamentary proceedings. He expressed hope that by the end of the workshop, participants will have developed closer ties, exchanged practices and experiences and provided leadership for follow-up activities in this area.

SESSION 1: CAPTURING AUDIO AND VIDEO RECORDS OF PARLIAMENTARY PROCEEDINGS

Mr. Ennio Pinton, Head of the EUROPARL Webmaster Unit at the European Parliament, welcomed participants and presented the format of the first session. He then gave the floor to **Mr. Francisco Feio**, Coordinator of the Division of Reporting and Audiovisual System at the Assembly of the Republic of Portugal.

Mediabox - Assembly of the Republic of Portugal

Since 2002, paper versions of the Official Journal of the Assembly of the Republic of Portugal are no longer produced. The Official Journal is produced and distributed in electronic format (PDF), resulting in savings of almost one million euros per year.

As a rule, all plenary sessions are transcribed, as well as all the sessions of the budgetary committee and inquiry committees. Transcription of other committees' sessions is rare but can happen. In 2009, 12,225 pages were transcribed for the Official Journal. Other parliamentary texts, such as laws, questions to government, etc..., amounted to 132,669 pages. 1,432 hours were recorded, totalling 5,727 tapes. 821 additional hours of various events in Parliament were recorded. 4,227 hours of TV were broadcast. In order to facilitate the integration with the transcription system, each tape recording was limited to 15 minutes. Over the years, the Parliament has been facing the issue of rapidly increasing numbers of tapes to be stored and preserved. To address this challenge, the Parliament initiated the DigiAudio project, seeking to become a tape-less environment. The goal was to implement a full digital solution encompassing the capturing and distribution of the records of proceedings, and to introduce a workflow management system for transcribers and to make the digital recordings available to everyone, in-house and on the Internet.

Unable to find satisfactory solutions on the local market, the Parliament issued an international tender which lead to the Mediabox system, by Xtream. The system is modular and went through a high degree of customization to meet the particular needs of the Parliament. Software modules provide key features such as encoding the audio, cataloguing and indexing the records, scheduling tasks, transcribing and publishing. An application server provides all the applications of the system and a web server provides access for the management of the system, as well as search and retrieval of the records. Storage is assured through a 9TB online system and a tape library. A key requirement of the system was that it work within the existing network infrastructure and capacity. The entire system is remotely-managed and can be controlled by one single person.

Capturing Phase

Consisting of a regular PC with audio recording modules, an encoding station (one in each room) captures and encodes the audio in MP3 at a bit rate of 128Kbps. The encoding station sends audio fragments every 15 minutes to the server where they are immediately available to the transcribers.

Although MP3 is not an archive format, its choice was justified by its good compression rate and its almost universal support by media players. If needed, high quality uncompressed audio is nevertheless available as it is recorded for broadcasting.

Processing Phase

The processing phase begins with cataloguing and indexing the records. This step is essential in order to be able to retrieve the recordings. It may take place during the capturing phase or later using the cataloguing module. XML files are generated with metadata associated with the recordings (number and date of the plenary session, name and date of the committee, brief description of the session, names of the speakers, at what time they spoke, in which session). The audio files, transcoded at a lower bit rate (48Kbps) for distribution, and the metadata are made available and are searchable on a public server.

The transcription essentially consists of listening to the audio recordings and typing the text. The transcribing application is fully integrated with Microsoft Word, but uses the .RTF format instead of .DOC. Transcribers that log on the system have access to a workflow tool that manages and allocates tasks between transcribers and editors.

Publishing Phase

In the publishing phase, the transcribed documents are properly formatted according to the Journal template, converted to PDF and uploaded by FTP to the website of the Parliament. An index database of the text, along with additional metadata (legislature, legislative session, Journal number, date), facilitates searching through the text records.

Video Recording

Video is captured by cameras currently installed in 5 rooms (plenary hall, Senate hall and 3 committee rooms). 4 additional rooms are being equipped for video capture. On average, 14 hours of footage are broadcast daily on the parliamentary channel. For archival purposes, a clean feed of the video, also encoded in Windows Media Video (WMV) format, is stored on DIGIBETA tapes. For broadcasting, a broadcast server provides a video feed on which are added data such as the name of the speaker, his or her party, and sign language interpretation. As the most important meetings (plenary sessions and hearing with members of the Government) are videotaped, the video records also serve as backup for the audio records.

Video recordings, along with XML-based metadata, of plenary sessions only are made available to the public in

WMV format. The Parliament found the WMV format to be easy to capture and process, reliable and does not require powerful computers. Free tools are available to Microsoft users for encoding videos. Web streaming is provided through Windows Media Servers.

The parliamentary channel has its own website providing information on the broadcastings. An archive is also available, which only provides recordings of entire sessions (plenary sessions, committee meetings or events).

The Parliament is planning the implementation of a new web TV platform that will include Flash video encoders for 9 simultaneous live feeds. Video recordings will be made available on a Video On Demand server immediately after the session. Currently for the plenary sessions, one archivist covers 3 sessions, 12 hours of video per week and takes 2 weeks to index the videos. The challenge for committee meetings, which total 50 hours per week on average, is to implement an automated metadata system that will automatically recognize who is speaking and tag the video accordingly. The files are currently made available with basic metadata (copyright information, date and description of the session). Mr. Feio concluded his presentation by stressing the importance of tagging the files, even with a minimal amount of metadata.

Discussion

Mr. Pinton thanked Mr. Feio for his presentation and opened the floor for questions.

Responding to a question by **Ms. Lida Horlings**, member of Intersteno, Mr. Feio clarified that the transcribers are always present during plenary sessions, as there are things that are not recorded, such as room reaction, but that are reported in the Official Journal. All transcribers are internal staff of the Parliament. In rare occasions, for special hearings and depending on the work load, the transcription may be outsourced. However, given the specific nature of parliamentary activities, outsourced transcriptions must be entirely reviewed.

Responding to **Mr. Mohamed Sammoud**, Head of the IT Department in the Chamber of Deputies of Tunisia, Mr. Feio provided further details on the process of cataloguing and indexing the video database. Even though the needs of the video users are very specific, the process is integrated with other cataloguing systems in use in the Parliament, and relies on the EUROVOC thesaurus for indexing, allowing the videos users to search not only by speaker and by time, but also by topic.

Mr. Emmanuel Willems, System Engineer in the Senate of Belgium, inquired about how the decision to no longer produce the paper version of the Official Journal was taken. Mr. Feio indicated that the decision was taken by the Speaker of the House and the MPs themselves. The decision was justified by the substantial savings and the decrease of the circulation of the Official Journal, which over time had come to be produced only for MPs and members of the government. It was not an easy decision and it required some changes in the law to address the legal issues surrounding the absence of a printed version of the Official Journal of records. A reliable digital archiving system had to be designed to preserve the Official Journal in electronic format.

Reporting Proceedings in the Senate of Belgium

In the second presentation of the session, **Mr. Stéphane Gourdange**, Computer Officer, Hansard Office, and **Mr. Emmanuel Willems**, Systems Engineer at the Senate of Belgium provided an overview of the reporting practices in their Chamber.

Mr. Willems provided some background information about reporting in the legislature. In the Belgian Senate, reporting is done in 2 of the 3 official languages of the country. Until 1998 there were two reporting departments, one responsible for the Hansard, in the speaker's language, and the other one responsible for the summaries (translated). The two departments were merged in 1998 and a computerized workflow was implemented. Video broadcasting was introduced in 2000. Since 2006, all plenary meetings are broadcast in video and available on demand with captions. Since 2008, video clips are available for downloading and reuse on third-party websites.

The Senate is composed of 74 Senators and 300 staff members. There are on average 35 days of plenary sessions every year, A session lasts on average 3 hours, but can vary between 15 minutes and 12 hours. There are between 150 and 200 committee meetings every year, each lasting on average between 1 hour and 2 hours. No report of committee sessions is produced, although all sessions, either in plenary or in committee are audio-recorded. The Reporting Office consists of 30 full-time equivalent staff, for a total of 50 people. The reporters are split into two teams of about 12 people. Each team covers one of the official languages used in the Parliament. The Reporting Office devotes about 50% of its time to the proceedings of parliamentary sessions. It provides other services not covered in the scope of the presentation.

CourtSmart – Audio capture and transcription in the Senate of Belgium

Mr. Gourdange presented CourtSmart, a commercial application used by the Senate to produce the reports. CourtSmart provides a digital audio recording system and a workflow module for tasks allocation and management. Microsoft Word is used for text edition. Specific tools have been developed to extend MS Word and provide features such as recordings of votes and automatic transmission by email to the speakers of the text of their speeches.

The project started in 1998 in the framework of a wider initiative aiming at re-structuring 5 different departments involved in the production of various reports. Because of limited communication between the offices in charge of the verbatim report and the one in charge of summaries, there was a lot of duplication. A set of technical requirements were defined for the new system. It had to be a client-server environment, with audio records encoded and stored on a server and accessible throughout the Senate. A backup server would provide redundancy and continuity of service. Its hardware and software components had to be compatible with the infrastructure already in place. Some functional
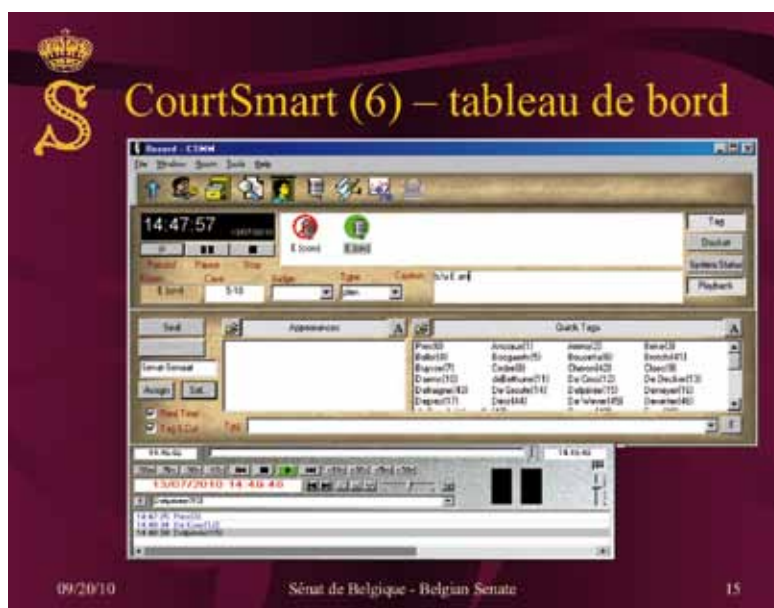
requirements were also defined. The new platform had to be as flexible as possible, allowing different types of publications and word processors. It had to provide workflow management features, and it had to support several languages (French and Dutch). Finally it had to allow the publication of a provisional report within 3 hours of the end of the session.

The initial purpose of the CourtSmart system, developed by an American company of the same name, was to manage transcription of court proceedings. It had a basic workflow that was extended to meet the needs of the Senate. It allows simultaneous encoding of the audio records and insertion of timestamps to be used by the transcribers. The audio records are available for playback even before the end of the recording. Only verbatim reports of the plenary sessions are produced, but all committees' sessions are recorded and encoded. For each session, both the original and the interpreted feeds are encoded.

The technical platform of the CourtSmart system in the Senate consists of two Windows 2003 servers, MOTU digital audio recorders and a MySQL database. Although CourtSmart is not an open source system, the use of the open source MySQL database software allows direct extraction of information from the CourtSmart database to be reused for other purposes. The system supports open standards such as Ogg/Vorbis. It had a client/server architecture and can be managed from a regular computer running the MS Windows operating system and located in the plenary room.

During a session, the in-room reporting team consists of one operator (1-hour shift), a chief reporter (1-hour shift) and one transcriber (5 minutes shift). All other activities related to the recording of the sessions take place outside the meeting room. The operator, who can perform his/her tasks away from the meeting room and is usually a secretary, selects the server and channels on which to record, starts/stops the recording, inserts time codes marking the beginning and end of a speech or discussion on a subject matter, and splits the recording in takes of less than 5 minutes, allowing reporters to produce a preliminary transcription within one hour. The chief reporter assigns tasks to the transcriber and the operator, oversees the recording operations and handles elements of procedure such as votes, as well as incidents that may happen during the session. The transcriber takes notes, notably of incidents that may not be recorded, and then in his office transcribes the takes assigned to him by the chief reporter.

After the transcription, the task is automatically available to the editors for review. The chief reporter does a final review of edited transcriptions in 1-hour segments. The texts are then automatically collated. Annexes and a table of content are also prepared and added automatically. HTML and PDF versions are produced and provisionally published on the web (within 3 hours) and in print (short run of 180 copies).

In the final stage of the process, the documents in the CourtSmart system are translated and the translation revised. A final review of the documents takes place and corrections by the speakers, who have a deadline of 48 hours, added. The final version is produced in HTML and PDF formats, printed (700 copies) and posted on the website of the Senate, within 3 days of the session.

Since its launch, the CourtSmart system has provided several benefits. The entire workflow of the publication of the parliamentary proceedings is now managed internally, as opposed the previous situation in which many of the critical tasks were handled by the external printer. The various departments initially involved in the process have been merged into one single office, leading to better coordination of tasks. The transcribers reliably have access to the audio records whenever they need. The total number of people involved in the process has shrunk by 30 people. Metadata can be reused for the production of video clips.

Video recording and streaming in the Senate of Belgium

Mr. Willems presented the video recording and streaming platform in the Belgian Senate. Under the initiative of the Speaker of the Senate, video broadcasting was launched in 2000. The aim was to make TV quality recordings available for the media.

The Senate was thus equipped with broadcast quality TV cameras and the next logical step was to explore the possibility of web streaming of the videos. The RealVideo was chosen because at the time it was the only broadcasting format available for all platforms and it supported closed-captioning. Currently, the Senate records video in RealVideo and MPEG2. The latter format was adopted to provide media outlets with a video feed that they can use without de-

ploying their own technical crews in the Chamber. Moreover FLASH (transcoded from MPEG2) and MPEG4 (transcoded from MPEG2, used internally) are also available on the website of the Senate. While MPEG2 is mostly used by broadcasters, it is open enough to be transcoded, using open source tools, into other formats such as FLASH, which caters more to the general public, and is used on platforms such as Youtube and MPs' websites where FLASH videos can be embedded or copied.

The video recording and processing makes extensive use of the CourtSmart tags, which provide metadata such as the identity of the speaker, the subject matter discussed and the time codes Because of these metadata, the videos can automatically be split into clips which are encoded in FLASH and MPEG2, on the fly, with the recording still happening. The video clips can thus be accessible in near real time on the website of the Senate. As the CourtSmart tags are not translated, may contain some internal information and may not have all the necessary information, they are not made available to the public. However, they are used to automatically extract information from the databases, which can then be used to catalog and index the video clips, making them browsable and searchable in full-text on the content of the title of the clips. On the web interface, users can view a video but they can also download the clip in either FLASH or MPEG2. They are provided the direct link to the video as well as the code to embed it in their own websites.

The RealVideo format is still used in the Senate as the main source for live streaming, archiving and video on demand. The video on demand system makes extensive use of the CourtSmart metadata, as well as additional metadata inserted manually, to allow the videos to be browsed and searched by speaker, subject matter, description or references. As for the live feeds, the CourtSmart metadata are not inserted directly in the videos, but are used to retrieve information from the databases with which the on-demand videos are tagged automatically, in the two official languages. Hyperlinks to background information on the subject or session are provided automatically. The time codes allow the user to directly access the segment of a video where a specific person is speaking or a subject matter being discussed. A module developed by the Senate links the video to the text of the Hansard, and would thus allow users to jump back and forth to the corresponding specific time in the video as they are reading the verbatim record or to the corresponding specific line in the text as they are watching the video. As the videos are only made available in the speaker's language, it would also allow access to a translation of the proceedings. For internal reasons related to concerns about the accuracy of the transcription, the feature is not yet available to the general public.

