Chapter 8
The State of e-Parliament in 2010

In 2007 the survey launched by the Global Centre for ICT in Parliament assessed for the first time the state of e-parliament in the world's legislatures. Based on the survey results, the *World e-Parliament Report 2008* identified three levels of adoption of technology. At the high end some legislatures were very successful in their use of ICT to support their goals. They had developed systems and were using open standards for managing most of their critical documents, had websites that presented current activities of the parliament in multiple formats, including real time video, and were creating archives of this information. They were building a wide ranging policy and legislative knowledge base available to members and the public. Legislators had computers in their offices and a laptop that provided remote access to parliament and its information. Many were exploring new ICT-based methods for communicating with citizens and for engaging them in constructive discussions of policy options. However, the survey estimated that less than 10% of respondents fell into this category, and these parliaments were all from either the high or upper middle income groups.

At the lower end, at least 10% of chambers were so constrained by resources that they could not provide even the most basic ICT services. And, based on responses to a variety of survey questions, the percentage of those that were unable to provide basic ICT services could have been as high as 30%. On the positive side, many of these parliaments had developed plans for building their ICT capacities to enhance the effectiveness of their operations. Some had established strategies that could be implemented as the resources became available.

In the middle were parliaments whose ICT systems and services would have to be described as uneven at best. Many of them had implemented ICT applications that served some of their most important functions. But many of these applications appeared to be operating at the lowest level of utility and had not been enhanced in a way that took advantage of technology to improve efficiency and effectiveness, or offered additional services. They had, for example, developed websites that had the text of bills, but did not have information about committee activities or links to related information or documents. Committees may have had websites, but they lacked standards for what should appear on the site or be retained. Many of these websites still needed a search engine for finding bills and related documents. In effect, many of these chambers had introduced some of the important ICT tools but their implementation was limited to the most essential services.

Overall the 2008 analysis made evident that there was a substantial gap in most parliaments between what is possible with ICT to support the values and goals of parliaments and what had been accomplished. This gap was especially pronounced among legislatures from countries with lower income levels.

For the 2010 analysis, this Report is proposing a statistical methodology for assessing ICT in legislatures that results in a more detailed description of their e-parliament status. The methodology assigns a numeric score to each of the six areas included in the 2009 survey: 1) Oversight and management of ICT; 2) Infrastructure, services, applications and training; 3) Systems and standards for creating legislative documents and information; 4) Library and research services; 5) Parliamentary websites; and, 6) Communication between citizens and parliament. These numeric values are added together to provide an overall score that reflects the current state of e-parliament world-wide, according to the 134 responses to the survey. The same methodology could be applied by individual parliaments to enable them to determine their relative strengths and weaknesses.

The e-parliament elements included in the methodology reflect the most important aspects identified and described by parliamentary leaders, officials, members and experts in presentations at the three World e-Parliament Conferences in 2007, 2008 and 2009. They also take into account the results of the 2007 and 2009 surveys and the findings of independent studies and research carried out on this subject.

Scores resulting from the methodology were derived from responses to selected survey questions linked to each of the six ICT areas. Some questions were excluded because they were informative but did not lend themselves to a comparative assessment. Others were deemed not as relevant as the questions included, or were judged to be insufficiently accurate or valid to warrant being part of the methodology at this time. A total of 44 of the 138 questions were used to calculate the scores, with many of them containing multiple parts.

While the methodology serves as a useful tool for looking at the state of ICT adoption in parliaments, it also has certain limitations that must be acknowledged. It is based on answers provided by each parliament, which have not been independently verified. This type of self-assessment is a valid approach, especially when the goal is to seek improvement, but the completeness and accuracy of the answers are dependent on the individuals that filled out the questionnaire. Also, not all questions apply to all parliaments because of differences in their authorities, environment and circumstances. While the methodology has tried to take this into account, it is very important to emphasize that variations among parliaments may affect any assessments that are made.

Conducting this type of assessment provides an indication of the overall state of ICT adoption in parliaments. It can be applied across the global community of legislatures, within regions, and to individual parliaments. However, it must be stressed that the methodology has not been developed with the purpose of ranking parliaments individually. Rather it is intended to assess whether legislatures have applied technologies effectively in all six domains, to identify strengths and weaknesses and to highlight where improvements can be made. Finally, the methodology establishes a baseline for measuring progress over time. A detailed explanation of the methodology is contained in Annex 1.

RESULTS AND FINDINGS

E-parliament at the global level

Figure 8.1 presents the global scores for each of the six areas used in the survey. "Infrastructure, services, applications, and training" has the highest score (66%) among the six.[1] It is clear from this finding that many parliaments are making progress in implementing some of the major components of an adequate technical environment, and providing the necessary related services. Although building and maintaining a robust and responsive infrastructure may initially be costly, this can be easier to accomplish than developing complex systems that require specialized skills and changes in work patterns and practices, such as a document management system based on XML, which generally takes longer. Infrastructure, applications and services also benefits from being the most visible and often the most immediately useful component of e-parliament. An additional and positive reason that this area has scored the highest is that many parliaments are providing training programmes for ICT staff and for members.

