Technical Audit of the Informational System of the Parliament of the Republic of Moldova and Analysis of Informational Processes and Flows in the Decision Making Process

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This assessment was developed within the framework of the UNDP project „Strengthening the institutional capacity of the Parliament of the Republic of Moldova". Opinions expressed therein do not necessarily reflect the official views and policies of the United Nations Development Programme.

Acronyms and abbreviations

PC	Personal Computer
CRT	Cathode Ray Tube
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
IP	Internet Protocol
LAN	Local Area Network
LCD	Liquid Crystal Display
LP	Legislative Process
SCS	Structured Cabling System
IT	Information Technologies
ICT	Information Communication Technologies
WAN	Wide Area Network

1 Introduction

The present Survey has been conducted within the framework of the UNDP Moldova Project "Strengthening Institutional Capacity of the Parliament of Moldova" and represents an analysis of the ICT infrastructure (hardware, software, human resources) of the Parliament of Moldova. The report contains data on the existing ICT structure and recommendations on further actions for development.

Currently, in organizations and companies specialized in various fields of activity, IT has changed its role from an auxiliary element into a component, which has an impact on the efficiency of the whole organization. This is applicable to the legislative bodies as well.

For an efficient work of the legislative bodies, there is a need for informational systems which would function feasibly and would be developed in compliance with the general and specific requirements of the IT systems. Timely provision of the necessary information, management of documents' flow and storage, efficient cooperation in the legislative field depend on the good operation of such informational systems.

The present survey aims at covering complete and objective information on the current situation of the ICT infrastructure of the Parliament of Moldova, including software and hardware, databases, local area network and Internet. This information will be used in planning the development direction of the ICT in order to obtain the most efficient results with minimum resources.

The methodology applied in the ICT infrastructure survey was based on the assessment of the available IT assets in the Parliament.

The level of IT-literacy was assessed based on questionnaires which were filled in by the employees and members of the Parliament. The results were later introduced in a database, structured and analyzed.

Informational flows were researched by means of interviews with employees of the Parliament participating in the decision making processes.

The survey was conducted in the period of December 2005 – March 2006. The present report reflects the situation of ICT of the Parliament of the Republic of Moldova during the above mentioned period.

2 Executive Summary

Within the current project, a survey of ICT assets used by the Parliament of the Republic of Moldova was conducted, information flow charts applicable to the process of legislative activity were drawn up, the use of IT in these processes was studied, the web-site of the Parliament was analyzed and a comparative analysis with web-sites of the Parliaments of other states was performed. A concept of the Parliament IT infrastructure (e-Parliament) development, which aims at increasing the efficiency of organization's work based on expanded use of IT assets, was drafted with the participation of the staff of UNDP and Parliament of Moldova. If IT is intensively used in the activity of the Parliament, the users will need a certain level of training, therefore, the assessment of skills of the staff and MPs in this field was also conducted.

2.1 The e-Parliament Concept

The concept of electronic Parliament (e-Parliament) is proposed as a benchmark for the development of information system of the Parliament of Moldova. This concept emerged and was developed in the conferences dedicated to ICT usage. The notion of e-Parliament involves an intensive use of technical and organizational means aimed at achieving the following objectives:

- improve the activity of the Parliament and its structures
- develop interaction between the society and the Parliament and between the society and MPs
- increase transparency of the Parliament's activity for the society
- involve society in Parliament's activity
- increase society's trust in the Parliament

The development of IT oriented towards electronic Parliament will lead to a substantial increase in the efficiency of work of the staff and MPs, based on new means of searching, processing, structuring and presenting the information.

The use of **Intranet** technologies in the activity of the Parliament will lead to qualitative changes in the decision making processes, will give the opportunity to collectively process electronic documents in real time, thus reducing the waste of time for the production, coordination and editing of documents.

If the Internet is used and an appropriate level of security is ensured, the staff and MPs will be able to accomplish their tasks even when they have to work far from their working place, i.e. at home, hotel or any other place with Internet access. Apart from this, the electronic Parliament is open to the society and provides the citizens and organizations have an opportunity to involve in a more active cooperation with the Parliament.