The MPEG4 format is also used for live streaming as it allows viewers to play back the live stream from earlier points in time, a limitation that RealVideo suffers from.

Mr. Willems concluded his presentation by mentioning Express Scribe, a free media player with transcription functionality.

Discussion

Mr. Pinton thanked Mr. Willems and Mr. Gourdange for their presentations and opened the floor for questions and discussions among participants.

Mr. Willems provided more information on the use of the CourtSmart tag to markup the videos. As the tags are simply text data with related time codes, they can be extracted directly from the CourtSmart database. A unique identifier allows the extraction of all tags associated with a specific video. As the audio and the video are recorded independently, it is important that they are exactly synchronized. The Reporting department can fine-tune the tags at any time in order to improve the synchronization.

Responding to **Mr. Sergio Falcão**, IT analyst in the Chamber of Deputies of Brazil, Mr. Willems indicated that the CourtSmart developers chose the Ogg Vorbis open standard because it did not have the licensing requirements of MP3 and it allows recording of multiple channels. The audio files are used for internal purposes only and have no legal value, the official record still being the text record (paper). For that reason, they are not archived and can be deleted once the Hansard is published. The videos on the other hand are stored on high-quality digital tapes. At the moment, there is no policy for archiving electronic data in the Senate. For historical reasons, videos are archived in RealVideo, but the Senate is exploring alternative open standards and open source tools given the high cost of video software.

Mr. Aziz El Mouhib, Head of Information and Communication Department in the House of Representatives of Morocco inquired about the impact of the online availability of audio/video records of proceedings on citizens' participation and interest in the work of parliaments. Mr. Gourdange and Mr. Feio stated that although no formal study has been carried out, empirical evidence, from inquiries during rare instances where clips are not available due to various reasons and from media coverage of parliamentary activities, show that there is a high level of interest in their availability. Another factor making an assessment difficult is that the videos and their use cannot be tracked once they are downloaded from the parliaments' websites. Mr. Pinton concurred that the situation is similar in the European Parliament.

Mr. Laheen Arabi, Head of IT in the House of Councillors of Morocco, inquired about the technical means put in place in the European Parliament for recording and transcription. Mr. Pinton explained that the European Parliament can meet in Brussels and Strasbourg. Both locations are equipped with broadcast-quality equipment for the plenary sessions. Committee rooms are fitted with remotely controlled industrial cameras that can be focused on the current speaker. Plenary sessions are broadcast in all 23 official languages of the Parliament. On the other hand, multilingual diffusion of the committees sessions vary according to their importance, media coverage and availability of interprets. On-demand videos, augmented with textual information, are available a few hours after the live broadcast.

Responding to **Mr. Santo Voeuk**, Director of ICT in the Senate of Cambodia, Mr. Gourdange indicated that server capacity in the Senate of Belgium allows the recordings to be kept for more than one year, removing the urgency of deleting them to make room on the servers. Committee departments are responsible for the server handling recordings in their respective committees, the servers for the plenary sessions being used as backup. Mr. Willems clarified that the IT Department monitors disk space on all servers. The main and backup servers for the plenary sessions have

a capacity of 500Gb each. The use of the Ogg Vorbis format, which is very well compressed allows the disk space to be used efficiently, as it is able to detect blanks in the recordings. After a specific amount of time (2-3 months), and barring any request from the committee department, the recordings on the backup server are deleted. At the end of a legislature, all backup recordings of the legislature are deleted except those that have been expressly requested to be kept. The authorization of the main user of a recording is sought before the primary and last copy is deleted.

Mr. Ali Boulemtafes, Head of the Systems Office in the Council of the Nation of Algeria, requested more information about the correction process from the recording of the audio to the final publishing and the use of slang by speakers. Mr. Gourdange indicated that the transcription is not verbatim. Corrections are mostly semantic, and do not change the meaning of the spoken words. It rarely happens that speakers challenge the transcriptions as they know that the audio recording is available. **Mr. Malik Bouchama**, IT Director in the Council of the Nation of Algeria, opined that in Algeria, transcribers must accurately report what was said without changing a single word, even when slang or non official languages are used. **Mr. Jacques Capitaine**, Head of the Hansard Office in the Senate of Belgium, explained that eventual challenges are usually resolved amicably without major issues or significant time delay. Major issues such as foul language or insults are left to the Secretary-General. Mr. Feio indicated that in his Chamber, audio and video recordings, although they have no legal value, are kept and used to resolve such situations. **Mr. Andrea Antonello**, Senior Administrator, Plenary Acts Unit, Directorate for the Plenary in the European Parliament, stated that expressions in non-official languages are kept as-is, in cases where the speaker seeks to achieve a specific effect of style. In most cases, however, the transcribers change the expressions so they can be understood by the translators. MPs must send their corrections within a week after the transcription. Although they are sometimes unavoidable, the Reporting office endeavours as much as possible to minimize the risks of challenges by the MPs.

Responding to **Mr. Gerson Haroldo Donis Gonzàlez**, Legislative Technician in the Congress of the Republic of Guatemala, Mr. Gourdange further explained that there is no process of formal approval of corrections in the Senate of Belgium. The approval is implicit. Mr. Feio indicated that in the Assembly of the Republic of Portugal, the Official Journal is approved in the Plenary session. Final authority for approving disputes regarding corrections lies with the President of the Parliament, but it has never been invoked, as issues are usually resolved between the editing department and the speaker.

Mr. Abdellatif Assaraj, Chief of the Plenary Sessions Office, House of Councillors of Morocco, informed that a locally developed transcription system for the Arabic language is being used successfully in the Parliament of Morocco. Mr. Bouchama expressed the desire to continue collaboration with his colleagues from Morocco to explore the possibility of implementing that system in his Parliament.

Responding to a question by Mr. Boulemtafes regarding automatic voice recognition, Mr. Willems indicated that he is aware of a software that can index videos without preliminary training of the voice recognition engine, but only for the English language.

Responding to an inquiry by Mr. Willems, Mr. Antonello indicated that the European Parliament uses a system that links transcriptions and video records, allowing videos to be searched by keywords. The system also presents links to related documents, debates, votes, bills, adopted laws. Mr. Feio reported that his Parliament is also implementing such a system for plenary sessions.

Mr. Falcão inquired about the availability of logical information models taking into account, for each of the text, audio and video components, the different formats, resolutions, metadata, and even different languages. He invited participants to collaborate in order to establish a reference model. Mr. Pinton indicated that a first step would be to establish an inventory of physical and logical resources within the organization, and a mapping of their inter-dependencies. This would facilitate the clustering and automatic linking of related information. Mr. Gherardo Casini, Head of the UNDESA Office in Rome, explained that the Workshop and the related questionnaire have been structured around the basic idea of a framework. The proposed logical model could be a start of joint activities that would help many parliaments in producing written records of their proceedings.

Ms. Lotte Geunis, Junior Parliamentary Development Officer at UNDP's AGORA Project, asked Mr. Feio about the legal issues surrounding the changes brought about by technology in recording practices. In Portugal, the law, which initially recognized only the written records as the official expression of what happens in the Chamber, had to be changed to take into account the fact that he Official Journal would no longer be issued in prints. However there is still no provision regarding the legal value of audio or video recordings of parliamentary proceedings. Mr. Willems stated that in Belgium as well, the Official Journal of the Senate is no longer printed, but made available for download as a PDF document. Only the legal department has expressed concerns about the reliability of the Internet, and as a compromise, a copy of the Journal is downloaded every day for safe-keeping on the internal server of the IT Department.

Mr. Mohamed Sammoud, Head of the IT Department in the Chamber of Deputies of Tunisia raised the importance of integrated content management systems that can handle audio and video as well as text content, with indexation and thesaurus. Mr. Bouchama called for more collaboration to improve support for Arabic language in tools for transcription.

Ms. Simone Bardot, member of Intersteno, inquired about the use of real time transcription for closed-captioning on parliamentary TV channels. Mr. Willems explained that the Senate of Belgium does not have parliamentary TV channels. The low resolution of the video for its web broadcasting mandates the use of a technology different from live insertion of text in the video feed. Tests conducted have also highlighted the issue of synchronization between the text and the video. Mr. Feio clarified that in Portugal, the Parliament mandates the use of sign-language for the hearing-impaired during broadcast. Mr. Willems noted that although there is a sign-language interpreter in the Senate of Belgium to service an MP who is hearing-impaired, the sign-language interpretation cannot be inserted in the video feed because of multilingual requirements: the sign-languages in the two official languages of the Parliament of Belgium are different.

SESSION 2: PREPARING WRITTEN RECORDS

Mr. Joao Abreu, Programme Expert for Capacity Development and Technical Assistance at the Global Centre for ICT in Parliament, and Chair of the session, welcomed participants and introduced the focus of the session, the preparation of written records of parliamentary proceedings. He then gave the floor to the first presenter.

CameraVox - Reporting workflow in the Chamber of Deputies of Italy

Mr. Guglielmo Romano, Head of the Reporting Office at the Chamber of Deputies, introduced the CameraVox system in use in the Chamber, a system that is based on the rules of procedure, human resources, technologies, and organization. According to the rules of procedure, both verbatim and summary reports of all plenary sessions must be produced by the Reporting Services Office. All committee sittings must have a summary report produced by the Committee Secretariat and verbatim reports only when mandated by the rules of procedure. There is a Secretariat for each of the 14 Standing Committees. The Committees Secretariats deal with everything related to the activities of the Committees, from preparing texts and amendments to organizing the sittings and supporting the Committee Chairs.

The system does not require professional stenographers or reporters. Staff who will work as reporters take a training course after joining the organization. In the Chamber, all parliamentary officers are expected to be able to carry out different types of legislative activities and it is not expected that those starting out as reporters will spend their whole career in the same capacity. It is the view of the Chamber of Deputies that the reports are best prepared by people knowledgeable on parliamentary subject matters.

CameraVox uses voice-recognition based on regular devices, such as a digital audio recorder and a PC. The system allows simultaneous processing for publishing on the Internet and printing on paper.

Because CameraVox relies on ordinary hardware and software, it can easily be replicated outside the Chamber of Deputies of Italy, with some customizations to the dictionary to account for the specific language and parliamentary vocabulary.

CameraVox workstation in the Chamber of Deputies of Italy

Basic Drafting

The Chamber follows a three-step workflow. In the first step, junior reporters (young 4th-level officers holding a first level degree in law, political sciences, economics or literature), produce a basic draft. The workstation for basic drafting, called CameraVox, consists of a computer to which are connected a digital recorder (Marantz PMD671), a headset (Andrea Electronics ANC-750 with Noise Cancellation microphone technology used for dictating) and sometimes a foot pedal for audio player control. The system uses off-the-shelf speech recognition software (currently IBM ViaVoice, although this is under review), a speech dictionary that is continuously updated as it is used, a digital audio player called AD writer (an ordinary player although specifically customized for the Chamber of Deputies) and a profiler which recognizes the voice profile of each parliamentary reporter.

The junior reporter initiates the recording of the proceeding, goes to the floor five minutes before his shift, takes notes for five minutes, then goes back to his workstation where he listens to the digital recording, and then dictates (repeats what has been recorded) using the speech recognition software. This results in a text file which he reviews and then transmits to a more senior reporter for proofreading. The process takes about one hour, after which the reporter takes a break of 15 minutes.

Proof-reading

The second step, proof-reading, is performed by senior reporters (more experienced 4th-level officers). Each senior reporter receives a text file created by the secretariat joining together four 5-minutes shifts. Listening to the corresponding 20-minute portion of the digital audio recording, the senior reporter reviews and edits the text, and then transmits it for publication on the website as a "provisional edition", which is available within 100 minutes after the recording. The senior reporters use a computer with headset, microphone, a foot pedal (if they like), the speech recognition software and the digital audio player.

Final Reading and Coordination

In the last step, 5th-level chief executives (holding second level degrees in law, political sciences, economics or literature), perform a final reading. They also have not received a specific training as reporters, although there still are a few stenographers, on the verge of retirement, who have attended specialized schools before joining the administration in the 1980s. They organize the workflow and bring their long-term experience to bear on the process, notably when it comes to solving procedural issues that may arise at any step of the workflow. They check the printed draft sent by the typography unit, making sure that procedural information such as votes are correctly integrated. Then they do the final and general control of the verbatim report and transmit it for printing and publishing on the website as the official edition, within 100 minutes after the end of the sitting.

An official summary report is made available on the website within 25 minutes after a speech has occurred.

Committee Sittings

When verbatim reports are produced for Committee sittings, the process is different because there is no need for publishing them in near-real time as in the case of plenary sittings. The first step of the workflow is outsourced to external contractors. A software program splits the digital recording into five-minutes segments and uploads them to the server of the private contractor, outside the premises of the Chamber of Deputies. After 24 to 48 hours, the contractor, which also uses speech recognition technology, sends back simple text transcriptions, which are then reviewed by senior reporters working in the Committee secretariat. Within 48 hours after the sitting, a provisional edition of the report is made available on the website, and the official, final edition is published after 30 days.

Discussion

Responding to **Mr. Mahesh Perera**, Director of Information Systems and Management in the Parliament of Sri Lanka, who inquired about the legal difference between the provisional and the final edition of the report, Mr. Romano clarified that only the final version is the official record of what happened during the sittings. The Reporting Office always seeks to make the provisional version of the report as close as possible to the final, official version.

Ms. Lida Horlings, member of Intersteno, asked whether the Chamber produces true or intelligent verbatim reports and inquired about the nature of the summary reports. Mr. Romano indicated that summary reports are the only type of document produced for committee sittings, as mandated by the rules of procedure. As such they are slightly longer and more precise than the summary reports produced for the plenary sittings. As there is a verbatim, word-by-word, report for the plenary sessions, the summary report in this case is just an account of the main political issues, procedural aspects and decisions. **Mr. Jacques Capitaine**, Head of the Hansard Office in the Senate of Belgium, indicated that the Belgian Senate decided 8 years back to eliminate the summary report of plenary sessions and to date it has not received a single complaint. Responding to **Mr. Carlo Marchetti**, Head of the Information Systems Development Office in the Senate of Italy, he explained that the reasons behind the suppression of summary reports were cost-savings, and lack of usefulness since the full reports was available within 3 hours. The decision was taken at the level of the President of the Senate. **Mr. Francisco Feio**, Coordinator of the Division of Reporting and Audiovisual System at the Assembly of the Republic of Portugal, noted that in Portugal, the summary report is produced as the first part of, and within, the Official Journal.

Mr. Mbuyisazwe Hector Tshabalala, Editor in Chief at the Language Services Section of the Parliament of South Africa opined that there can be various understandings among parliaments regarding the definitions of the terms report and summary report. He indicated that in his Parliament, the equivalent of the summary reports earlier discussed are the minutes, which are also integrated in the verbatim reports. For Committee sittings, a report is prepared that must be approved by the Committee that is to be debated in the plenary session. Daily summaries may be prepared for long Committee sittings, but only the comprehensive report, not verbatim, prepared at the end and approved by the Committee Chairperson can be submitted to

the plenary sitting for debate. Mr. Romano stated that in the Chamber of Deputies of Italy, there is no formal approval of the verbatim or summary reports from a procedural point of view, although MPs may request corrections within two hours after their speech. Past that deadline, MPs may state their disagreement with the content of the verbatim report, in which case the report will not be modified, but their concerns will be recorded in the report of the session in which they are expressed. The Minutes, which just list the speakers and decisions taken in the session, must be approved by the plenary session before inclusion in the Order of the Day.