"Oversight and management of ICT" has the second highest average score (51.3%). This is a positive finding because good planning and management is a prerequisite for the effective use of the resources required to implement technology efficiently. Nevertheless, the score represents only half of the maximum value, suggesting that there is considerable room for improvement in this area. In particular, this score indicates that there are still not enough parliaments whose senior leadership is engaged in ICT issues, and that many do not have written vision statements and regularly updated strategic plans. Despite the fact that these are sound management practices generally utilized in other organizations, many parliaments have been slow to employ them in both developing and developed countries.

"Communication between citizens and parliament" has the lowest score (27.5%). Given the challenges described in Chapter 2 that parliaments, committees, and members face in using advanced ICT-supported methods of communication, this is an understandable finding. Other reasons that may be contributing to this lower score include the fact that some of these communications technologies have emerged relatively recently, the lack of knowledge about which of the new media are the most useful for interacting with citizens, and the institutional or procedural constraints to be overcome for their implementation. What is particularly promising in this area is the large percentage of parliaments that are using interactive technologies to communicate with young people.

The scores for the three remaining areas cluster together: "Document systems and standards" (46.0%); "Parliamentary websites" (45.0%); and "Library and research services" (42.7%). These scores fall below 50% of the possible highest score and reflect the concerns noted in earlier chapters. Not enough parliaments have a document management system for proposed legislation and too few have adopted XML for any type of documents. While nearly all parliaments have a website, the score indicates the difficulty in building a successful one that meets most of the recommendations contained in the IPU *Guidelines for Parliamentary Websites*.[2] Gaps are particularly serious in legislative, oversight, and budgetary information and in the implementation of standards for persons with disabilities. The relatively low score for libraries and research services is an indication of lack of support for this vital resource. This is a major limitation because parliamentary library and research services are the primary sources for objective and non partisan information and analysis, and a key means for ensuring the independence and effectiveness of the legislature.

1 Scores are presented as a percentage of the total points obtained divided by the maximum points possible for each of the six areas. Total score is based on the weighted average of the six areas.

2 Inter-Parliamentary Union, *Guidelines for Parliamentary Websites*, [Geneva]: Inter-Parliamentary Union, 2009 [http://www.ictparliament.org/resources/guidelines_en.pdf].

Figure 8.1: Global scores in each area for all parliaments[3]

Areas	Maximum Points	Average Points	Score* (Max=100)
Oversight and management of ICT	15	7.7	51.3%
Infrastructure, services, applications and training	15	9.9	66.0%
Document systems and standards	15	6.9	46.0%
Library and research services	15	6.4	42.7%
Parliamentary websites	20	9.0	45.0%
Communication between citizens and parliament	20	5.5	27.5%
Total	100	45.4	45.4%

(The score is calculated by dividing the Average Points attained by all parliaments by the maximum number of points possible)

Levels of ICT adoption

The methodology used to analyze the 2009 survey results affords a reasonably precise description of the levels of ICT adoption. Because of the differences in some of the questions in the two surveys, it is not possible to do an exact comparison between 2007 and 2009 results. It is feasible, however, to obtain an accurate picture of the parliaments using ICT successfully today, and the most important challenges that confront the parliaments whose scores indicate a very low level of adoption.

The overall score, which combines all six areas, can be used to determine which parliaments are at the highest level of ICT adoption and to describe their characteristics. Similarly, scores at the lowest level indicate those parliaments that do not have adequate ICT systems and services in place to provide the most basic support. It is important to note that there is not a specific score that marks a particular level; there is instead a continuum along which all parliaments are arrayed. The greater specificity of the scoring criteria, however, facilitates a fuller understanding of strengths and weaknesses at the global, regional, and national levels.

The total scores describing the management and adoption of ICT by individual parliaments around the world, range from 13.5% to 82.7% (of a maximum score of 100%). Of all parliaments participating in the survey, only 20% achieved a total score represented by at least two thirds of the maximum possible score (66 over 100), and consistently reached the upper or high scores in all six areas.

Based on this analysis, it can be concluded that those at the high end are more likely to possess a combination of elements that satisfy the various technology needs of a legislature: a sound management organization, a solid yet flexible infrastructure, systems for managing all parliamentary documents, library and research services well supported by technology and applications, a website offering a great deal of timely and complete information with multiple channels to access it, and a variety of methods for engaging with citizens through traditional communication means as well as new and more interactive media.