2.2 Informational processes and flows

The working group held a number of meetings and discussions with representatives of the Parliament structures and conducted a detailed analysis of the Rules and procedures of he Parliament, draft regulations on the structures of the Administration of the Parliament, instructions on working with documents in the Parliament of the Republic of Moldova, instructions on conducting secretarial works related to petitions of individuals and legal entities addressed to state bodies, enterprises and organizations of the Republic of Moldova.

As a result, the operation of the Parliament was described through a set of defined processes which could, in their turn, be divided into sub-processes. The basic processes included the legislative procedure; the special procedure on adopting amendments to the Constitution; the voting procedure; petitions and audiences of individuals. The complex analysis of the set of identified processes proved that the other ones can be tracked down and described within the above mentioned basic processes.

It is necessary to mention that except for the Rules and Procedures of the Parliament, there are no other documents regulating the activity of the Administration of the Parliament and its structures. The lack of such documents leads to an ambiguous interpretation of the functions, obligations, methods of execution and relations between different parliamentary structures.

The votes are counted by the counters and, consequently, the procedure on announcing the vote results is delayed, affected by the human factor and, last but not least, the image of the Parliament suffers. Another aspect of voting by raising hands is the lack of a mechanism to keep the track of persons participating in the voting.

Another problem identified as a result of the analysis of functionality of the parliamentary structures is the lack of a common system of entry, registration and identification of documents addressed to the Parliament, committees, MPs, as well as of documents circulating inside the Parliament. As a result, it becomes difficult to check the status of a document.

All registers of the incoming/outgoing documents are maintained manually due to the lack of an automated system. The use of ICT instruments is very limited. For instance, in order to distribute a working document created electronically, a large number of hard copies have to be prepared. This leads to waste of time and materials, while in the case of an electronic dissemination of a document the distribution process would be cheaper and more efficient.

In this respect, the lack of a system to manage documents and work collectively on them should be also mentioned. The implementation of such a system would contribute to the efficiency of:

1. paper management;
2. contribution of different structures to the process of creation, collective work;
3. control over a version of a document under work and over each stage of its predefined life cycle;
4. editing and approval of a document; transparent control over document’s status;
5. increased level of security and differentiated access to the document under work and to archived documents.

2.3 User ICT skills

The assessment of computer literacy of the Parliament staff demonstrated that at the moment their skills are not sufficient and it is necessary to undertake a number of actions in order to improve them. The precise level of IT skills of MPs could not be determined due to their extremely low participation in the testing process, i.e. out of 101 members; only 18 have submitted their responses to the test.

The main conclusion of the study on the ICT infrastructure of the Parliament of the Republic of Moldova is that this structure, in its current state, is not ready to be switched to the new, modern and efficient working methods by applying the existing informational technologies.

2.4 Informational system of the Parliament

During the analysis, it was found out that the level of automation of the main functional processes (e.g. legislative process, registration and control of the incoming and outgoing correspondence) is extremely low.

The use of informational systems is limited to the use of electronic basis of the legislative documents of the Republic of Moldova "MoldLex"/"Jurist", a software for recording petitions (Petitions and Audiences Service) and accounting applications.

With regard to the use of operating systems and applications at the working places, one should mention the lack of record, standards and a common classification of the set of applications as well as an incomplete compliance with the requirements of the licensing policies of software producers.

The IT infrastructure of the Parliament of the Republic of Moldova is at initial stage of development. The IT concept, department regulations and IT development strategy are missing.

Currently, this infrastructure of the Parliament of the Republic of Moldova includes: 214 PCs of different models used as work stations, 4 PCs used as servers, 102 printers of different models and a local computing network.

At the moment of undertaking the analysis, the coverage with computers represented 72.5%, meaning that there were 214 PCs for 295 working places of the staff and MPs of the Republic of Moldova. At the same time, out of the total number of computers, some 22.5% were old models (48 PCs based on Pentium and Pentium II), 48% - computers based on Pentium IV processor and the remaining 29.5% were PCs based on Pentium III processor.