Reporting in the Senate of Canada

Mr. D'Arcy McPherson, Managing Editor for Debates Services, presented the reporting procedures in the Senate of Canada. The Senate is not an elected body. It is composed of 105 Senators appointed by the Prime Minister and serve until the age of 75. Their primary mandate is to represent the provinces and the minorities of Canada. French and English are the official languages in Canada and everything is reported in both languages.

Prior to the 1990s, both Houses of the Parliament of Canada used machine- or pen-shorthand writers. Because of cost-cutting concerns, the House of Commons migrated to a system of tape recording and typing, eliminating the need for stenographers. The Senate opted for a real-time transcription technology.

In plenary sessions, reporters sit in the center of the Chamber. Two teams in each language are assigned at the same time and they alternate in 30-minutes shifts during sessions. Committee rooms are equipped with several screens allowing reporters, senators, witnesses and people in the gallery to view documents displayed or follow real-time transcriptions by the reporters in the two languages. Although it makes for a sensory-challenging work environment, the Senate prefers to have reporters in the meeting room as it allows eye-to-eye contact with the person speaking and to gather documents that may be referred to. They are also able to include off-microphone comments if they are responded to.

The same system for capturing text is used in both plenary and committee sessions, with some minor changes in deliverables. In the cases where a committee travels outside of the Parliament, the task is outsourced to freelance firms. The Senate does not produce true verbatim reports.

The Debate Services office is composed of 18 reporters, 9 for English and 9 for French, who all use computerized machine shorthand. They cover the plenary, 18 standing committees, 1 sub-committee, two joint committees and various events as and when required. The committees generally review legislation or undertake studies that they may be assigned and which may last over the period of a parliament or beyond.

The machine shorthand is based on the Stenotype model except for three reporters who use the Grandjean keyboard. All reporters must be able to write at speeds up

Stenograph Shortland Keyboard

Layout of the stenographic keyboard used in the Senate of Canada
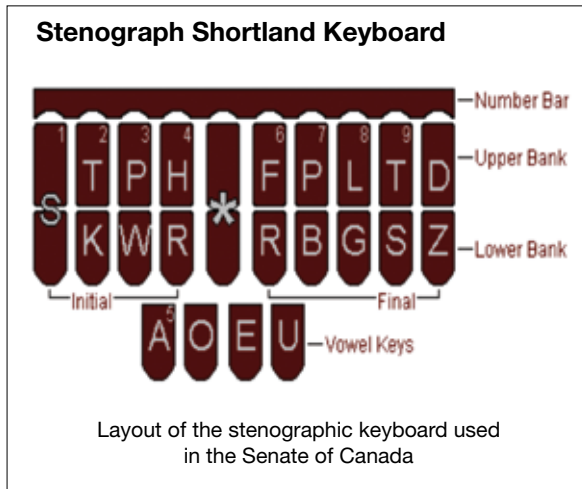
to 260 words per minute. They use the same software to translate the shorthand notes into English or French. The shorthand dictionary is digitally-based and easily manipulated.

By opting for a transcription technology, the Senate was able to maintain the skill-set and body of knowledge that existed among its reporters and to enhance their skills to provide new value-added services such as instant-transcription in English and French for Senators who are hearing-impaired. This particular process, called Communication Access Realtime Translation (CART) also allowed the live transcription to be displayed on monitors for people following the debate from the galleries in committees and in plenary sessions, as well as to send a data feed to the broadcasters covering the proceedings in committees. CART is also very useful for the citizens whose first language is neither French nor English. The immediate scrutiny of their work initially posed challenges for reporters, especially those practicing older shorthand theories. The use of newer approaches, which, for example, reduce the problem caused by words that sound the same, has alleviated some of the concerns.

Also challenging for the reporters are the technological shifts and software development. The software used by the reporters, developed by an external company, is continually modified. It is part of the learning process and professional development of the reporters to ensure that they are familiar with the software. Reporters maintain their skills through ongoing speed-building clinics and testing, grammar workshops and various seminars.

Although reporters on staff tend to stay, the Senate faces the challenge of renewing the staff lost through retirement. As the pool of reporters in the workforce is limited, the Senate endeavors to participate in the various reporting associations and the schools that teach shorthand reporting, offering internships, presentations and mentoring to students.

The reporters who are assigned to any proceeding take with them their shorthand machine, their notebook and software. The desks in all locations have network access and sound. Reporters may use headsets with one or two earpieces at their convenience, but they must be mindful

of cross-talk or off-microphone comments that need to be captured.

A software program, Total Eclipse, translates the shorthand notes into English or French from a dictionary. It also uses artificial intelligence to guess words not in the dictionary, with a 90% accuracy.

As it is being written, the reporters' text is sent to three different locations: the reporters and scopists who transcribe the texts, CART for hearing-impaired senators and monitors in the galleries, and captioning for broadcast.

Workflow

In the primary stage of the editing process, the unrevised text is sent to editors, translators, and to Senators and witnesses for verification and confirmation of their speeches. Although it is labeled "unrevised", the text is edited for contractions, grammatical errors, false starts, and verification of references, dates and numbers. The unrevised version is produced within one hour.

In the secondary stage, the managing editor reviews the revisions received from Senators and witnesses. Text extraneous to the meeting, or that alter the meaning after the fact, is not accepted. Newer Senators and witnesses are most vehement about their language at the beginning. The revised version (from Senators and witnesses) and the edited version (from editors) are merged and verified against the Journals which are similar to the Minutes and show not only what happen and how, but also who voted in what manner and the parliamentary forms and text included with bills.

The Debate Services office also faces the challenge of non-official languages, as there are a couple of Senators whose first language is neither English nor French. In the instances where they will use their first language, they have to provide advance notice so that appropriate interpretation and translation services can be arranged. Adherence to style is encouraged through regular seminars in the continuing process of staff development. A recurrent issue is the speed versus quality argument, as some reporters may spend too much time correcting the text and have to be pushed to deliver faster.

In the third stage of the editing, the managing editor compiles the final floor language copy, which is a mix of text in English and French. It is sent to the Publications Centre which coordinates the text using a desktop publishing software. It is then sent to the translators, who had already received the unrevised version. So the translation starts at the same time as the editing process and is refined when the translators receive the final version. The translation is sent back to the Publications Centre, which proofreads it for errors and prepares the final transcript for printing and posting online.

For plenary sittings, the online version in both official languages is posted by 6 a.m. the following morning, the printed version in both official languages is available by 7 a.m. and it is on senators' desks by 9 a.m. For committees, the process takes more time and is more flexible, as witnesses are included in the revision process. The unrevised version is produced within 2-4 hours and the revised is completed within 72 hours. The collation at the Publications Centre takes one day, the translation 5 days and the proof-

reading 5 days as well. The completed version is distributed within 15 days after the session.

After publication online and in print, requests for changes from Senators are reviewed by the managing editor. Approved changes are posted in the online version and inserted in the printed volumes.

Future Perspectives

In the future, the Debates Services office will seek to increase the use of electronic communications between the House and the Senate. At present there is no system for hyperlinking parliamentary documents such as bills, reports, etc. but there are discussions underway that are delayed by the bicameral nature of the Parliament. The House of Commons uses an in-house developed system called PRISM, to which the Senate does not have access. The management of the Senate is currently assessing the possibility of purchasing the software from the House. The Senate will also continually assess its processes and its use of technology to maintain its ability to meet the needs of its clients, Senators, witnesses and the general public whose views are regularly sought through short questionnaires.

Broadcasting of Senate proceedings, advocated by newer and more technology-aware Senators, will be implemented within the next two years. The Senate is exploring the possibility of linking text to sound and is also interested in voice-recognition, as the technology improves and can be used in a network and less standalone environment. It also would give more flexibility to reporters suffering from repetitive strain injuries, an issue so far addressed by limiting the shifts to 30 minutes.

Discussion

Mr. Tshabalala expressed concerns about the possible implementation of simultaneous shorthand transcriptions in his Parliament, as there are 11 official languages in South Africa. Mr. McPherson clarified that in the Senate interpretation and translation are understood differently. Interpretation does not reflect word-by-word what is said. Although the reporters write both the English and the French interpretations when spoken, those blocks of text are not included in the final preparation of the transcript. Only what was spoken in the original language is sent to the translation unit for an accurate translation of the original text. **Mr. Paul Dunstan,** Acting Director, Directorate for the Plenary at the European Parliament, indicated that translation of transcriptions is always performed by an expert who is a native speaker of the language. A further complication for the transcribers is that sometimes non-native speakers would express themselves in English, requiring the reporters to do a fair amount of massaging, in coordination with the MPs, to sanitize the text of the transcription.

Mr. McPherson indicated that in the Senate of Canada, the Translation office assigns each 10-minutes take to an individual translator. A second level review is performed to ensure cohesion and consistency between the takes. The whole process is manual.

Responding to **Mr. Kenneth Akibate**, Sergeant at Arms at the Pan-African Parliament, Mr. McPherson clarified that off-microphone remarks and heated discussions are less edited to avoid the appearance of taking sides. The prefer-

ence of the Debate Services office is not to include in the report politically sensitive statements not captured in the audio recordings. In cases where the reporter hears off-microphone remarks which are responded to by the speaker but are not captured in the audio recording, there must be an agreement between the person who made the remarks and the speaker as to their inclusion in the report. There are also instances where the speaker does not hear the off-microphone remarks but will read about them and raise a point of order the following day. The reporters must thread the fine line between what is un-parliamentary and what is acceptable, and request clearance from the appropriate authorities to include un-parliamentary language in the reports. Mr. Tshabalala indicated that in South Africa, only off-microphone remarks to which the speaker responds are included in the reports. Mr. Romano noted that in the Chamber of Deputies of Italy, any off-microphone remark that is heard is included in the report.

Mr. Abreu requested further details on the format in which text, audio and video records are stored in the Chamber of Deputies of Italy and the Senate of Canada. Mr. Romano stated that audio and video records in the Chamber of Deputies are maintained in formats readable by RealPlayer and Windows Media Player, namely RealPlayer, MP2, MP3 and WMA. Audio and video records are maintained only for the committee sittings that are reported verbatim, and the formats are the same as for the plenary sittings. Mr. McPherson indicated that in the Senate of Canada, the audio recordings are available for public use for the length of the parliament, after which they are archived and accessible on request. They are kept in WAV and transferable to a variety of other formats. Videos of committees are kept only for the length of the session. Text is archived in PDF and HTML and the Senate is in the process of migrating to an XML format.

Responding to a question from a participant, Mr. Romano explained that the choice of the application IBM ViaVoice was motivated by its market availability, its ease of customization and its support for the Italian language. Reporters can achieve a rate of recognition of 97%. As the software is no longer maintained, the Chamber of Deputies is currently assessing Dragon NaturallySpeaking as an alternative. Mr. Marchetti informed that the Senate of Italy has already migrated to Dragon NaturallySpeaking and achieves a rate of recognition of 99%. Responding to Mr. Abreu, Mr. Marchetti expressed the opinion that machine shorthand is more costly, especially in terms of initial training. For parliaments starting or planning to review their process of reporting, he advised against stenotyping and recommended considering dictation for transcription. Mr. Romano further indicated that the Chamber of Deputies of Italy managed to cut costs by removing the need for highly specialized stenographers. Tests for direct voice recognition were unsuccessful. Mr. McPherson countered that the use of stenographers has worked very well for the Senate, as it has been able to leverage processes and skills already in place and refined over time. Moreover thanks to its strong presence in shorthand schools in the country, it can benefit from hiring already specialized staff and does not incur the high cost of initial training. Due to its choice of technology, the Senate of Canada was able to service senators who are hearing-impaired as well as the general population and to maintain its human rights obligation as mandated by law. In doing so, it has increased its profile and benefited a larger portion of the population. Responding to Ms. Simone Bardot of Inter-

steno, he further presented the results of tests conducted in the Senate that showed that in a public environment similar to that in which stenographers operate, the recognition rate of voice technologies was much lower, at about 85%.

Noting that a quick analysis of the answers to the survey submitted to the Workshop participants showed that 60% of them prepare their verbatim reports from analog audio or video recordings and using normal computers with keyboards, Mr. Abreu asked the participants about eventual plans to upgrade or change their recording processes. **Mr. Ali Boulemtafes**, Head of the Systems Office in the Council of the Nation of Algeria, indicated that they use manual transcription (handwriting) from audio CDs. As speakers may also express themselves in French and local languages, the handwritten transcriptions undergo a lengthy process of revisions until the speakers, who have the final word, are satisfied. The transcriptions are then transferred to a typing pool where they are typed into a computer. He highlighted the need for ICT training of the staff. The Council is now seeking to implement automatic transcription tools which would eliminate the manual handwriting step. **Mr. Malik Bouchama**, IT Director, Council of the Nation of Algeria further explained that they are in a high priority exploratory phase and they have examined several solutions, including the ones in use in the Parliament of Italy. He expressed interest in the solution implemented by the National Assembly of Morocco, which addresses the difficult issue of transcription into the Arabic language. He noted that the Council is leaning towards transcription as the regular typing of Arabic language on computer keyboards presents even more challenges and delays. Mr. Akibate shared that

the challenges of reporting in the Arabic language are also acutely felt by the Pan-African Parliament, which moreover has to deal with several varieties of the language from different member countries.

A representative from Morocco stated that their experience dates from the year 2007, prior to which they were in the same situation as the Council of the Nation of Algeria. They had a 3-year backlog of parliamentary proceedings to transcribe verbatim. They implemented a system, similar to the one in use in Belgium, which now allows them to make the verbatim reports available on the website within one week of the sessions. The implementation of the new system was accompanied by training for transcribers and provision of career-management incentives to adapt to the new technology. **Mr. Khaled Moujahed**, Head of the Reporting Office in the Chamber of Deputies of Tunisia explained that in his Parliament the recordings are sliced in 15-minutes sketches that an assistant listens to and types on a computer. By eliminating the handwriting step, the new system leads to significant time-savings and allows the reports to be published within 3 days. Audio and video records are linked to the text of the corresponding bill.

Mr. Sergio Falcão, IT analyst in the Chamber of Deputies of Brazil, indicated that his Parliament does not yet have sufficient integration as different information systems handle the different types of information from the legislative workflow. But some integration is attempted for the end-user through the web-portal by providing corresponding links for text, audio and video records.

SESSION 3: PROCESSING AND MANAGING WRITTEN RECORDS

Mr. Paul Dunstan, Acting Director in the Directorate for the Plenary of the European Parliament, and moderator of the session, introduced himself and his work in managing the organization of the plenary sessions in the European Parliament. After presenting a brief historical perspective on the introduction of information technology in the European Parliament, he gave the floor to the first presenter.

Technologies for Reporting in the Senate of Italy

Starting the two-part presentation by the Senate of Italy, **Mr. Carlo Marchetti**, Head of the Information Systems Development Office, provided an overview of the technical choices and issues during the processing and management phases of the reporting activities in the Senate.

In 2009, there were 401 plenary sittings totaling 1,040 hours and 4,464 committee sittings totaling 4,045 hours. A verbatim report was prepared for each plenary sitting and a summary report for each committee session.

The IT Department manages approximately 2,600 users and 130 servers, with a total storage capacity of 28 Tb. A centralized database with more than 300 tables is shared by more than 500 applications.

The IT Department is led by one Director supported by 5 Heads of offices, 28 senior analysts and technicians, 5 of which are working on the reporting software, and 22 assistants. Some tasks such as helpdesk and application maintenance are selectively outsourced.