Those at the lowest level of adoption do not have an appropriate management structure in place, although a surprising number do better than expected in this area. They lack an adequate infrastructure (some do not have reliable electrical power), often have no systems for managing documents, have very weak libraries, and have websites with the least amount of information (a

3 Library score adjusted for those who use sources outside the parliament for this service.

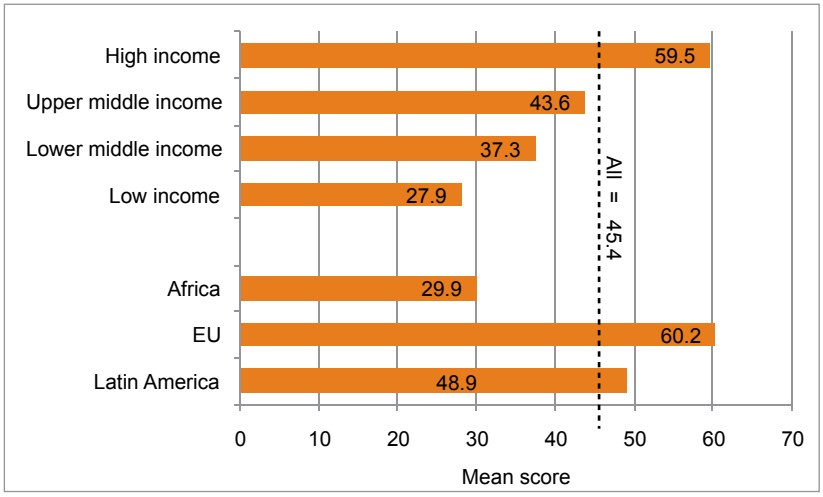
few do not have websites at all). Many have no capabilities for using ICT-supported methods to communicate with citizens.

Those in the middle vary in their strengths and weaknesses. While they sometimes have good scores in one or two areas, they have usually not achieved a high level of adoption in most categories. There is a continued unevenness in implementation similar to what was first observed in the *World e-Parliament Report 2008*. For example, just as many parliaments score above average as below average in infrastructure and document management systems. Also, while a few score higher than average for libraries, websites and communication, twice as many score below average in these three areas.

Levels of ICT adoption by income groups

Figure 8.2 shows the total score by income groups and by selected regions. As in 2008, there were sufficient responses to the survey to allow analysis of three regions[4] – Africa, Latin America, and the European Union. The general pattern shown in Figure 8.2 is consistent with other findings in this Report: the income level of a country often has a strong relationship to the level of adoption of ICT in parliament.

Figure 8.2: Average total e-parliament score by income groups and by region[5]



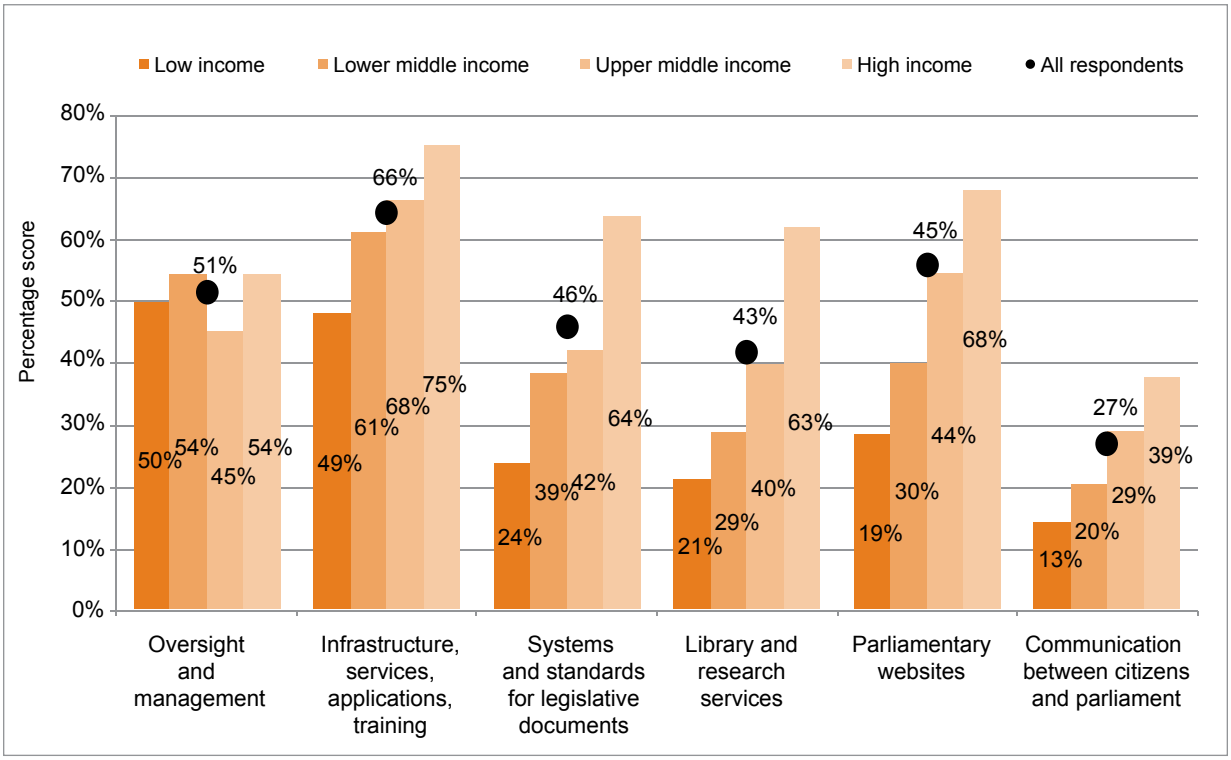
It is interesting to note that the legislatures in Latin America achieve a total score that is above the average total score for all parliaments and the mean score of the upper middle income group, suggesting an encouraging path of e-parliament development in the region.