Some 33.2% of monitors were very old models with unsatisfactory technical specifications which do not correspond to the modern requirements on safe use. The share of liquid crystal displays monitors was 14.5%.

The access of staff and MPs of the Republic of Moldova to printing devices is also limited. Some 18.7% of PC users do not have standing access to printers.

The wire infrastructure of the local area network covers all the offices in the Parliament building where computers are or were installed, however it was built without respecting the appropriate standard requirements. Consequently, it is not possible to connect new work stations to the network without undertaking additional works to install new wires.

The supply with electrical energy does not correspond to the common acceptable standards as well. Computers and peripheral devices are connected to the common network, and separated groups of plugs and over-supply protection systems are missing.

Equipment which does not correspond to the requirements of this class of devices is used as servers. This equipment doest not have, first of all, error tolerance and capacities to increase productivity.

The room where the server and the central communication equipment are installed needs to be finished as it does not correspond to the appropriate standards for a server's room. In particular, the requirements on supplying the room with electric power are not observed either are the fire protection, ventilation and air-conditioning standards; access control is also insufficient.

Such elements of the IT organization as backup copying and effective monitoring are also missing due to the lack of informational systems and databases which would ensure the main processes of the secretarial works of the Parliament.

There are no organizational or technical measures to ensure informational security.

2.5 Parliament web-site

Internet resources represent a tool for mass information of the citizens. Accessibility, availability and easiness to use Internet and services based on web technologies represent an advantage in informing the citizens. Due to these reasons, the presence of the Parliament of the Republic of Moldova on the Internet is an opportunity to improve its relations with the citizens of the country. The web-site of the Parliament can be used also to inform the internal users such as the staff and MPs as well as other state institutions.

A study on assessing the available resources was conducted aiming at improving the quality of the web-site of the Parliament of the Republic of Moldova. For this assessment, the most important criteria for a legal web-site were selected. These criteria included the Content, Organization, Navigation and Usage as well as Accessibility. Based on these criteria, a questionnaire was drafted (see *Annex 8. Outline of questionnaire for evaluation of web-sites*), based on which the evaluation of the web-site of the Parliament of the Republic of Moldova was conducted. This questionnaire was also used for a comparative evaluation of web-sites of the legislative bodies of other countries (Latvia, Ireland and Romania).

The outcomes of the survey have demonstrated that the presence of the Parliament of the Republic of Moldova on the Internet is unsatisfactory. Not all the documents and information produced by the Parliament are published and the life cycle of a document or draft law cannot be followed. The documents which are published on the web-site are not published in a portable format and most of the published documents are not complete. There is only limited information on the web-site of the Parliament regarding MPs, political parties and committees.

The presentation of the Parliament of the Republic of Moldova on the Internet has to be developed simultaneously with the development of web technologies.

2.6 Recommendations

The report ends with recommendations on building an advanced ICT infrastructure within the Parliament of the Republic of Moldova. These recommendations include the necessary actions for the development of the Concept on ICT usage, staff training in the field of computer use and associated technologies, development and optimization of the ICT infrastructure and intensification of using the existing ICT in the functional processes at all levels.

2.6.1 Organizational changes

For an efficient functioning of the IT systems in the Administration of the Parliament, it is recommended to establish a department to deal with the management of IT systems and to assume responsibilities for the operation and development of IT systems.

2.6.2 Informational flows and processes

For a clear definition of functions and responsibilities, optimization and increase in the efficiency of processes taking place in the Parliament, it is recommended to finalize and approve the Regulations on the Parliament's structures, which are currently being drafted. It is necessary to create and approve documents, procedures and policies related to the use of information, such as the regulations on informational security, policies and procedures on using electronic resources (e-mail, Internet, files, information of the local archive and of the Parliament etc.).

It is very important to implement a common system to manage and process documents which would lead to automation of identified processes, ensuring the collective work both internally and with other public administration institutions, non-governmental organizations and the civil society.

The implementation of an electronic voting system will lead to an increased efficiency of the voting process and better image of the Republic of Moldova.