Typically, the plenary sitting report, as it appears on the website of the Senate, is composed of a summary report, a verbatim report and annexes. The summary and verbatim reports are prepared in parallel and they are published in real time on the website. The unrevised provisional version is published in XHTML during the sitting and is updated every 40 minutes. The final version is published in XHTML and PDF the same day in the evening for morning sessions and by 8am the following morning for afternoon sessions

Workflow

For reports of plenary sittings, each stenographer, in a pool of 12, stenotypes on the floor for 5 minutes, then goes back to the office where the captured text, using a Michela machine, is transcribed. Then a pool of 4 staff performs a first review of the text, after which it is published on the website. A pool of two people collates all the contributions, inserts annexes, and reviews and publishes the final version.

The process is managed by a very complex technology infrastructure involving various databases and applications. The main technologies used during the process are:

- Stenotyping, for transcribing verbatim reports:
  The system uses the Michela stenotyping keyboard along with Total Eclipse, a commercial off-the-shelf software for transcription. The acquisition cost of the technology is very high, about US$2,000 per user. Users must be trained on the use of the machine. Installation and deployment of the workstations are not easy. Maintenance and technical support are also quite costly. Moreover, the turnover of qualified people presents some challenges. The technology can nevertheless be very beneficial as it is a very reliable and time-saving speech to text tool.

- Dictation software, for dictating the summary reports:
  The dictation technology is much cheaper to deploy and maintain. It avoids some of the burden related to shorthand machines, as it can be used by regular employees without very specific and technical training. They must, however, be trained on the procedures practiced in the Senate.

- Markup editors, for tagging all reports, inserting annexes, collating and web publishing:
  The Senate has developed a complex set of MS Word-based applications which allow the stenographers and editors to markup and publish their texts autonomously. Mr. Marchetti highlighted the importance of correctly marking up annexes which come from other applications and other offices. The Reporting Office contributes to the overall process of capturing, managing and publishing parliamentary information by focusing on what is produced in the Chamber. Information produced outside the Chamber, such as the presentation of a bill, can be inserted automatically in the report, provided that the editor can interact with a centralized database. In the Senate, applications called "parliamentary registers" are used to insert information on bills or other kinds of
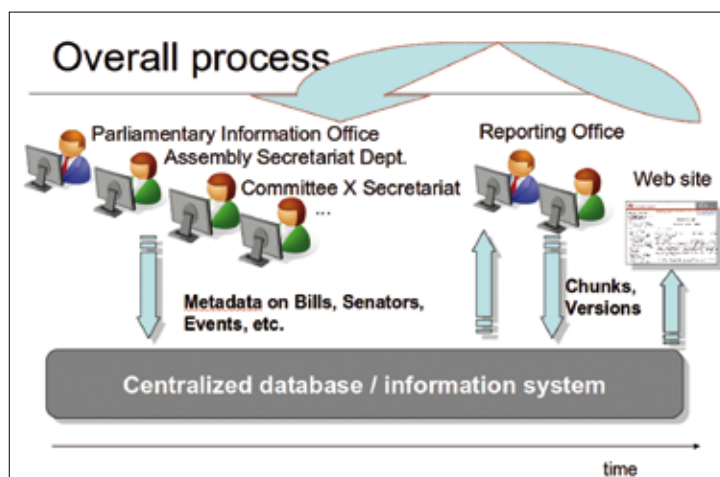
Process of reporting proceedings in the Senate of Italy

occurrences happening in the Parliament in a central repository. The metadata is then reused by reporters for tagging during drafting. In some cases, tagged information is captured and reinserted into the repository. The PDF version of the documents can be produced automatically for printing and web publishing in most cases.

The costs of building and maintaining editors are high, as they are closely linked to the procedures of the Senate, which makes it difficult to outsource their development. It is advised to invest on internal IT competencies and resources for these purposes.

• Centralized audio broadcasting, recording and reproduction system.

Other technologies such as satellite and web broadcasting, electronic voting and experimental tools such as speech to text and parroting are also used.

In concluding his presentation, Mr. Marchetti emphasized that users, reporters and stenographers, are the most important enabling technology. A good relation between the Reporting Office and the IT Department is crucial to the process of automating reporting activities. IT managers should endeavor to keep the technology as simple as possible and avoid unnecessary complexity, as technology is bound to fail regularly. They must plan contingency actions and keep in mind that upgrade and maintenance costs increase with complexity.

The process in place in the Senate of Italy is the result of years of continuing refinements and lessons-learned from failures.

Processing Parliamentary Reports in the Senate of Italy

Taking the floor for the second part of the presentation by the Senate of Italy, Mr. Fausto Ramondelli, Senior Reporter introduced the main steps in processing reports in the Senate, namely capture, revise and publish records.

Speech treatment

The parliamentary verbatim report has some particular features that make it different from other types of reports. An MP's speech is not published exactly as it is spoken. It is grammatically corrected, redundancies are addressed, repetitions are eliminated when not useful, material errors are corrected and hidden or uncertain passages are made clear. Sometimes, the reporters can reproduce in written form the tone, emphasis and intonation of the spoken words. Such treatment of the speech should not alter any essential part or its meaning, but it is necessary to make the speech more accessible to citizens and thereby enlarging opportunities for accessing the legislative activities and facilitating the comprehension of political debates. A key issue is whether such treatment should be wide and deep or marginal and light. There are different schools of thoughts among reporters, some seeking to amplify and refine MPs words while others merely want to reproduce them.

Irrespective of the approach, speech treatment requires certain competencies from reporters. Good political reporters must have a wide and deep knowledge of political themes and the main issues of parliamentary debates, be sensitive to and comprehend political communication, and be acquainted with bills on the agenda. It is essential to respect the ordinary way of speaking of the MP, to keep to a domain of words typical of the spoken language and not of the written one, to avoid uncommon or obsolete expressions and to remember that a parliamentary report is a written representation of a speech. Reporters must follow grammar rules and conventions set by the reporting service.

Nowadays, parliamentary reporting gains newer functions along with wider audiences. Reporters have to take into account the various channels through which their work can be publicized. It can be broadcast on TV or on the Internet, where it can be used as closed captions. It can also be synchronized with audio and video feeds in more advanced systems. However, the treatment of parliamentary speeches now has to be appropriate for multimedia devices. The written text has to match more than before the audio and video feeds. The sentences must not be altered in a significant manner and the reporter must limit corrections to cases where the sentence is wrong or the reader could be mislead and misunderstand the political content.

Revision

The revision phase is crucial to correct errors made in the redaction of the report. The main reason for establishing a revision staff is to ensure general control of the production of the report, mainly regarding the proceeding profiles and taking into account the whole debate. The revision process must handle collation and coordination of the various chunks of the report, error-checking and coherence with the proceedings of the sitting and other reports. Revisers must be careful not to introduce new errors or unspoken text.

The revision staff in the Senate of Italy includes 7 to 8 people. One senior reporter collates the pieces (each covering 5 minutes of transcription) of the report, checks the markups and coherence with the sitting agenda, publishes the provisional report on the website within 50 minutes after the speech, and prints the paper draft of each reporter's piece. Each of the 4 senior reporters receives the printed version of reporters' pieces, reviews and revises 40 minutes (8 pieces) of transcription against the audio recordings, and draws corrections on the printed sheets. Then 2 to 3 typists insert corrections on the text file of the report and consequently update the web pages. This double step is time-consuming and can potentially lead to new errors. The process can be improved by allowing revisers to make their corrections directly on the text files.

The revision process includes some critical activities. Although it may appear burdensome, it is necessary for the revisers to listen to the audio records as the text from the capture phase cannot always be fully trusted and often includes some avoidable errors. There is room for improvement here as well, as better quality and accuracy in the capture phase would speed up the process by eliminating the need for the revisers to listen to the recordings.

Publication

Publishing is the final step before the report is printed in a definitive version. The publishing activities encompass final checking of the text, taking into account details of the whole

debate. One official proofreads the speeches. Then one senior reporter performs a final verification of the proceedings profile (votes, correct number of articles and amendments, references to parliamentary or legislative acts, etc.). He adds cross-references with the contents of other reports and ensures coherence with parliamentary rules. He then clears the text for final printing after the time (1 hour) allocated for speakers to check the report is elapsed and the very last corrections done. Finally, he refreshes the content of the web pages. The report is then ready for printing and for publication in the Official Bulletin.

Recruitment and training

Mr. Ramondelli concluded his presentation by suggesting some guidelines for hiring and training parliamentary reporters. He stated that the intellectual content of parliamentary reports is more relevant than techniques for capturing and producing text, and for that reason, computerized machines will never be able to replace the parliamentary reporting profession, which relies upon human capabilities. Regardless of the techniques used for capturing and transcribing speeches, Mr. Ramondelli recommended that to be a good reporter involves to have knowledge of political, juridical and social affairs, be skilled in the political domain and parliamentary themes, be aware of parliamentary rules, master the differences between spoken and written communication, and be always willing to question and double-check one's level of comprehension of parliamentary speeches. Recruitment and training must privilege the knowledge competencies and should not be conditioned by the technical skills or mechanical abilities.

Discussion

Mr. Dunstan thanked the presenters and reemphasized the key points raised, such as the importance of the political content of the reports of proceedings, server sharing for a more efficient use of resources, maintenance, training and the relationship between developers and users. He then opened the floor for questions.

Mr. Mbuyisazwe Hector Tshabalala, Editor in Chief at the Language Services Section of the Parliament of South Africa, indicated that in his Parliament reporters are hired based on their level of efficiency in their mother tongue, which must be one of the 11 official languages, as well as in English. Their work must be checked against the audio recording until they have earned sufficient trust to be designated as "independent reporter".

Ms. Simone Bardot, member of Intersteno, stated that modern software tools for revision allow reviewers to save significant amounts of time thanks to their text-audio synchronization features. When in doubt, reviewers can click a word and listen immediately to the corresponding section of the audio recording.

In response to a question by **Mr. Mahesh Perera**, Director of Information Systems and Management in the Parliament of Sri Lanka, Mr. Marchetti indicated that to improve the access time of documents on the website, it is better to reduce as much as possible the level of markup in the text. For the realtime version of the reports, only the main events and the statements made by the Senators are reported. This allows the realtime version to be available and updated online within one hour. All the content and annexes

are not included, as the necessary metadata are inserted in the text much later, at the end of the workflow. The process of inserting metadata and the required reviews take a significant amount of time, which explains the delay between the publication of the last provisional version and the final version of the report. While agreeing with Mr. Perera's comment that the reporting workflow should rely on the technical infrastructure and the burden should be on the IT staff to ensure its proper functioning and implement the appropriate redundancies, Mr. Marchetti insisted on the importance of putting as much of the logic of the process as possible in client-side applications in order to be in a better position to address worst-case scenarios and benefit from advantages such as increased mobility of the staff along with their working environment. He also commented that while the skills of the reporters are very important in the capturing and revision phases of the process, the publication stage depends a lot more on the quality of the technical infrastructure and tools. So a successful reporting process depends on a good mix of human and IT resources.

Responding to **Mr. Aziz El Mouhib**, Head of Information and Communication Department in the House of Representatives of Morocco, Mr. Ramondelli clarified that the reporting workflow and rules of transcription in the Senate are determined by established procedures, and not by regulations. Mr. Dunstan added that in most parliaments, the institutional rules of procedure define what needs to be done, and it is up to the services to determine how it is done. **Mr. Guglielmo Romano**, Head of the Reporting Office at the Chamber of Deputies, indicated that in the Chamber, reporters work on the basis of a statement by the President issued in the early 1980s, which defines the types of corrections they are allowed to make.

Digital Reporting Support System (VLOS) in the House of Representatives of the Netherlands

Mr. Matthijs Bakker, Reporter in the House of Representatives of the Netherlands presented the VLOS (Digital Reporting Support System) project being implemented in the House.

The Reporting Office services the two Houses of the Dutch Parliament, the House of Representatives and the Senate. There are 150 plenary sessions and 530 meetings of committees for both Chambers every year, for which the Reporting Office produces the verbatim reports. The Reporting Office is composed of 60 staff, 50 of them being reporters. Each plenary session is covered by a team of 13 reporters working in a rotation system. Each reporter enters the meeting room and takes notes for 5 minutes, while the audio recording is digitally captured. Subsequently, and within 15 minutes, they prepare an edited verbatim transcript, comparing their notes against the recording. The verbatim report is ready within two hours of the end of the session.

The Dutch House of Representatives expects to finalize the implementation of a new computer-assisted system for capturing the proceedings and managing the production of text records by the end of 2010. The system is called

Verslag Legging Ondersteunend Systeem (VLOS), Dutch for Reporting Support System. Designed specifically for the Reporting Office, VLOS intends to further digitize the reporting workflow and reduce the amount of paperwork. In its initial phase, it will be rolled out only for the proceedings of the plenary sittings. Three reporters are part of the project team working on the implementation of VLOS. Their role is to ensure that all aspects of the reporters' daily practice are taken into account in the new system, and that its output is functionally equivalent to what the reporters have been producing traditionally.

The design of the system prompted an analysis of the entire workflow and led to a better streamlining and rationalization of the process, with a clear definition of the distinct roles and agents involved. VLOS will replace the current practice of manually taking notes in the Chamber, either in shorthand or longhand, with digital markings made on a computer in the plenary hall. In a ready-made text document automatically linked to the corresponding audio records, these markings will constitute the framework in which the reporters will subsequently transcribe the audio recordings of the proceedings. The digital output of the system allows for a quick publication in various formats.

Technical features

VLOS is a server-side software system based on Microsoft SharePoint which has been adapted to the needs of the Reporting Office. SharePoint is a collaborative platform allowing users to share documents and work together across the intranet. For each meeting, VLOS creates a workspace in which it allows different agents with different roles at various stages of the process to make their contributions to the final product. VLOS relies on standard SharePoint features for documents management. Documents can be part of reports, but also motions tabled in the House.

The digital markers captured in the plenary hall are instantly available across the network. A dispatcher allocates the 5-minutes sequences of markings to individual reporters, who can then access them from their own workstation. The reporters use a client-side custom applet in Microsoft Word to edit the document. The markings, which also include events that occurred during the session and metadata, such as the name of the MPs who are speaking, are available as text items in an automatically created MS Word document. The events, such as adjournment of the meeting, proposal or withdrawal of a motion, vote, opening or closing of a debate, etc., each have a template with predefined text in the database, which is automatically imported into the document. As some of these events have variables, such as the date of the adjournment for instance, the MS Word applet allows reporters to fill in additional information or check the option that applies in a given situation. They can access the corresponding audio recording directly from the applet. The resulting MS Word document is saved in the XML format, which allows further processing, such as the extraction of all text elements corresponding to interventions by a specific speaker for the purposes of verification.

Workflow

VLOS relies on a clear division of roles. VLOS will affect the existing process by redefining the attributions of the staff. For instance, the marker role will capture events occurring during the session on a computer on the floor. The reporter role will produce the transcription from the markings and audio recording. The dispatcher role will distribute sequences of markings to the reporters. A different authorisation level corresponds to each role; this in turn enables the corresponding features in the application and controls the level of access to content. An individual may have several roles. As a transitional mechanism preserving the rotation system, each reporter will have the three roles, marking events during the 5-minutes shift in the Chamber, dispatching the sequence to the workspace, and then transcribing the corresponding audio recording.

An additional role, the threadmaker, is responsible for populating the meeting workspace, preparing the agenda of the session, creating the text of headings for agenda items on the basis of templates, validating the formal minutes (called "the thread") of the proceedings for signature by the Secretary-General.

VLOS will automate the process, currently paper-based, of combining and sequencing separate parts of the report. An interim report, made of parts available at that moment, can be generated at any time in the process.

The process of revision of their text by Ministers and MPs, currently paper-based and burdensome, will also be automated. The use of XML tags will facilitate the integration of all contributions by one speaker into one document, which can be sent electronically to him or her with click of a button.