Parliaments in the African continent are among those most affected by income level in their ICT deployment and will possibly need various forms of assistance – such as skills development, knowledge transfer, and financial support – to make progress in the next years.

4 See Annex 2.
5 There is a slight difference in the overall score in Figure 8.1 (45.4) and this figure (45.2) due to rounding.

Figure 8.3, which shows the scores for each area by income groups, indicates that this general pattern varies among areas of ICT. For example, the extent of the differences in "Oversight and management of ICT" and "Infrastructure, services, applications, and training" is much less between parliaments in the low and high income groups than the differences in other areas. This is similar to the findings noted above that suggest that ICT management and infrastructure are areas in which legislatures in developing countries are doing comparatively better than in other areas.

Figure 8.3: Average scores for each area of e-parliament by income groups[6]



It is particularly interesting to note that the size of the difference between parliaments in the high income group and parliaments in all other income groups is very large for document management systems, libraries, and websites, suggesting a substantial gap in these three domains. This difference is further reflected in the fact that the absolute difference in total scores between each group and its neighbors in the next highest income level is largest for those from the high income group (see Figure 8.2). That is, the gap in performance between those in the high income group and those in the upper middle income group is substantially greater than the gap between those in the upper middle income group compared to those in the lower middle income group, and those in the lower middle income group compared to those in the lower income group. This indicates that parliaments in the high income group are operating at a more advanced ICT level in both absolute and relative terms. Whether this gap continues to widen or narrow will be an issue for future surveys and analyses, as there is still room for improvement even in the high income group, as shown in Figure 8.4.

6 The scores in Figure 8.3 are calculated by dividing the average number of points for each area by the maximum number of points possible for each area. See Figure 8.1.

Figure 8.4: Difference in each area between maximum points and average points for parliaments in the high income group[7]

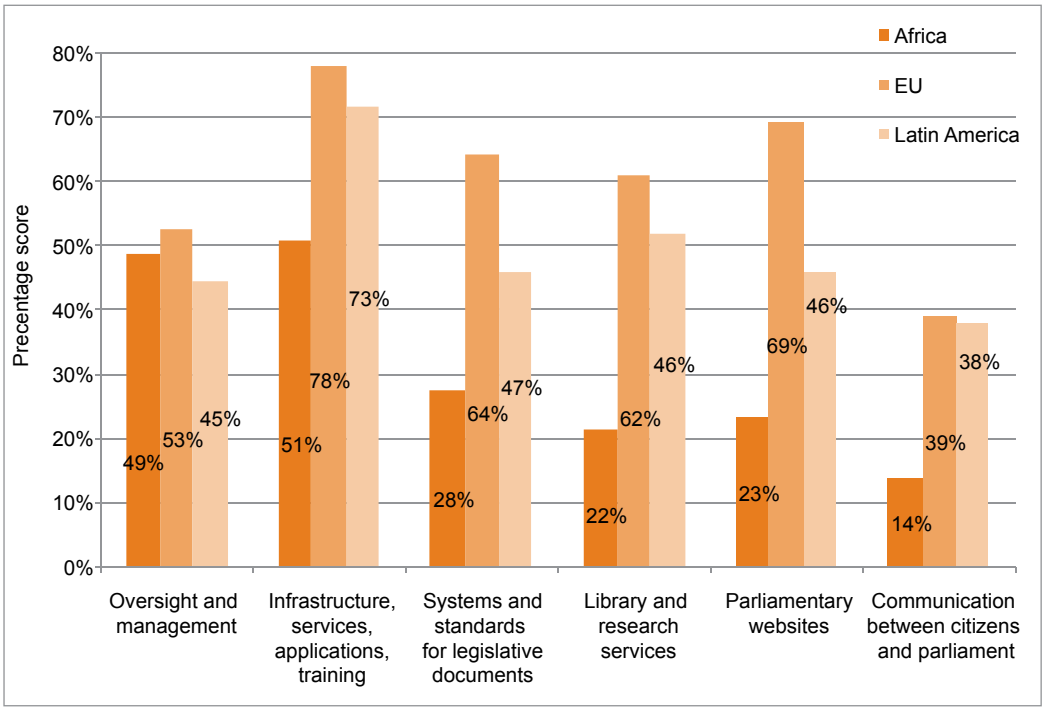
Areas	Maximum Points	Average Points	Diff.
Oversight and management of ICT	15	8.1	-6.9
Infrastructure, services, applications and training	15	11.2	-3.8
Document systems and standards	15	9.6	-5.4
Library and research services	15	9.4	-5.6
Parliamentary websites	20	13.5	-6.5
Communication between citizens and parliament	20	7.7	-12.3
Total	100	59.5	-40.5

Levels of ICT adoption by selected regions

Figure 8.5 shows the average scores for each ICT area for the selected regions. The findings suggest that these regions are fairly comparable in "Oversight and management of ICT" and that parliaments in the European Union are well advanced in the development of their websites.