The unification of the library resources of the Parliament in a single electronic library will provide an opportunity to render a large number of services such as the electronic catalogue, on-line subscriptions, public access to the catalogues and interlibrary exchanges.

2.6.3 ICT skills

It is recommended to undertake actions aimed at increasing the IT knowledge of users. Training on personal computer use should be organized for the staff of the Parliament. In addition, the staff responsible for operation of computer network should benefit from specialized training in the field of IT systems management.

2.6.4 Infrastructure

The available IT infrastructure of the Parliament of the Republic of Moldova needs substantial improvement. The quantity of personal computers and peripheral devices is insufficient. Most of the available equipment is morally and physically obsolete. The architecture of the local network

does not correspond to the relevant standards and cannot ensure a satisfactory activity for an intensive use of informational systems. The network's logical structure is in a primitive condition and does not allow for an efficient management of IT resources. It is recommended to adjust the local network to the relevant standards.

It is also recommended to undertake certain technical and organizational measures in order to ensure the informational security, particularly saving backup copies of data, organization of antivirus protection and operational monitoring of the network.

2.6.5 Parliament web-site

It is recommended to further develop the web-site of the Parliament of the Republic of Moldova using the functions of modern web technologies.

2.6.6 Evaluation of costs

An estimated evaluation of costs of the recommended actions is presented in section 9.7 of the current report.

2.6.7 Recommended actions

In order to ensure an intensive use of IT in the activity of the Parliament, it is recommended to undertake of the following actions:

- Equip the working places with computers and peripheral devices;
- Organize training courses to improve the IT knowledge of users;
- Organize domain-structures for the Parliament network and train the network administrators in the field of IT. Install domain-servers;
- Create an electronic system of documents flow;
- Adjust the local network to the relevant standards;
- Organize an effective monitoring of the network.

3 The e-Parliament concept

3.1 Views on the e-Parliament

The notion of e-Parliament emerged and was developed during the conferences on ICT usage which took place in Hague (September 2002) and Cyprus (2003), organized by the ECPRD (European Centre for Parliamentary Research and Documentation) in which the Parliament of the Republic of Moldova participated as well. The term e-Parliament means an intensive use of technological and organizational means, aimed at achieving the following objectives:

- improvement of the activity of the Parliament and its structures;
- development of interaction between the society and the Parliament and the society and MPs;
- increasing the transparency of Parliament's operation for the society;
- involvement of the entire society in the working processes of the Parliament;
- increasing society's trust in the Parliament

At the same time, special attention is drawn to the new means of communication and transfer of information between the society and the Parliament, society and MPs, MPs and Parliament structures. These new means are the e-mail, Internet, intranet, exchange of electronic documents. The most important advantage of these communication methods is represented by the fact that parties participating in the communication process are no longer limited by time, distance or state borders. The electronic means of communication should complement, not exclude the traditional means of transmitting information such as radio, television, newspapers, post, and telephone. It is possible that in case of a more intensive usage of the informational technologies certain organizational changes in the work of the Parliament will be needed.

What does the e-Parliament include?

By e-Parliament it is meant to organize the Parliament's work in such a way that:

- the information necessary for decision making (laws, statistic reports, different archives) is accessible not only on paper, but also electronically;
- tools for a quick search of the necessary information are available;
- a system for working collectively on the documents exists;
- secretarial works are performed by using informational technologies and the electronic flow of documents is used;
- access to the information storage and informational systems is available via Internet protocols and is thus possible from any place in the world where there is a computer and access to Internet; this would provide any Member of the Parliament or member of the staff with the opportunity to participate in working processes regardless of his whereabouts (i.e. at work, on mission, at home, on leave, etc.)

- Citizens can use Parliament's web-site to find any information in which they are interested and which is not confidential: Parliament's composition, working hours, minutes of the meetings, reception hours and reception arrangements etc.
- Citizens have the opportunity to communicate with the Members of the Parliament via e-mail, web-site, messaging services;
- Citizens can participate in working processes of the Parliament in issues related to their interests through different types of forums.