Benefits

Although expected, the efficiency gains from VLOS will have to be assessed in practice. The use of paper will greatly be reduced. The system will allow different types of output from the same data. For instance, it can generate verbatim reports as well as formal minutes for signature by the Secretary-General. VLOS will speed up the process of online publication by allowing realtime availability, during the meeting, of the uncorrected version of the report of proceedings. XML allows the reuse of tags for other services and types of content, such as the indexation of audio and video recordings for example.

With the significant changes that will be introduced by VLOS, the Reporting Office is undertaking an intensive training programme to familiarize the staff with the new system and alleviate the unavoidable resistance to change. It is expected that further changes either in the procedures, workflow or the application may be necessary in the future, as the Reporting Office gains more insight from the practical implementation of the system.

Discussion

Mr. Miguel Eduardo Alvarez Gálvez, Legislative Assistant in the Congress of the Republic of Guatemala, shared the negative experience of the Congress in assessing voice recognition technologies and requested advice. Mr. Ramondelli noted that voice recognition is usually more successful for orthographic languages such as Italian or Spanish. He stressed the importance of training staff to dictate in the proper way in order to get better results. Mr. Bakker indicated that in his Parliament, voice recognition is not yet used, but may be introduced in the future for reporters who would like to use it as a tool to type their

transcriptions, without changes to the existing workflow. He suggested introducing innovations in small increments, learning from and building on the previous steps for each new step. Mr. Dunstan concurred and further emphasized the importance of determining needs and assessing options at each step.

Responding to **Mr. Mohamed Sammoud**, Head of the IT Department in the Chamber of Deputies of Tunisia, Mr. Bakker clarified that VLOS relies of the different roles and access rights to control the different versions of a document. He indicated in response to **Ms. Lida Horlings**, member of Intersteno, that VLOS still allow the reporters the convenience of printing their work if they need to.

To Mr. Ramondelli, who inquired about the reasons for the length of the shifts, Mr. Bakker indicated that it had become a tradition, almost a ritual, for reporters to take notes on the floor for 5 minutes. It also allows the report to be published very quickly after the end of the session.

Mr. Perera opined that the managing phase was the most important part of the process, as it is where most value is added, and he inquired about ways to benchmark the process and add values in the managing stage. Mr. Marchetti stressed the importance of having not only a document architecture, but also a logical way of usefully representing the important events. The representation must be feasible and allow linking of text to other types of content, according to the objectives sought. Mr. Ramondelli stressed that the first step would be to free oneself from capturing techniques and privilege the technological and intellectual profiles of the reports.

Responding to **Mr. Ali Boulemtafes**, Head of the Systems Office in the Council of the Nation of Algeria, Mr. Marchetti explained that the stenographic keyboard in use in the Senate of Italy is based on the traditional Michela keyboard, but had undergone a number of modernizations and customizations which makes it hard to find it commercially. Mr. Ramondelli shared his personal experience on the ease of use of the keyboard, but he indicated that it requires an ability to be acquired and developed over time.

Responding to a question about the availability of statistical information, Mr. Marchetti and Mr. Dunstan answered positively in the case of the applications used in their respective Chambers. **Mr. Jacques Capitaine**, Head of the Hansard Office in the Senate of Belgium commented that a good empirical indicator is the number of complaints received when the system does not work.

Overview of Intersteno

Mr. Ramondelli presented the International Federation for Information Processing (Intersteno) and the Intersteno Parliamentary Reporters Section (IPRS), on behalf of Ms. Rian Schwarz van Poppel, Chair of IPRS and member of the Board on Intersteno. Since 1887, Intersteno aims to provide an international forum for information processing. Initially composed mainly of stenographers, it has been able to keep pace with the social and technological changes over time. Its interests are not linked to a specific profession or a specific technology, rather it caters to teachers, secretaries, professional, parliamentary and court reporters who can exchange ideas and experience, and compete in national and international championships. All technologies are supported. Intersteno endeavors to spread information and expertise worldwide in its domains of activities, which include reporting, text information and processing, and secretariat. Congresses and typing competitions are organized every two years. Intersteno had its previous meeting in Beijing in August 2009 and its 48th Congress is scheduled to take place on 10-15 July 2011 in Paris.

Intersteno Parliamentary Reporters Section (IPRS)

Set up in 1993 within the framework of Intersteno, IPRS aims to enable cooperation among parliamentary reporters via a professional organization in order to improve the services they provide to parliaments. IPRS has a long and deep experience in reporting techniques and transcription and is willing to support countries that aim to develop parliamentary reporting services by sharing best practices and know-how. The next IPRS meeting will take place on 1-3 October 2010 in Budapest.

Mr. Ramondelli concluded by expressing the willingness of Intersteno to cooperate with parliamentary institutions to improve their reporting activities.

Responding to Mr. Dunstan, Mr. Ramondelli and Ms. Bardot shared their insights on the rapidly growing adoption of stenographic machines and techniques in China.

Discussion

Kicking off another round of discussions, Mr. Dunstan asked presenters and participants how they define management in terms of their work procedures. **Mr. Sergio Falcão**, IT analyst in the Chamber of Deputies of Brazil, expressed the view, shared by Mr. Marchetti, that management involves planning, setting expectations, comparing them with the results and taking the appropriate actions, continually improving the process. Mr. Marchetti further brought the perspective of responsibilities and policies (organization of the process, definition of responsibilities and policies that staff must follow) in addition to technical and software project management. Mr. Dunstan stressed the importance of incorporating an evaluation component into programmes.

Mr. Zandisile Msitshana, ICT Business Support Manager in the Parliament of South Africa, shared that his Parliament, using an hybrid of LiveLink and HummingBird, has an experience similar to that of the Dutch Parliament. He emphasized the importance of change management in order to get people entrenched in their old ways of working to adapt to and adopt the technology. Computer literacy is also an issue in South Africa, as there are staff well versed in parliamentary processes who have never used computers. They have to be slowly introduced to the technology and trained, with particular attention to convincing them that technology will not replace them, but rather help them work more efficiently. Mr. Bakker concurred and explained that the decision to keep the rotation practice under the new digital support system in the House was driven by the perception of reporters that not being able to go into the plenary hall to take notes was a devaluation of their job. He sought the experience of other parliaments regarding the presence of reporters in the meeting room.

Mr. **Andrea Antonello**, Senior Administrator, Plenary Acts Unit, Directorate for the Plenary in the European Parliament, shared that for practical reasons it is not always possible for reporters to be on the floor. With 23 official languages at the European Parliament, that would mean to have 23 reporters on the floor at any given moment. Instead, one reporter sits in the meeting room for 2-3 hours and inserts into an application comments that are sent to the staff actually transcribing the text.

Mr. Tshabalala noted that the practice in the Parliament of South Africa is similar to that of the European Parliament. A logger in the chamber captures comments, interjections, as well as the language changes, so that the recorded segments are dispatched to those transcribers in charge of the specifically spoken language. Although a speakers' list including the language that each speaker will use is prepared in advance, it does happen that a single speaker uses several languages during his or her intervention, further complicating the work of the reporters. Expanding on the experience of the European Parliament, Mr. Dunstan indicated that the speakers' list, which includes language and time codes, is shared with other services such as the interpretation office and made available on an internal website accessible to the MPs who use it to determine approximately when a specific MP is expected to speak and in what language. MPs are allowed to express themselves in any of the official languages of the European Parliament, and may use more than one language during their interventions. Mr. Tshabalala expressed eagerness to further discuss and learn from the experience of the European Parliament, a request welcomed by Mr. Dunstan.

Mr. **Francisco Feio**, Coordinator of the Division of Reporting and Audiovisual System at the Assembly of the Republic of Portugal stated that although the presence of reporters on the floor is mandated by the rules of procedure, it is mostly a matter of habit, as there are ambiance microphones throughout the chamber that are sensitive enough to record everything said, including off-microphone comments, if tuned accordingly.

Noting that the availability of audiovisual recordings suppress the need for the reporter to be in the meeting room, Mr. Ramondelli cautioned against having reporters work on transcription of proceedings that they have not had the opportunity to listen to beforehand. Mr. Dunstan concurred that the context plays a very important role in the quality of the work of a reporter, and he stressed the importance of establishing a very close collaboration between the staff taking notes in the chamber and the ones transcribing away from the chamber.

Mr. Marchetti inquired about experiences in the use of XML editors and online publication of proceedings in XML. A representative from the European Parliament indicated that the documents are produced in MS Word, then converted to XML for publication on the website of the European Parliament.

In response to Mr. Perera who asked about a framework for recruiting reporters, Mr. Ramondelli restated the criteria mentioned in his presentation above and added that language proficiency may be more important for a multilingual environment, a point that Mr. Tshabalala and Mr. Dunstan agreed with. Mr. Dunstan further mentioned that civil servants hired in the European Parliament must have core graduate-level skills and often come with a first or even a second graduate degree. Proficiency in at least two languages is also required. Mr. Dunstan stressed that a certain amount of in-house training and knowledge of parliamentary procedures and legal matters are sometimes required for specific functions, making it rather impossible to hire outsiders for these duties. A significant amount of in-house training is thus required to supplement the skills acquired academically. Mr. Tshabalala further stated that the Parliament of South Africa has learned from and is attempting to emulate the model of the European Parliament in hiring graduate-level staff whose academic background is not necessarily reporting and supplement their skills through in-house training. **Mr. D'Arcy McPherson**, Managing Editor for Debates Services in the Senate of Canada, indicated that the machine shorthand skills are part of the core competencies requirements in the Senate, as well as 5 years of experience in reporting either in broadcast or for the hearing-impaired. As they tend to be uni-lingual, their multilingual skills are enhanced through in-house training.

Summarizing the discussions, Mr. Dunstan restated the importance of defining the needs in terms of management, identifying goals and products, and assessing the staffing needs, training requirements as well as the IT resources needed to achieve the objectives. He advocated for a continuing evaluation of the process in terms of reviewing the needs and the tools and introducing improvements. After thanking the presenters and the participants, he adjourned the session.

SESSION 4: PUBLISHING PLENARY AND COMMITTEE RECORDS

Ms. Cecilia Matanga, Programme Officer in the Africa i-Parliaments Action Plan, a project of the United Nations Department of Economic and Social Affairs, welcomed participants and presenters. She highlighted that the ultimate aim of the work of parliamentary reporters is to inform the citizens on the activities of the parliament in a timely manner, using appropriate formats, and through appropriate channels.

Reporting proceedings in the Chamber of Deputies of Brazil

The first presenter of the session, **Mr. Sergio Falcão**, IT analyst in the Chamber of Deputies of Brazil, provided an overview of the process and applications for recording proceedings in his Chamber. The Chamber of Deputies of Brazil counts 513 MPs. There are 22 permanent committees and some special ones of a temporary nature to discuss specific subjects. The IT Department works closely with the Department in charge of information and documentation on common projects. They have just completed an information management policy for the whole Chamber, which defines responsibilities and governance methods. For instance, the Information and Documentation Department sets the rules for archiving digital documents but the storage servers are hosted and managed by the IT Department. The IT Department is in the process of outlining requirements for handling digital documents, according to the Moreq2 model ("Model Requirements for the Management of Electronic Records") developed by the European Commission. It is expected that a commercial enterprise content management system will be acquired. There are about 7500 computers connected to the network of the Parliament, which covers the administrative areas, the political areas and the offices of the members of Parliament.

Most of the information systems are developed in-house and the majority of them went into production in the early 2000s. The Department is ready to initiate work on a new generation of applications. Among the key new requirements are integration across the various systems and making it easier to publish information.

The Chamber of Deputies is legally required to publish its proceedings as a means to ensure accountability and transparency. The specialized systems that manage capturing, processing and publication have been built over time, and include specific applications for verbatim records, audio records, TV and radio, and internet publishing.

The reporters work in shifts, each shift covered by a team composed of a shorthand writer and a proofreader who attend the meeting during the time slot assigned to them. MPs usually speak standing up, from anywhere in the plenary hall, and may use any of the 10 microphones available. There may be several speakers talking at the same time, especially during heated debates, complicating the work of the reporters.

All the information is published online and the website always has the most up-to-date information. Before the meeting, the agenda is posted on the website. During the session, the proceedings are broadcast on the website, FM radio station and cable TV station of the Chamber. The introduction of TV and radio broadcasting has increased the eagerness of MPs to speak, and they use the footage of their speeches for their political campaigns. The verbatim records are published just after the meeting. Also published are the attendance records and the voting records and results, as well as the audio and video recordings. All the information is posted on various sub-sites such as the Agenda page, the Plenary site, the Committees sites and the MPs' sites. Information can be retrieved using criteria such as the body (plenary or committee), the title of the meeting, the name of the speaker, or the date of the meeting. Integration of all the information is currently a challenge, as the Chamber has different information systems for different types of information but they have to be published in an integrated manner on the website.

Sileg – Legislative Information System

http://www.camara.gov.br/sileg/default.asp

Operational since 2001, Sileg manages the complete legislative workflow, except the parts concerning the Senate.

The workflow starts from the MP's office. Each MP has a digital signature and delivers his proposals in both digital (MS Word) and paper format. A custom application encapsulates the document with the digital signature and some metadata such as the name of the author and timestamps. The file is stored over the network in a database. According to the rules of the Chamber, the MP must be present in the plenary hall to personally deliver the signed paper version of the proposal. A parliamentary officer then compares the paper and electronic versions. If both are the same, the electronic version of the bill is immediately made available online as proposed legislation. The General Secretariat determines to which committee the proposal should be submitted. After being considered in committee, the bill is tabled in a plenary session for adoption. After the bill becomes law, the various iterations of the bill and the final law are linked online, allowing citizens to examine how the bill became law.

The official version remains the paper version and the official process is paper-based, but fully duplicated digitally. Although they have no legal value, the digital versions of the documents are the most used, internally and externally. Plans for the future include moving to an entirely paperless process, as users gain more confidence in the technology and learn to use the tools, and as the Chamber gains more experience in handling digital information in a secure manner.

The system currently stores the metadata and text of more than 50,000 documents (proposals, amendments, minutes, summaries, voting results) in MS Word, Open Office, PDF and HTML formats.

Systems Architecture

Systems for Reporting Proceedings in the Chamber of Deputies of Brazil
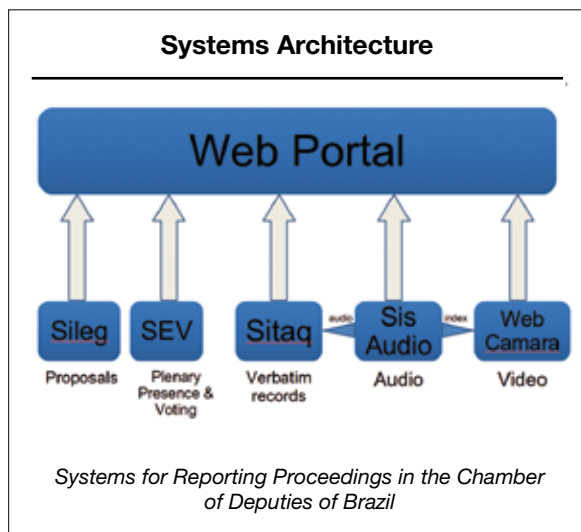
Online availability of the information in realtime is critical For committees that entirely rely on it for their work. Information on decisions and status changes in the workflow are posted as they happen.

The applications are developed using Microsoft Visual Basic 6.0. The database server is Microsoft SQL Server 2008. The database and storage servers are clustered for availability and security.

SEV – Plenary Voting and Presence

SEV automates the voting process and records attendance in the plenary sessions. The system is also used for elections within the Chamber. The system features high-level security and availability. Based on a clustered Oracle database, SEV runs on an IT infrastructure that is totally separated from the rest of the network to prevent tampering from outside. It has its own generator-based electricity system. The system relies on biometrics. MPs have to scan their fingerprint in order to vote. Everything is duplicated for redundancy, including the TV monitors. Such measures were necessary to convince the MPs of the reliability of the system.