Interestingly, parliaments in Latin America do almost as well as those in the European Union in three areas: "Infrastructure, services, applications and training", "Library and research services", and "Communication between citizens and parliament". This suggests, among other things, that south-south cooperation could potentially be as useful as north-south, particularly in "Communication between citizens and parliament" where nearly all legislatures are progressing slowly but deliberately. There may also be important cultural differences that need to be taken into account when considering the experiences of other parliaments in each of these areas.

Figure 8.5: Average points for each area of e-parliament by selected regions



7 Library score adjusted for those parliaments that use outside sources for this service.

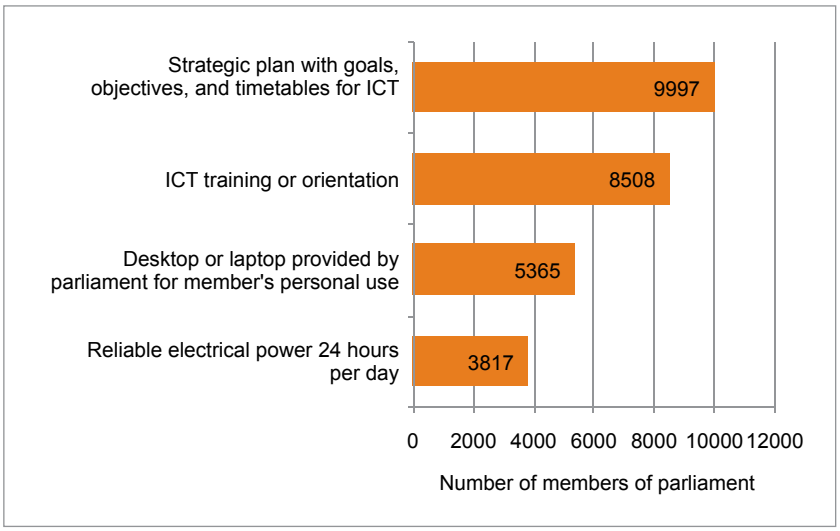
The impact on members of parliaments

An alternative way of looking at levels of e-parliament is to examine the relationship between the adoption of technology and its impact on legislators. Figures 8.6, 8.7, 8.8, and 8.9 provide some indications of how the current world-wide state of e-parliament affects members individually. [8]

Of the 27,249 parliamentarians represented in the legislatures that responded to the survey:

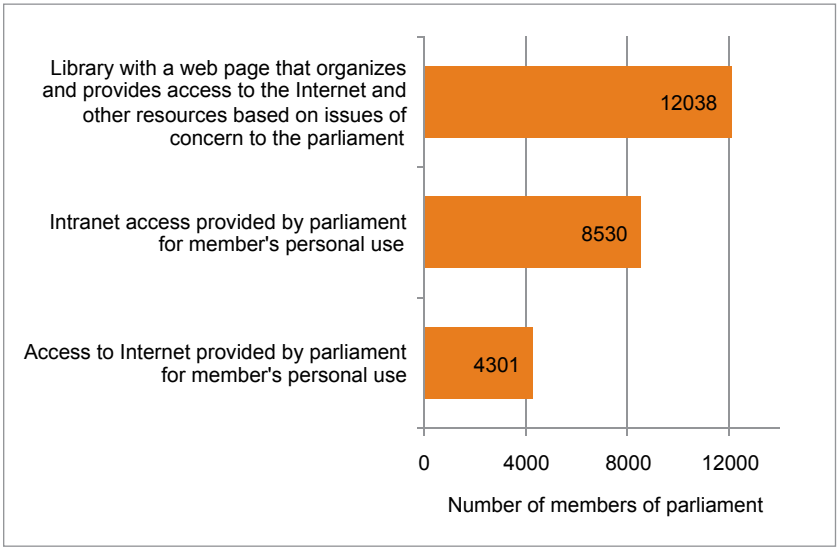
- 3,817 (14 %) cannot count on reliable electrical power in the parliament.
- 5,365 (20%) do not have a personal desktop or laptop computer at their disposal.
- 8,508 (31%) are not offered any type of ICT training or orientation programmes by their parliament.
- 9,997 (37%) work in legislatures that have not yet devised a strategic plan for ICT.

Figure 8.6: Number of members in parliaments that lack the items listed, in the areas of infrastructure and management



These represent serious infrastructure and managerial obstacles that are preventing members of parliament from using technologies to the benefit of their daily work (see Figure 8.6).

Figure 8.7: Number of members in parliaments that lack the items listed, in the areas of access to information and research



As shown in Figure 8.7, other obstacles influencing the ability of members to search for information and make informed decisions have the following impact on legislators:

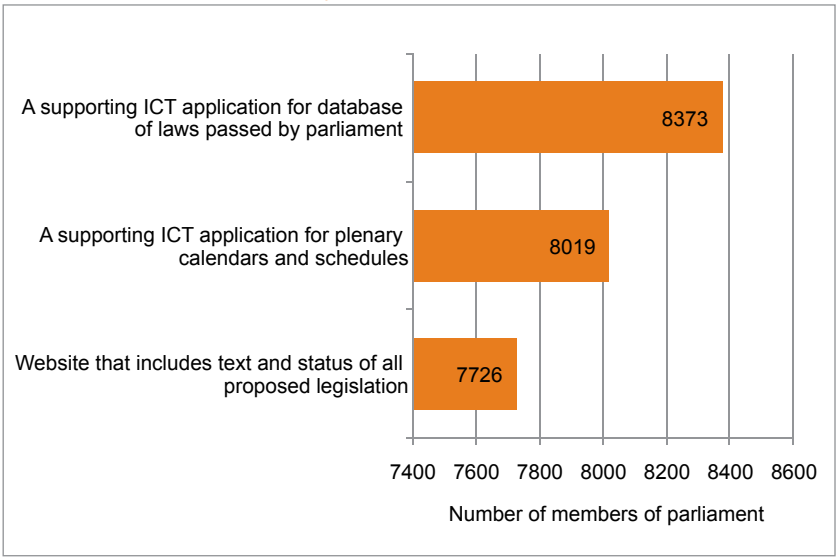
- 4,301 (16%) do not have personal access to the Internet in the parliament.
- 8,530 (31%) are not provided with personal access to the parliament's intranet.
- 12,038 (44%) do not have access to a library website that organizes information on issues of concern to members.

8 The data provided in these Figures was obtained by crossreferencing selected questions from the survey and the total number of seats of the chambers that responded to it.

Figure 8.8 highlights how the lack of ICT applications can create additional barriers by making it more difficult for members to have easy access to key parliamentary information:

- 7,726 (28%) cannot access the text and current status of proposed legislation on their parliament's websites.
- 8,019 (29%) cannot access the plenary calendars and schedules on-line, either through an intranet or the Internet.
- 8,373 (31%) cannot access a database with the laws passed by the parliament.

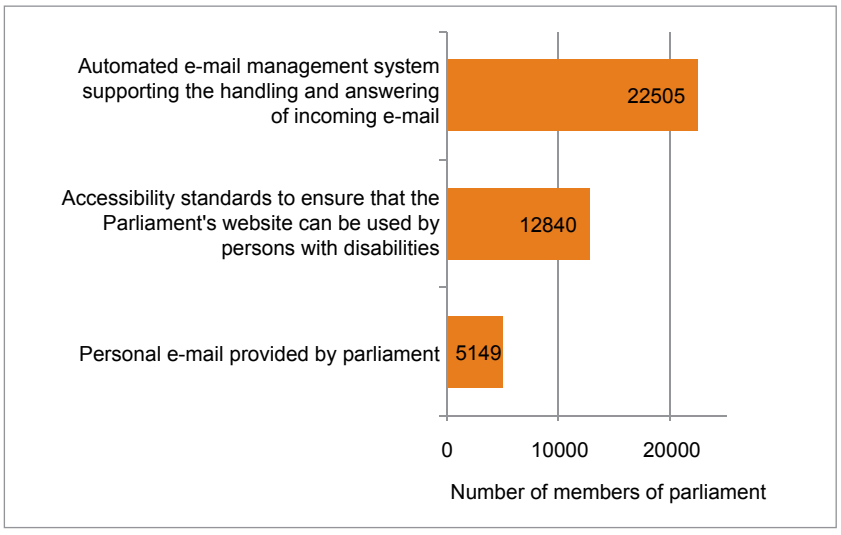
Figure 8.8: Number of members in parliaments that lack the items listed, in the area of access to parliamentary documents



Lastly, Figure 8.9 shows how the lack of software and systems is affecting the possibility of members to be in contact with their constituencies:

- 5,149 (19%) are not yet provided with personal e-mail accounts by their parliament.
- 12,840 (47%) serve in parliaments that have not implemented accessibility standards for persons with disabilities on their websites, disallowing these citizens to follow members' and parliament's work.
- 22,505 (83%) are in parliaments that do not provide a system for managing and supporting the answering of incoming e-mail.

Figure 8.9: Number of members in parliaments that lack the items listed, in the area of communication with citizens



ICT and the values of parliamentary democracy

As repeatedly stated in this Report, technology is not an end in itself but one of the means for supporting the work of legislative bodies throughout the world. While in today's world many legislatures have acknowledged the role of ICT in assisting parliament's most important responsibilities - representation, lawmaking and scrutiny - the link between technology adoption and parliamentary democratic values may be less evident.

An informative and useful step for parliaments is to associate the results of the survey and the scoring methodology to the framework describing the parliamentary contribution to democracy defined by the Inter-Parliamentary Union.[9] This framework, discussed extensively in the *World e-Parliament Report 2008* and recalled in Chapter 1 of this Report, identifies a number of important parliamentary objectives and values. These include transparency, accessibility, accountability, and effectiveness. The definition of e-parliament used by this report reflects these values and expands on them to take into account the impact of technology:

> "An e-parliament is a legislature that is empowered to be more **open, transparent** and **accountable** through ICT. It also empowers people, in all their diversity, to be more **engaged** in public life by providing **higher quality information** and **greater access** to documents and activities of the legislative body. An e-parliament is an **efficient organization** where stakeholders use information and communication technologies to **perform their primary functions** of lawmaking, representation, and oversight **more effectively.** Through the application of modern technology and standards and the adoption of supportive policies, an e-parliament fosters the development of an equitable and inclusive information society."