SisAudio – Audio capture

SisAudio manages the capturing of audio recordings from plenary and committee rooms and for events in the auditoriums.

An operator indexes audio recordings with metadata such as meeting title, date and location, speaker name, state of origin, political party, title. The system automatically inserts timestamps. Every two minutes, an MP3 file of the audio recording segment is generated and posted on the website where it is searchable according to the indexed metadata. The recordings of the last four months are available online. The application has been shared with several other Portuguese-speaking countries and with the Federal Senate of Brazil.

Sitaq – Verbatim records

Sitaq (Tachygraphy Information System) is a 3rd-generation system developed in-house to manage the process of capturing the verbatim records. The system was designed in accordance with a precise set of requirements provided by the reporters, and it is highly customized to meet their needs.

Sitaq fully automatizes the various steps of the workflow, from capturing to review to management. The unrevised verbatim records of the plenary sessions are available within 30 minutes. For committee meetings, they are only produced on demand. The verbatim reports include the speeches in two versions: full texts and summaries. As the text is revised, the intermediate versions are immediately made available online, so the changes can be fully audited. The intermediate versions are deleted after 3 months. The various pieces of the full report of a session are automatically collated and formatted into a single PDF document which is made available within two hours after the end of the session as the official report of the meeting.

The system consists of a client-server architecture developed in Microsoft Visual Basic 6.0 and Microsoft SQL Server 2008. Reporters use a highly customized embedded version of Microsoft Word to edit the verbatim reports. They can use shortcuts to fetch information such as the name of the speaker directly from the database. They can play the corresponding audio records from SisAudio.

The verbatim records since 2001 are available online and searchable in full text and by metadata. The records from 1945 are available as scanned images and searchable by metadata.

WebCamara – Video Capture

The parliamentary proceedings are broadcast online using the WebCamara system, which was launched in 2009. Because of the high bandwidth requirements of video streaming, the system was outsourced. The private contractor captures the video from the internal TV cable system of the Parliament, digitizes it and stores it on its IT infrastructure. The videos are accessed through the website of the Chamber but streamed from the contractor's server transparently. Up to 22 channels can be streamed live, and the videos of the last 30 days are available on demand. After 30 days, the videos are delivered to the Chamber on hard disks and deleted from the contractor's servers. The videos are digitized by the contractor in low resolution suitable for web-viewing, but high definition recordings are also available from the internal TV cable system which produces them for broadcasting and for journalists.

The IT Department plans to implement an enterprise content management system to manage and make available all the videos.

Other Publication Channels

• XML-based web services (SIT Camara) allow other government agencies to access and import legislative information (laws, bills, MPs, committees) into their own system.

• Citizens can follow the progress of a bill by subscribing to an email alert system through which they receive a notification whenever an action (amendments, scheduled for discussion, transmitted from one committee to another, decisions, votes, etc.) is taken on a bill. They can also follow the activities of a committee or an MP. The emails link to a website where additional information is provided.

- The Chamber has a TV channel, a radio station and a newspaper which present parliamentary information in a journalistic manner, using common language more accessible to citizens than legislative language. An RSS feed publishes news about the activities of the Chamber for the benefit of newspapers, TV and radio stations throughout the country, who can make them available on their own websites.

- Plenarinho is a dedicated website for young teenagers that presents legislative information in a language and formats that appeal to them, such as games about the legislative process.

- The Chamber of Deputies maintains a presence on social networks: Twitter, Orkut, Youtube.

- Citizens can interact with MPs online to discuss proposed legislation.

LexML - Integration

Of the systems described above, only SisAudio interacts with other applications. It provides access to the audio recordings for editors preparing the verbatim reports (Sitaq) and it provides the index for the videos in WebCamara. Such integration is transparent to the end-user.

Bills and laws are posted on the LexML portal, which also collects legislative, legal and judiciary information from the Parliament and the judiciary and executive branches of government at the municipal, state and federal levels. The Courts publish the decisions they made based on the laws, the Executive branch and its General Accounting Office, which also interprets the laws, post the regulations that federal agencies must follow. LexML uses an automated program to collect metadata from various other websites and to make them available. Persistent identifiers, adapted from the Italian *Norme in Rete* Project, are used to uniquely identify content in the portal. The architecture is distributed on servers in 4 different locations, in order to ensure its scalability and availability.

Future perspectives

For its next generation systems, the Chamber of Deputies seeks to achieve greater integration of its various IT systems, extensive use of open formats, database independence to avoid reliance on a single vendor, and implementation of newer technologies such as service oriented architecture (SOA), enterprise content management, Java and XML.

The Chamber aims to implement a new legislative information system that is 100% paperless, but it expects to confront not only technical but also cultural and legal challenges, as some changes in the Rules and Procedures of the Chamber will be required. The new Sileg will be integrated with the enterprise content management system and its workflow engine will be rules-based to avoid the need for software modifications in case of changes in the procedures of the legislative process.

Also in the pipeline is a new SisAudio that will feature a customized interface allowing the application to be deployed and personalized in other parliaments, two audio channels to handle simultaneous translation, and better fault tolerance and auto recovery over the network.

Mr. Falcão concluded his presentation by showcasing screen-shots of the systems he described.

Discussion

Responding to questions by **Mr. Mahesh Perera**, Director of Information Systems and Management in the Parliament of Sri Lanka and **Mr. Gerson Haroldo Donis Gonzàlez**, Legislative Technician in the Congress of the Republic of Guatemala, Mr. Falcão explained that the IT strategic plan, which is linked to the Chamber strategic plan, has just been completed. The Chamber strategic plan follows a 4-year cycle and is developed by a Steering Committee led by the Secretary-General and composed of the 5 main administrative directors of the Chamber. The current plan (2009-2011) contains 11 strategic initiatives, one of them being to digitize the legislative process. The IT strategic plan is derived from the corporate strategic plan and interviews with key people outside the IT Department. It is approved by the direction of the Chamber. The political leadership is informed, but not involved in the process.

To **Mr. Laheen Arabi**, Head of IT at the House of Councillors of Morocco, he indicated that the IT Department of the Chamber is composed of 140 system analysts, in addition to contractors in charge of infrastructure maintenance and support.

In response to a question by **Mr. Santo Voeuk**, Director of ICT in the Senate of Cambodia, Mr. Falcão stated that the computers (mostly desktops and some laptops) on the network of the Chamber have a lifecycle of 4 years. Every year 25% of them are replaced. The Chamber takes advantage of dropping prices and increasingly better performing devices on the market. Each unit costs a little more than $1000. The Chamber is more conservative on the software side, as the entire computer infrastructure has to be renewed before the software is upgraded.

Verbatim Report of Plenary Proceedings at the European Parliament

Mr. Andrea Antonello, Senior Administrator, Plenary Acts Unit, Directorate for the Plenary in the European Parliament, presented the process for producing the verbatim reports and the minutes of proceedings in the European Parliament. Only verbatim reports of plenary sittings are produced and must be translated in all the 23 official languages of the Parliament. Given the high number of languages, interpretation and translation are major undertakings. For each language, there are 35 to 40 translators.

The two seats of the European Parliament in Brussels (host of 6 sessions) and Strasbourg (12 sessions) have a similar technical setup. Everything that happens in the plenary hall of either seat is streamed to and available with a 3 seconds delay in the Parliament's offices in Luxembourg where the transcribers and translators are located. An application called CARTON is loaded with the agenda, data about the Members of the European Parliament (nationality, language they will speak, etc.), the provisional list of speakers and the seating plan. The system is based on MEPs speaking from their own seat. An application called META is

used to tag the video recordings. And CRE is the application used to actually produce the verbatim reports.

During the plenary session, a CARTON operator and a META operator sit in booths inside the room. One reporter sits next to, and assists, the President. When the President switches on the microphone, an electronic signal, with the corresponding metadata (name of the speaker, timestamps) is sent to the CARTON operator, and then to the META application unless blocked by the CARTON operator. The entire system relies upon the President switching the microphone on and off. As it does happen that the President just leaves the microphone on, for example when having a lot of announcements to make, the reporter of the CARTON operator will have to tag the recording for each specific segment of speech that should have a different title in the minutes.

When an MEP switches on the microphone to take the floor, the CARTON operator is similarly notified, and a picture of the MEP pops up on the CARTON screen. The operator must visually verify that the metadata is correct, as it may happen that several MEPs share one microphone or that they speak from a seat which is not theirs. The operator then displays the name of the speaker on the screens in the meeting room and sends the metadata to the META application, where it shows up automatically as the name of the speaker, his/her language, function and timestamps. After the reporter verifies and validates the information in META, it is automatically sent to the CRE application that translators and secretaries use to type the text in the different languages. When a secretary for a specific language logs onto CRE, he or she checks for recordings in his or her language that are available for processing. The secretary may use a pedal to control the flow of the audio recording while typing. The video recordings and the recordings of the interpretations are also available in CRE if needed. After the secretary is done with a text, it is sent to a translator for revision. Although they can follow the proceedings via live streaming, the translators usually have a full workload translating various documents.

It is the responsibility of the reporter who sits in the Chamber to capture into META and then CRE non-verbal information such as points of order (they require a good

Transcription and revision in the European Parliament

knowledge of the rules of procedures), off-microphone comments (kept in the system but transcribed only if they lead to a response on microphone), important observations (such as the President cutting off the speaker), interjections, waving of banner, laughter, heckling, applause, etc. This allows the secretaries and translators to have a better idea of the environmental context surrounding the text they are working on.

After the text has been revised, it is sent back to the application. As soon as the Language Section validates the revised text, it is made available automatically on the Internet, usually within 3 to 4 hours.

In the CRE application, the revised texts in all the languages are indexed to identify individual speeches. That index information is used to produce and split the video recordings into individual interpreted speeches. The initial goal of the system was to replace the translation of the verbatim report, which costs lots of money, with interpreted videos of the speeches. However the MEPs decided to keep both products.

The Parliament organizes training on the use of the system every 2-3 months for new members of the Translation Unit.

Mr. Antonello described the interface through which the texts of the speeches, as they have been transcribed, are available on the website of the European Parliament. It is possible to access all the speeches delivered by a specific MEP or to restrict the list by legislative sessions. On the page of a specific speech, there are links to its translations, the corresponding audio and video recordings, the text of the original item being debated, the minutes of the corresponding debate, and the final text adopted by the Parliament.

Users can also perform a full text search to find verbatim reports, available from the year 2004. The video recordings are downloadable for single speeches as well as for entire debates.

Streaming Committee Meetings in the European Parliament

Mr. Ben Eeman and **Mr. Ronald Evers**, of the Audiovisual Unit, and **Mr. Aymeric Pannekoecke**, of the Webmaster Unit of the Directorate General for Communications of the European Parliament made a two-part presentation of a new project to stream committee meetings of the Parliament.

In the European Parliament, there are 20 standing committees, two temporary committees and two sub-committees. As most of the preparatory work and discussions for the important decisions adopted in plenary sittings take place in committees, there is growing interest for what happens in committee sessions. Moreover there is a strong drive from inside the Parliament itself to be as open and transparent as possible. From a practical standpoint, seating space is limited in committee rooms.

The project started in 2003 as an extension of the streaming of plenary sessions (since 2002 and on-demand since

2006). Its objective is to provide access to all parliamentary activities, both plenary and committee meetings, and to press conferences organized by the Parliament, in all official languages to all external users. Furthermore, video-on-demand should be made available (streaming and download) in addition to live streaming.

The project involves cooperation among several directorates of the European Parliament, each one playing a particular role in the operation of the system.

Video capture

Until 2009, the committee meetings were covered with broadcast-quality cameras installed in the rooms and operated by 5-6 technicians working in 1.5 hours shifts. The infrastructure was costly and it was not possible to cover all committee meetings, so a selection had to be made. 35 events were streamed in 2006 and 48 in 2009.

Capturing video recordings of committee proceedings in the European Parliament

With the new system, 7 high quality industrial cameras are installed in each of 18 meeting rooms in the various buildings of the Parliament. They are remotely operated by 1 to 4 audiovisual technicians who, from a central control room, can service 13 committee meetings at the same time. Now all public committee meetings and all press conferences of the European Parliament are streamed simultaneously in all 23 languages. There are between 35 and 50 streamings per committee week. 297 sessions were streamed between January and May 2010.

The cameras are unobtrusively installed in the meeting room and arranged so as to cover the entire room. Preset settings loaded in each camera determine the way in which it will film (individual framing, spare view, group view, large framing, total image or room atmosphere, total view of the podium, focus on one person on the podium, etc.). These presets, coupled with a pre-loaded scenario, allow the system to work automatically as if led by a "virtual director". The automation system is activated by microphone. The operators in the control room can refine the settings

of an individual camera during filming, or take full control of the camera remotely. Cameras are easily replaceable as the presets are stored on and pushed to the cameras from a computer.

In addition to the central control room, the cameras can also be manipulated from a technical booth inside each meeting room. Two additional incoming feeds allow videos of overflow rooms to be inserted in the stream. The technicians can also add images from a computer to the stream.

Manuals explaining how the system works were prepared for MEPs, meeting chairs and committee secretariats.

Streaming

The in-house technical infrastructure can support live streaming of up to 13 simultaneous committee meetings, each in the floor language, and interpretations in the 23 languages of the Parliament, using the Windows Media Video format. On-demand videos (also in WMV) of all the meetings are available. A decision has not yet been reached regarding the duration of the availability of on-demand videos, although it is likely that it will be aligned with the policy for the plenary sessions (two legislative mandates, for a total of 10 years).

The video streams are accessible on the website and TV channel of the European Parliament, and they can be made available on external websites if needed.

The Directorate for Communication is currently undertaking some research into the use of the 3GPP H.264 container format, which allows the use of one file with four bit rates, one of them 1.5 Mbps and the lowest 56 Kbps. It would allow the simultaneous support of digital TV, standard web streaming as well as mobile devices. More important than pure technical quality, the overarching concern is to allow access to as many people as possible and on multiple platforms.

Also explored are the possibilities to enrich the streaming and on-demand video with metadata to facilitate searching, and to add interactive video-conferencing features for participatory democracy.

Live and On-demand Videos on the website of the European Parliament

Mr. Pannekoecke presented in more detail the publication of live and on-demand videos on the website of the European Parliament.

Live Streaming

On the website of the European Parliament, current and upcoming live streamings are presented in an interface reminiscent of a TV guide. Visual clues enable permit users

to distinguish the different types of events, such as plenary and committee sittings, press conferences, briefings, etc.

On the live video page of a plenary session, users can access not only the live webcast with original floor audio, but also the interpretation in the 23 official languages of the Parliament. The video stream is provided in 3 different bit rates (different levels of quality). Metadata such as the name of the current speaker, list of upcoming speakers, current and upcoming topics, are displayed on the same screen and updated dynamically from the META application mentioned earlier, in synchronization with the video.

The live video page of a committee sitting is similar to that for plenary, with the difference that it is less metadata-rich, as committees do not have a system for capturing such metadata. Only the agenda and a general description of the session are displayed statically.

Videos are streamed in WMV and shown on the website using an embedded Windows Media Player.

On-demand Videos

On-demand videos of the plenary sessions can be searched by date, MEP (name, nationality, political group) and topic. The viewing interface for on-demand videos is similar to that of live videos as described above. Users can choose to view the video with the original floor audio or any of the interpretations in the official languages, in any of the 3 bit rates levels of quality. In addition to WMV, users have the option to view the video in MPEG-4 through an embedded Quicktime player. The same metadata (current and upcoming speakers, current and upcoming topics) are available and synchronized dynamically with the video. By clicking on the metadata, users can access the corresponding video.

A code that can be used for embedding the video being viewed into third-party web pages is provided, as well as a link for a direct download of the video. Using the metadata

from the META application, the videos (individual interventions, discussions on a topic, whole sessions) have been automatically prepared in advance for this purpose.

On-demand videos of committee sittings can be searched by date and by commission. Although they are more numerous, their search characteristics are weaker because of the lack of metadata. For that same reason, it is not possible to prepare video files for download. However, on the viewing page, a user can indicate which portion of a video he or she wishes to download. The corresponding file is prepared automatically and a download link is emailed to the user.

Statistics show a rapidly growing demand for videos of the committees, which by far already haver the highest number of views.

Discussion

Mr. Eeman clarified that for committee sessions, two programs are produced, one in which only the speaker can be seen and one generated automatically by the "virtual director". However, only one stream is recorded.

Responding to **Mr. Zandisile Msitshana**, ICT Business Support Manager in the Parliament of South Africa, he indicated that the infrastructure (cameras and optical fibre network) costs about 90,000 euros per room, without including the audio component which was already in place. Thanks to its automation and high scalability, the operating costs are very low.

Mr. Laheen Arabi, Head of IT at the House of Councillors of Morocco, shared that the House also has high quality audiovisual equipment whose operation is outsourced, but it has not yet managed to exploit the full potential of the infrastructure. Mr. Eeman explained that the operators are staff from an external contractor to which the operation of the audiovisual system is outsourced. He indicated that new terms of reference are being developed for the provision of broadcast services, including photo and multimedia.

SESSION 5: OPTIONS AND SOLUTIONS FOR CAPTURING AND REPORTING PARLIAMENTARY PROCEEDINGS IN DIFFERENT ENVIRONMENTS

The Moderator of the session, **Mr. Serge Kapto**, Programme Officer at the Global Centre for ICT and Parliament stated that the purpose of the session was to allow other countries of the Asian, African and Latin American regions to share their own experience in capturing and reporting parliamentary proceedings.

Council of the Nation of Algeria

Mr. Malik Bouchama, IT Director in the Council of the Nation of Algeria stated that the experience of the Council is very recent, as it was established only in 1998. A web site was developed in 2000. It was outsourced to a public operator, and contained just a few static pages, as there was lack of internal IT human resources at the time. Today, the Technical Department is composed of the Audiovisual Unit and the IT Unit, which work in close collaboration. The IT staff is currently composed of 5 senior IT specialists.

An IT strategic plan was developed to identify the key IT systems to be implemented. Email addresses were provided to Senators. The IT network infrastructure, which includes 300 computers and 20 servers, is connected to the Internet via an optical fiber link and a VSAT, and it is secured by firewalls. A training programme was put in place for Senators and staff. Many of the staff, legislative assistants with background in legal affairs, who had joined the parliamentary administration did not possess IT skills.

Capturing Audiovisual Recordings

Initially, an audiovisual analog recording system with a production room was set up to cover the plenary and committee sittings, as well as the various activities taking place in the Council. The recordings were stored on BETACAM and VHS tapes. Post-production, tapes were archived and given to Senators on demand.

The IT strategic plan also envisaged the implementation of a digital recording system, which is still ongoing. The system will include electronic voting and cover the plenary hall and committee rooms. Recordings are stored on DVD in addition to BETACAM. A digital archiving platform is being developed for the audiovisual library and the image library.

Transcription

Under the responsibility of the Legislative Department, transcriptions are performed manually using basic tools. An assistant listens to the recording, initially on an old-fashioned radio-cassette player and now on a DVD player, and handwrites the speeches. The handwritten text is sent to an editor who reviews it for errors and makes handwritten corrections. The transcription is a true verbatim record, a word for word account of the speech exactly as it was spoken. According to the rules, editors cannot alter any part of the speech. Arabic being the official language of the Council, words and expressions in other languages are put in brackets. The revised handwritten text is transmitted to a team of typists who enter it into a computer using Microsoft Word. The text is then collated and the verbatim report is produced as the Official Journal of Debates within a month, as mandated by the Rules of procedure of the Council. Initially the text was imported into QuarkXpress on Macintosh computers. The files could only be saved as PDF but could not be indexed for full text search. So the Council migrated to Adobe InDesign, which allows the text to be exported in searchable formats.

The Council is facing significant challenges in finding commercial tools supporting the Arabic language to automate the transcription process. In this regard, Mr. Bouchama expressed interest in the solution implemented in the Parliament of Morocco.

Publishing

In 2006, a dynamic website was developed, running on internal servers and with a back-end database. Further improvements are planned, including an enterprise content management system and online broadcasting of the plenary sessions. So far only few important plenary sessions are broadcast live on TV.

A virtual multimedia digital library (BiblioWeb) was developed in recent years. It contains about a thousand entries that are accessible and searchable online. Only the cover page, table of contents and introduction sections of the publications are digitized. A library resources management system allows users to check the availability of books and borrow them. The library also provides access to images and videos recordings of plenary and committee proceedings. Access to statute books and regulations, such as the Civil Code, the Penal Code, the Labor Code, the Commerce Code and many others, is provided for the benefit of Senators. The system is based on the Arabic version of WINISIS, an application developed by ALECSO and UNESCO. BiblioWeb is currently accessible only internally, but future plans include its integration on the website.

An intranet platform based on Microsoft SharePoint is also being developed and personalized for the Arabic language.

A document management system for legislative activities is being implemented. Plenary and committee sessions and parliamentary groups are already supported. All the documents are digitally archived using an application developed in PHP and Oracle for the Archiving Department. In the next phase, the system will be expanded to include the administrative documents.

An application to manage the legislative workflow is being considered, albeit with a lower priority since the Council does not make amendments to bills. When a bill is received from the National Assembly, it is either approved or rejected by the Council of the Nation. When approved, it is forwarded to the Constitutional Council. When rejected, it is re-considered by a Joint Commission of the Council and the Assembly. Since the creation of the Council, the Joint Commission has met only twice.

Parliament of South Africa

Mr. Mbuyisazwe Hector Tshabalala, Editor in Chief at the Language Services Section of the Parliament of South Africa, indicated that in his capacity as outgoing President of the Commonwealth Hansard Editors Association for the Africa region, he would share the lessons learned from the workshop with his peers at their next regional meeting.

The recording and transcription system in the Parliament of South Africa is digital and uses the Prism platform, a choice made after evaluating the implementations of several other parliaments. Although the application is generally functional, its licensing costs are prohibitive, given the amount of customization that must be undertaken to meet the specific need of the Parliament, and the technical support received from the vendor is not optimal. The IT Department is currently considering alternative solutions.

Within the Language Services Section, there are 3 units in charge of the preparation of the verbatim reports: the Hansard Reporting Unit, the Hansard Translating Unit and the Hansard Interpreting Unit. The Parliament does not specifically hire reporters, translators or interpreters, but rather language practitioners who are expected to be competent in at least two of these three functions and proficient in English in addition to their mother tongue.

As the MPs are speaking, their speeches are simultaneously interpreted into all 11 languages and into sign language. Two reporters sit in the plenary hall in 30-minutes intervals. Their job is to capture metadata such as the beginning and end of a speech, a change of the language spoken, etc. The recorded takes are automatically sent to the appropriate transcribers, who transcribe English and their assigned language. The transcribers are allowed to make only grammatical corrections to the text. They may also translate short sentences. Longer sequences are forwarded to the Hansard Translating Unit. When the House is not sitting, the text is also assigned to staff of the Hansard Interpreting Unit. The IT Department is developing an application to improve the management of the workflow, based on LiveLink and Hummingbird.

Due to the requirement to produce verbatim reports in the 11 official languages of the country, Mr. Tshabalala expressed great interest in the experience of the European Parliament that was shared earlier in the workshop. He also expressed interest in the experiences, shared during the Workshop, in making multilingual audiovisual recordings available online. Currently, the Parliament offers live streaming of plenary proceedings in the two Chambers and from a few committee rooms. Bandwidth limitations hinder the expansion of the service.

In the Parliament, most of the legislative work (debates, public inputs, etc.) is done at the committee level by the 54 committees. Currently, the Language Services Section, with 120 staff, does not have the capacity to provide services to all committees. However, the decision has been taken to provide such services. Starting in April 2011, 60 new interpreters will be assigned every year for the next 5 years in order to build sufficient capacity to cover all 54 committees in all 11 languages. In the meantime, it will be up to the political leadership to decide which committees are serviced.

The Parliament of South Africa does not produce verbatim reports of committee proceedings. There is some dissatisfaction with the level of quality of the current committee reports, which are prepared by staff with no reporting training or background. Mr. Tshabalala anticipates that after the interpretation services for committee sittings were assigned to his Section, so will be the production of verbatim reports of committee proceedings as well.

Daily papers, such as the Order of the Day, which are currently published only in Afrikaans and English, are in the process of being made available in all 11 official languages, further burdening the Section. Given its foreseen growth, the Language Services Section will likely be split in two independent sections, one in charge of interpretation and translation, and the other one in charge of reporting and publishing.

Regarding human resources development, the Language Services Section will organize a national workshop to discuss the formation of a national body to regulate, train, accredit and deploy language practitioners. The type of curriculum that should be required from language practitioners will be addressed, with a view to develop an academically-trained workforce that can be operational on the job faster. Mr. Tshabalala opined that IT should be part of such training.

Parliament of Sri Lanka

Mr. Mahesh Perera, Director of Information Systems and Management in the Parliament of Sri Lanka, provided an overview of the practice in the Parliament for reporting proceedings, and he touched upon the IT strategic plan.

Thanks to the implementation of ICT tools, the Parliament of Sri Lanka has made tremendous progress, cutting the time required to produce official documents from 1.5 weeks to 2 days in three years. As all documents must be produced in 3 official languages, the Parliament faces the same challenges already discussed extensively during the workshop, similar to that of other parliaments that must maintain multi-lingual capabilities.

Plenary proceedings are recorded in audio and video, and manually transcribed. The audio recordings are used to prepared verbatim reports, and the videos are use for internal broadcast.

The reporting workflow is managed by a simple and limited application, developed in-house in PHP and MySQL, in which reporters and editors upload their text and send it through the next step of the process. A team of 41 reporters use the application to prepare the transcriptions. The text is reviewed by the assistant editors, then the preview editors

and finally the editors. The final document is made available online as the official Hansard and sent to the printing office. Other official documents such as House minutes, committee minutes and reports, etc. are produced in addition to the Hansards of the plenary sessions.

There is much room for improvement, notably in terms of insertion of metadata and integration of text documents with other media formats.

An IT strategy was defined 3 years back. In the course of its implementation, almost all parliamentary staff, and a few MPs, received an IT training. Much remains to be done regarding IT training for MPs. A state-of-the art communication network, comprising 500 computers, has been deployed in the Parliament's building. Applications for managing human resources, finances and the legislative process have been developed in-house and are accessible on the intranet. A document management system is planned in order to digitize and automate current paper-based practices. The IT Department is composed of 15 staff, 3 programmers, one analyst and one designer. Given the limited human resources of the IT Department, the IT strategic plan initially mandated outsourcing applications development and maintenance. Due to lack of internal support to make it happen, the IT Department opted to initiate software development internally in order to move forward. Each application takes about 6 months to be developed. The current strategic plan, which is more focused on improving operational effectiveness, should be updated to take into account the needs of the Parliament's constituency.

Mr. Perera shared that the workshop has been an eye-opener for developing and least-developed countries. As they are rethinking their approaches on how to capture, manage and publish their parliamentary proceedings, the experiences shared and lessons learned in the course of the workshop would allow them to move towards becoming more effective e-parliaments. He recommended that following the Workshop, the Global Centre develop guidelines that not only identify best practices, but also define measurable objectives and milestones that parliaments can use in their implementation of technology-based practices for reporting proceedings.

House of Representatives of Colombia

Mr. Jesus Emilsen Pinzon Ortiz, Head of the Office for Corporate Planning and Systems in the House of Representatives of Colombia, introduced the reporting practices in the House of Representatives, which is the lower chamber of the Parliament of Colombia. Spanish is the official language of the Parliament. About 30% of the population speaks indigenous languages.

In the House of Representatives, there are 7 constitutional committees and 4 legal committees. Their functions and areas of responsibilities are defined by the law.

The Congressional TV channel broadcasts Tuesdays and Wednesdays every week, when the debates take place. The management of the channel alternates between the Senate and the House every 2 years. The Parliament also runs a Congressional FM Radio station. An internal IPTV system, to which all facilities, committee rooms and offices are connected, allows MPs to listen to what is happening in the plenary hall.

The website presents information on the activities of the House. Bills and other documents are made available in MS Word in order to make them easier to manipulate by internal users and other bodies.

The Government of Colombia has promulgated a national ICT policy and it has adopted an e-Governance Manual which is publicly available. An XML-GL (Gobierno en Linea) group has been formed, which is composed of representatives of various government bodies. The group makes available online services to facilitate access to government services by citizens. The group also performs audits of government websites in order to enforce compliance with the standards and with the guidelines in the e-Governance Manual.

Although not perfect yet, Mr. Pinzon Ortiz stated that the website of the House of Representatives fulfills most of the requirements of the e-Governance Manual as well as of the Guidelines for Parliamentary Websites.

From an administrative point of view, the Senate and the House of Representatives are independent. However, there are common services such as security for, and access to the network. The services that are shared or not shared between the two chambers are clearly defined. The House has recently upgraded the audio recording platform in the plenary hall and committee meeting rooms. It is in the process of revamping the entire technical infrastructure in the plenary hall, following the model of and learning from the Senate which has already successfully upgraded its own plenary hall. Information about the planned upgrade is publicly available on the special website where all tenders for government procurement contracts must be advertised. The upgrades aims to implement a full information management system to support all the activities taking place in the plenary hall. A biometric system will identify MPs. Each seat will be equipped with a touch screen that can be hidden from view when not in use. The project is expected to by finalized by the end of 2010.

Regarding the transcription process, a team of transcribers is provided audio CDs of the proceedings, either of plenary or committee sittings. The transcribed text is then sent to a recording team in the General Secretariat, which reviews the text and collates the final version of the report.

As of July 2010, an information system developed by a private company was put in place in the Committee of Accusations. The system allows the indexation of the audio recordings according to the list of speakers. It supports speech recognition and does not require extensive training of the voice recognition engine, facilitating the work of the transcribers.

Discussion

Mr. Sergio Falcão, IT analyst in the Chamber of Deputies of Brazil, recommended that parliaments wishing to implement a new document management system use the MOREQ, a model of requirements developed by the European Union, which provides a check-list of the character-

istics that a document management system should have. He also recommended the use of guidelines defined by the Department of Defence of the USA for content management systems.

In an exchange with **Mr. Gerson Haroldo Donis Gonzàlez**, Legislative Assistant in the Congress of the Republic of Guatemala, Mr. Pinzon Ortiz clarified that the decision came from the General Secretariat to make the texts of bills available online in a format freely editable (MS Word). However these versions are not official. After a bill becomes law, it is published online as a non-modifiable PDF document. To **Mr. Miguel Eduardo Alvarez Gálvez**, Legislative Assistant in the Congress of the Republic of Guatemala, he explained that the speech recognition system implemented in the Accusations Committee is highly secure, as the Committee deals with sensitive issues. Only authorized staff and members of the Committee can access the information stored in the system.

Mr. Agapito Alexander Rodriguez Escobar, Juridical Adviser of the Secretary General's Office in the National Congress of Honduras, raised the important issue of obsolescence of commercial products, mentioning the example of a voting system that was no longer manufactured by the time it was implemented. He also mentioned that as of 2010, all plenary debates in his Parliament are broadcast on the official Government channel, as well as live on the Congress' website, as a step to guarantee the transparency of the Congress.