The six areas of technology assessed through the scoring criteria are closely tied to the values of parliamentary democracy. Based on the discussion and findings in Chapter 3, for example, the score for parliamentary websites has a natural and close relationship to the value of transparency. This encompasses both the documents that parliaments provide to the public and the tools available to citizens to find and access them. The scoring criteria for "Parliamentary websites" contained questions regarding legislative, budget, and oversight information and documents; tools for searching them; and standards for ensuring that websites are accessible to persons with disabilities. Making the text of proposed legislation available is clearly related to transparency, as is publishing the speeches and debate in plenary on a timely basis.

Accessibility in the IPU framework refers to involving the public, including the associations and movements of civil society, in the work of parliament. The scoring criteria for "Communication between citizens and parliament" include survey questions on the various ways that parliaments, committees, and members engage with citizens, as well as methods available to citizens to be involved with the legislature. Although many of the communication methods surveyed are uni-directional – that is from the parliament or its members to the public – a number of them included in the criteria are more interactive and the scores for this area reflect their use.

The IPU framework describes accountability as members of parliament being responsible to the electorate for their performance in office and the integrity of their conduct. The definition of e-parliament includes the institution itself as well as the members. Some of the questions related to transparency are also related to, and overlap with accountability. These questions, most of which are in the section of the survey dealing with websites, cover three areas: a) the roles, responsi-

9 Inter-Parliamentary Union, *Parliament and Democracy in the Twenty-First Century: A Guide to Good Practice,* Geneva: Inter-Parliamentary Union, 2006.

bilities, and organization of parliament, its committees, and its members, thereby defining what parliaments and members should be accountable for; b) the leaders and the members and the constituencies they represent, thereby identifying who should be accountable; and, c) the actions of the parliament and its members in the current and previous years, which provide the basis for judging accountability.

Effectiveness can be assessed at the local, national, and international level in the IPU framework. At all three levels it refers to the effective organization of business in accordance with democratic norms and values. The e-parliament definition expands this to include efficiency. These two values of efficiency and effectiveness are reflected in the ranking criteria that relate to a) oversight and management of ICT; b) document systems and standards; c) libraries and research services; and, d) infrastructure, applications, services and training. Taken together, these areas enable parliaments to be more efficient in their operations, for example by producing and disseminating documents more quickly, and more effective in fulfilling their responsibilities, for example through the ability to access independent sources of information and analysis when considering policy issues and proposed legislation.

A summary of these values and the findings from the survey that relate to them most directly are shown in Box 8.1. Although these findings do not fully reflect all facets of transparency, accessibility and effectiveness, they do demonstrate the contribution that technology can provide to achieving higher standards in these four areas. The survey results therefore provide some indication of the extent to which parliaments have used technology in support of these values, but can not be interpreted as an indicator of their attainment in absolute terms for the simple reason that ICT represents only one of the means for parliament to achieve these objectives.

By presenting this analysis the intention of this document is to raise awareness among parliamentary leaders, members, and staff about the nexus between ICT adoption and transparency, accountability, accessibility, and effectiveness, which could play an important role at the time of envisioning, planning and managing ICT in the parliamentary context. As more parliaments are able to provide voting records to the public, enhance their websites by adhering to standards for persons with disabilities, and connect their libraries to local area networks, their accountability, transparency, accessibility and efficiency will also improve. Tracked over time, the survey questions can also provide an indication of progress of ICT adoption according to these values.

Box 8.1: Survey findings relevant to values and objectives

Transparency: *being open to the nation through different media, and transparent in the conduct of its business*

Relevant findings from the survey questions relating to this objective:

- *Information available on websites, including:*
  - Documents and information about actions
  - Quality of information
  - Explanations of information
- *Tools for finding, receiving, and viewing information*
- *Standards of accessibility (for persons with disabilities)*

Accessibility: *involving the public, including the associations and movements of civil society, in the work of parliament*

Relevant findings from the survey questions relating to this objective:

- *Communication methods and channels*
- *Interactive tools*

Accountability: *members of parliament being accountable to the electorate for their performance in office and integrity of conduct*

Relevant findings from the survey questions relating to this objective:

- *Roles, responsibilities, and organization of parliament, its committees, and its members*
- *Leaders, members and the constituencies they represent*
- *Actions of the parliament and its members in the current and previous years*

Efficiency and effectiveness: *the organization of business is done in accordance with these democratic values, and the performance of parliament's legislative and oversight functions in a manner that serves the needs of the whole population.*

Relevant findings from the survey questions relating to this objective:

- *Envisioning, planning, and managing*
- *Document systems and standards*
- *Libraries and research services*
- *Infrastructure*

SUMMARY

For its 2010 analysis the Global Centre for ICT in Parliament developed a statistical methodology for assessing the state of ICT in legislatures. The methodology assigns a numeric score to each of the six areas included in the 2009 survey and then calculates an overall score that reflects the current state of e-parliament world-wide. Scores are given as a percentage of 100, which reflects the highest score possible for each area and also for the total.

Among the six categories, infrastructure receives the highest score (66%). It is clear from this finding that many parliaments are achieving some success in implementing a robust and responsive ICT infrastructure. Building an infrastructure may be initially costly, but it is often a critical first step before undertaking more complex applications. The high score for infrastructure also reflects the fact that more parliaments are providing training programmes for ICT staff and for members.

Oversight and management of ICT has the second highest average score (51.3%). This is a positive finding but it still reaches only 50% of the mark, suggesting that there is considerable room for improvement. In particular, this score indicates that there are still not enough parliaments whose senior leadership is engaged in ICT issues, and that have written vision statements and regularly updated strategic plans.

The scores for the three remaining areas are at about the same level: document management systems and standards (46%); parliamentary websites (45%); and libraries and research services (42.7%). These scores are all less than 50% of the maximum possible and reflect the fact that not enough parliaments have key capabilities, such as a document management system for proposed legislation, XML for any type of documents, and a successful website that meets most of the IPU recommended guidelines. The relatively low score for libraries and research services is an indication of lack of support for this vital resource.

Communication between citizens and parliament has the lowest score (27.5%). There are a number of challenges that parliaments, committees, and members face in using new and advanced ICT-supported methods of communication, including the lack of knowledge about which of the new media are the most useful. It is promising that a large percentage of parliaments are using interactive technologies to communicate with young people.

This methodology makes it possible to determine which parliaments are at the highest and lowest levels of e-parliament and to describe their characteristics. It is important to note that there is not a specific score that marks a particular level; there is instead a continuum along which all parliaments are arrayed. The specificity of the scoring criteria provides a fuller understanding of strengths and weaknesses at the global, regional, and national levels.

Based on their scores, parliaments at the top level are more likely to have sound management, a solid yet flexible infrastructure, systems for managing all parliamentary documents, library and research services well supported by ICT, a website offering a great deal of timely and complete information with multiple channels to access it, and a variety of methods for engaging with citizens through traditional communication means as well as new and more interactive media. Those at the lowest level of adoption do not have an appropriate management structure in place (although a surprising number do better than expected in this area). They lack an adequate infrastructure (some do not have reliable electrical power), often have no systems for managing documents, have very weak libraries, and websites with the least amount of information (a few do not have websites at all). Many have no capabilities for using ICT-supported methods to communicate with citizens. Those in the middle vary in their strengths and weaknesses. While they sometimes have good scores in one or two areas, they have usually not achieved a high level of adoption in most categories. There is a continued unevenness in implementation similar to what was first observed in the 2008 Report.

Analyses of the scoring factors by income groups indicate that income level often has a direct relationship to the level of adoption of ICT. However, the pattern varies among areas of ICT. For example, the extent of the differences in oversight and management of ICT and in infrastructure applications, services and training is much less between parliaments in the low and high income groups than the differences in other areas. The size of the difference between parliaments in the high income group and all other income groups is also very large for document management systems, libraries, and websites, suggesting a substantial gap in these three areas. At the regional

level, the parliaments in Latin America achieve a total score that is above the average total score for all parliaments and the mean score of the upper middle income group, suggesting an encouraging path of e-parliament development for these legislatures.

An alternative way of looking at levels of e-parliament is to examine the relationship between the adoption of technology and its impact on legislators. The analysis suggests that there are serious infrastructure and managerial obstacles that prevent members from using technologies that could be of benefit in their daily work; limit their access to key parliamentary information and documents as well as policy related research and analyses; and constrain their ability to be in contact with their constituencies. For example, of the 27,249 legislators represented in parliaments that responded to the survey, 16% do not have personal access to the Internet in their parliament; 20% do not have a personal desktop or laptop computer at their disposal; 28% cannot access the text and current status of proposed legislation on their parliament's websites; 31% are not offered any type of ICT training or orientation programs by their parliament; and 47% serve in parliaments that have not implemented accessibility standards for persons with disabilities on their websites, disallowing these citizens the ability to follow members' and parliament's work.

Finally, it is useful to consider the relationship between the results of the survey and the IPU framework that describes the parliamentary contribution to democracy, focusing on the characteristics of transparency, accessibility, accountability, and effectiveness. Although the findings do not fully reflect all facets of these values, they do assess e-parliament elements that contribute to them in important ways. For example, making the text of proposed legislation available is clearly related to transparency, as is publishing the speeches and debate in plenary on a timely basis. Similarly, the use of interactive communication tools is related to accessibility as defined by the IPU, because it supports the engagement of citizens and civic society organizations in the work of the parliament. The survey results therefore provide some indication of the extent to which parliaments have achieved these values and the opportunities that exist for reaching a higher level. Tracked over time, the survey questions can also provide an indication of progress in achieving these values.