Ms. Rocio Araoz Terceros, Oficial Mayor in the Chamber of Deputies of Bolivia, indicated that a new constitution has overhauled the legislative system, and thereby brought to light some shortcomings of the information management in the Parliament. In addition to Spanish, the new constitution recognizes indigenous languages, which now will have to be supported by parliamentary information systems. Currently, plenary proceedings in the Chamber of Deputies are recorded in analog audio and video. The tapes are given to the transcription service. The transcribed text, typed in MS Word, is produced within a day or two.

The Chamber faces a huge challenge concerning skilled human resources. Each new election brings new MPs and leads to 80% to 90% turnover in legislative assistant staff. Much IT capacity is lost and the Chamber has to start all over again with training new staff. She noted the lack of an IT component in the curricula of university law schools. As a result, the staff with legal background that join the parliamentary administration after the elections do not have much needed IT skills.

Ms. Araoz highlighted the importance of forums such as the Workshop for learning from the experiences of peers from other parliaments. With the support of international development cooperation agencies, the Chamber is developing and testing a system for managing the legislative workflow.

Bungeni

Ms. Cecilia Matanga, Programme Officer at the Africa i-Parliaments Action Plan, a project of the United Nations Department of Economic and Social Affairs, gave an overview of Bungeni ("Inside Parliament" in Swahili), an open source parliamentary information system that seamlessly integrates the workflow and the publishing of parliamentary work. It brings together people, processes and technology to make parliaments more open and allow for greater citizens participation.

Bungeni provides workspace for the various parliamentary users such as the MPs, Clerk, Speaker, committees, etc. allowing them to manipulate parliamentary data and items (question, bill, motion, etc.) from their creation to their archiving and through the various steps of the parliamentary workflow. Each entity that has a role to play in the parliamentary process can have a workspace in which he or she can access information and documents requiring attention and can take the appropriate action. For example, a workspace for a Minister allows him/her to be notified of and respond to oral or written questions from MPs. All the steps of the process happen within Bungeni in an integrated manner, including publishing. An approved document is automatically made available on the website of the parliament.

Bungeni is completely modularized. A transcription module is being developed that will integrate the reporting process into the whole legislative workflow managed by Bungeni.

Ms. Matanga noted that parliaments have similar processes and needs, despite the different parliamentary traditions and languages. There are huge differences when it come to financial and human resources. Big gaps often exist between needs and resources. Bungeni is a free application that can be customized by a parliament to meet its needs and that can be personalized in other languages. As it is an open source software, Ms. Matanga expressed the wish that a community of developers will form to enhance its features and share improvements with the rest of the users, following the open source development model.

Bungeni is currently being tested in several parliaments in Africa. It is available at http://www.bungeni.org/

NEXT STEPS, RECOMMENDATIONS AND CLOSING REMARKS

Mr. Gherardo Casini, Head of the UN/DESA Office in Rome and Coordinator of the Global Centre for ICT in Parliament, announced the upcoming World e-Parliament Conference 2010, scheduled for 21-22 October 2010 in Johannesburg, South Africa, and jointly hosted by the Pan-African Parliament and the Parliament of South Africa. He congratulated the representatives of both delegations for the decision to co-organize this important event.

Before opening the floor for comments, Mr. Casini gave the floor to his colleague for a brief presentation on the preliminary findings of the questionnaire of the Global Centre for ICT in Parliament, that focused on capturing and reporting parliamentary proceedings.

Preliminary Survey Results

Mr. Joao Abreu, Programme Expert for Capacity Development and Technical Assistance at the Global Centre for ICT in Parliament, presented a preliminary analysis of the responses to selected questions of a survey that was distributed to participants prior to the Workshop. The survey aims to develop an overview of the state of the art and the various technologies and processes currently in use for capturing and reporting parliamentary plenary and committee proceedings, in order to better tailor the activities of the global Centre to meet the specific needs of parliaments. The analysis was based on answers from 26 chambers to 12 selected questions. Because of time constraints, it was not possible to fully analyse the answers to all questions.

- The technologies mostly used for capturing plenary proceedings are, in decreasing order, digital video (81%), digital audio (77%) and analog audio (31%). The findings for committee proceedings show that digital audio (58%) and analog audio (46%), are more used than video (35%).

- Many chambers use storage servers (76%) for the digital audio and video recordings of their plenary proceedings. About 40% of respondents who still use DVDs, CDs, and even cassette tapes, to store recordings may need some improvements in their infrastructure and processes.

- MPEG (54%), MP3 (50%) and WMV (38%) are the most used formats to capture audio and video recordings of plenary proceedings. The findings suggest that many chambers do not yet capture either audio or video recordings of committee proceedings.

- Most chambers (80%) use computers with regular keyboards to prepare verbatim reports of plenary proceedings, a finding consistent with the number of chambers that declared using digital audio and digital video for capturing proceedings. Hand stenography is the second must used tool (23%). Findings are similar for committees.

- Of the 26 respondents, only 5 chambers declared using XML to mark up either audio, video or text recordings of plenary and committee proceedings.

- Similarly, very few chambers (35%) link the records of proceedings to the legislative actions to which they relate, a finding that suggests that many have not yet implemented integrated information systems to manage the legislative process.

- More than 60% of respondents declared publishing the verbatim reports online within 3 days of the sitting, among which 27% publish the verbatim reports within 6 hours. However, there are still chambers on the other end of the spectrum that take more than one month to publish the verbatim reports online, or that do not publish them on the web at all. The findings suggest that chambers take more time to publish the verbatim reports on paper, which can be reasonably explained by the fact that the reports are prepared in electronic format before being printed.

Next steps

Mr. Casini stated that the survey will be expanded beyond the chambers that participated in the Workshop in order to collect more data, and a more thorough analysis will be presented at the World e-Parliament Conference 2010. He indicated that the conclusions of the Workshop will be brought as well to the World e-Parliament Conference 2010, where a session will be dedicated to the issue of capturing and reporting proceedings. The Global Centre intends to continue to study the issue and facilitate the exchange of practices. But it can only operate as a broker bringing together parliaments to discuss and work on a common issue. He invited experts from parliaments to join hands with the Global Centre in developing first a logical framework for capturing proceedings, and then in identifying the various technological options that a parliament may choose from depending on its specific needs. He opened the floor for participants to state their views and suggestions.

Mr. Sergio Falcão, IT Analyst in the Chamber of Deputies of Brazil, offered to develop a first draft of a logical framework that can form the basis of further discussions among the practitioners, a proposal welcomed by Mr. Casini.

Mr. Miguel Eduardo Alvarez Gálvez, Legislative Assistant in the Congress of the Republic of Guatemala, suggested that further work and exchanges be facilitated at the regional level, as there are more similarities and therefore more opportunities to compare, share practices and learn from one another. He volunteered to contribute for the Latin American region.

Mr. Mahesh Perera, Director of Information Systems and Management in the Parliament of Sri Lanka, suggested appointing a working group, led by a senior expert, to develop guidelines for reporting parliamentary proceedings, following a process similar to what was done for the Guidelines

for Parliamentary Websites. Mr. Casini concurred with Mr. Perera's suggestion to appoint a knowledgeable person to lead a working group. He indicated however that in this case he would not call the outcome of the working group "guidelines". He welcomed the proposal of a regional approach but after the working group has concluded its work, not before.

Mr. Dick Toornstra, Director of the Office for Promotion of Parliamentary Democracy at the European Parliament, noted that for the Guidelines for Parliamentary Websites, the work started on the basis of an existing and outdated document that was then discussed and updated by the working group, taking into account the latest technological developments. He supported the proposal of Mr. Falcão to produce a basic proposal that would serve as a basis for the work of the group, helping to focus the debate into a constructive exchange of ideas.

Mr. Toornstra indicated that the Workshop constituted a positive first step in establishing a community of practitioners. Remarking the lack of representation from sub-Saharan Africa, he proposed that a subsequent workshop be organized in Africa in order to bring African practitioners on board and instil in them the sense of belonging to a community that can be helpful in the development of their reporting systems.

He suggested taking advantage of the upcoming World e-Parliament Conference 2010 to continue the exchanges and define a roadmap for future activities that may also include, in addition to the working group and the suggested regional event in Africa, another regional event in Latin America.

Mr. Casini indicated that the Global Centre would take advantage of a workshop on ICT strategic planning that it is organizing in southern Africa to introduce the work on reporting proceedings to the African community.

Mr. Francisco Feio, Coordinator of the Division of Reporting and Audiovisual System in the Assembly of the Republic of Portugal volunteered to participate in the working group on capturing and reporting proceedings. Commenting on the preliminary findings of the survey that were presented, he cautioned against the use of DVDs as storage medium for recordings of proceedings.

Mr. Fausto Ramondelli, Senior Reporter in the Senate of Italy, volunteered to join the working group and indicated that Intersteno is available to contribute as well. He suggested that some attention be accorded to the issue of capturing and transcribing parliamentary speeches, which seem to confront many developing countries.

Closing Remarks

Mr. Casini thanked the European Parliament and particularly Mr. Toornstra, Director of the Office for Promotion of Parliamentary Democracy and the Office's staff for their support in organizing, hosting, and funding participation from developing countries to the Workshop. He thanked the attendees as well for their presentations and contributions that enriched the event, and through them their parliaments that allowed their participation.

Mr. Toornstra recalled the long cooperation between the Office for Promotion of Parliamentary Democracy and the Global Centre for ICT in Parliament, which he praised for its accomplishments. He noted that in a short timespan the Global Centre had become a reference source for many parliaments worldwide, not only those in need of technical assistance, but also the more advanced parliaments who benefit from the exchange of best practices in forums such as the World e-Parliament Conferences and the workshops organized by the Global Centre.

He expressed his satisfaction in learning from the many presentations and discussions during the Workshop. He indicated that the most essential phrase he heard during the Workshop is "*The Hansard does not lie*" (pronounced by Mr. Tshabalala in Session 5), which embodies the real significance of what the capturing, processing and dissemination of debates in parliament are all about. It also echoes the message delivered during the opening session by Hon. Rainer Wieland, Vice-President of the European Parliament. Everything else derives from that concept. The technical infrastructure, human resources, and even the right mentality must be in place to capture the parliamentary debates and to ensure that the essence of what has been pronounced by MPs is not be altered, even though some technical corrections are sometimes allowed.

Mr. Toornstra noted the importance of international forums for the exchange of best practices and for helping those working in less privileged circumstances to increase their standing, and to instil in them an additional sense of pride, as their work is fundamental for parliamentary democracy.

Mr. Toornstra indicated that the European Parliament will continue its very useful cooperation with the Global Centre for ICT in Parliament with the aim of supporting parliaments to make the right choices in terms of systems, applications and hardware, and of nurturing a community of practitioners, not only for recording proceedings, but in all aspects related to ICT in parliament.

Mr. Toornstra and Mr. Casini declared the Workshop closed and wished participants a safe trip back to their countries.

ANNEXES

International Workshop

TECHNOLOGICAL OPTIONS FOR CAPTURING AND REPORTING PARLIAMENTARY PROCEEDINGS
14-16 July 2010

European Parliament
Meeting Room A1G2
Brussels, Belgium

Agenda

Wednesday, 14 July	
08:45 – 09:30	Registration and distribution of documents Altiero Spinelli Building - Place du Luxembourg Entrance
09:30 – 10:00	Opening session Hon. Rainer Wieland, MEP, Vice-President of the European Parliament Mr. Dick Toornstra, Director of the Office for Promotion of Parliamentary Democracy, European Parliament Mr. Gherardo Casini, Head, Office of the United Nations Department of Economic and Social Affairs, and Coordinator of the Global Centre for ICT in Parliament
10:00 – 13:00	**Session 1: Capturing audio and video records of parliamentary proceedings** *Moderator:* Mr. Ennio Pinton, Head of Unit, EUROPARL Webmaster, European Parliament *Presenters:* Mr. Francisco Feio, Coordinator of the Division of Reporting and Audiovisual System, Assembly of the Republic of Portugal Mr. Stéphane Gourdange, Computer Officer, Hansard Office, and Mr. Emmanuel Willems, Systems Engineer, Senate of Belgium Followed by an open discussion with focus on capturing audio and video records of plenary and committee proceedings
13:00 – 14:30	Lunch
14:30 – 17:30	**Session 2: Preparing written records** *Moderator:* Mr. Joao Viegas Abreu, Senior Officer, Global Centre for ICT in Parliament *Presenters:* Mr. D'Arcy McPherson, Managing Editor, Debates Services, Senate of Canada Mr. Guglielmo Romano, Head of the Reporting Services Office, Chamber of Deputies of Italy Followed by an open discussion focusing on the preparation of verbatim records of plenary and committee proceedings

Thursday, 15 July	

09:30 – 13:00	**Session 3: Processing and managing written records**
	Moderator:
	    Mr. Paul Dunstan, Acting Director, Directorate for the Plenary, European Parliament
	Presenters:
	    Mr. Carlo Marchetti, Head of the Information Systems Development Office, and
	    Mr. Fausto Ramondelli, Senior Reporter, Senate of Italy
	    Mr. Matthijs Bakker, Reporter, Parliamentary Reporting Office, House of Representatives, The Netherlands
	Followed by an open discussion on processing and managing the written records of plenary and committee sessions

13:00 – 14:30	Lunch break

14:30 – 17:30	**Session 4: Publishing plenary and committee records**
	Moderator:
	    Ms. Cecilia Matanga, Programme Officer, Africa i-Parliaments Action Plan, United Nations Department of Economic and Social Affairs
	Presenters:
	    Mr. Sergio Falcão, IT Analyst, Chamber of Deputies of Brazil
	    Mr. Andrea Antonello, Senior Administrator, Plenary Acts Unit, Directorate for the Plenary, European Parliament
	    Mr. Ben Eeman, Engineer Transmission, Audiovisual Unit, DGCOMM,
	    Mr. Ronald Evers, Audiovisual Unit, DGCOMM, and
	    Mr. Aymeric Pannekoecke, Webmaster Unit, DGCOMM, European Parliament
	Followed by an open discussion with focus on publishing plenary and committee proceedings

17:30 – 19:30	Reception offered by the OPPD

Friday, 16 July	

09:30 – 12:00	**Session 5: Options and solutions for capturing and reporting parliamentary proceedings in different environments**
	Moderator:
	    Mr. Serge Kapto, Programme Officer, Global Centre for ICT in Parliament
	Interventions:
	    Mr. Malik Bouchama, IT Director, Council of the Nation of Algeria
	    Mr. Jesus Emilsen Pinzon Ortiz, Head of the Office for Corporate Planning and Systems, House of Representatives of Colombia
	    Mr. Mbuyisazwe Hector Tshabalala, Editor in Chief, Language Services Section, Parliament of South Africa
	    Mr. Mahesh Perera, Director of IT, Parliament of Sri Lanka
	    Ms. Cecilia Matanga, Programme Officer, Africa i-Parliaments Action Plan, United Nations Department of Economic and Social Affairs
	Open discussion

12:00 – 13:00	**Next steps, recommendations and closing remarks**
	    Mr. Gherardo Casini, Head, Office of the United Nations Department of Economic and Social Affairs, and Coordinator of the Global Centre for ICT in Parliament
	    Mr. Dick Toornstra, Director, Office for Promotion of Parliamentary Democracy, European Parliament

List of participants

International Workshop

TECHNOLOGICAL OPTIONS FOR CAPTURING AND REPORTING PARLIAMENTARY PROCEEDINGS

14-16 July 2010

European Parliament
Meeting Room A1G2
Brussels, Belgium

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