What do the interested parties obtain from e-Parliament?

Members of Parliament. In performing their work, the quality of which depends a lot on the accuracy and speed the information is received, MPs could use all the advantages of the electronic information (exceeding the advantages of the "information on paper"):

- receive the necessary information quickly and in a convenient format;
- have a fast and convenient exchange of information with other Members of the Parliament, other organizations and citizens;
- have an objective view on the electors' opinions on different issues;
- communicate with citizens through messengers;
- participate in the collective work on documents from a convenient place, at a convenient hour;
- participate in the work of the Parliament remotely while on mission, at home, on leave etc.

Citizens

- participate in making decisions on issues affecting their interests;
- communicate with Members of the Parliaments through e-mail, web-site, from any place with a computer and access to Internet;
- for making a request to the Parliament, it is not compulsory to know the internal structure of the Parliament and the distribution of competencies between different services and committees; a system which is built appropriately and ensures the information exchange will allow the citizens to address the Parliament through a common point – the portal;
- receive the information they are interested in, relating to the work of the Parliament.

Members of the Administration of the Parliament. While preparing and providing the Members of the Parliament with the information necessary for decision making, the staff will have the opportunity to improve the quality of their work due to:

- new possibilities to search for the necessary information;
- means for an increased capacity to process and present the information.

3.2 Infrastructure of the e-Parliament

The essential elements of the IT infrastructure of the electronic Parliament are:

- The system of storing, searching and providing information;

- The system which ensures the collective work on the documents of the MPs and/or Parliament staff;
- A range of systems for information exchange between: MPs, staff, citizens;
- Work stations of the MPs and Parliament staff;

For an efficient functioning of these elements, the IT infrastructure of the Parliament should include a number of technical and program decisions which are fully missing today or are undertaken at an insufficient level.

The system of storing, searching and providing information. Such a system should include the Data Processing Centre (DPC), which consists of the information storage device itself, a separate server, a system for databases management, an application or applications to ensure information search and presentation. As a basic element of the infrastructure, this system should have the following properties:

- Error tolerance; unproductive interruption or incorrect functioning of this system could lead to unproductive interruption and considerable delay in the work of the whole organization;
- Scalability; increase in the quantity of stored information, which will in time inevitably need an increase in the capacity of the system including the volume of the desk space, processing speed etc. If the system is not able to increase its productivity, earlier or later it will not cover the needs of the secretarial staff; the need to introduce cardinal changes to the system will emerge as far as to its full replacement, this having a negative impact on the efficiency of the whole organization
- Monitoring and administration; monitoring and effective administration represent a peculiarity necessary to the critical elements of the infrastructure. These allow advance planning and undertaking of effective measures to ensure an appropriate level of system functioning.

Systems of collective work on documents. Such systems are a set of mechanisms for collecting and exchanging information, gathering knowledge, managing collective work processes, and settling problems in the organization, standing control over resources, documents and stage of tasks' execution, organization of interaction in real time.

System of information exchange. With regard to information transmission within the organization, it is necessary to pay attention first of all to the local computing network. LAN becomes an important element of the IT infrastructure since data exchange will not take place as a flow of paper documents, but as a flow of electronic documents. Consequently, the activity of the whole organization will depend directly on the feasibility and productivity of the local network. Therefore, when the LAN becomes critical for the activity of the whole organization, it has to meet the requirements of the critical elements of the system:

- Fault tolerance;
- Scalability;
- Monitoring and effective administration;

Currently, there is a local computing network installed in the Parliament of the Republic of Moldova. However, it does not comply with the SCS standard. In case of non-intensive IT usage in the process of secretarial works, such a network might not raise problems; nevertheless,

following the transfer from paper documents to electronic documents, the volume of data transmitted through the network will increase considerably. In this situation, a network which is incorrectly built may become a “strait” for the whole IT infrastructure and the cause of delays in information transmission, “blockage” of applications, inaccessibility to Internet pages etc.

Workstations of the MPs and staff. When paper documents are no longer used in the working process and are replaced by the electronic ones, the personal computer becomes an important element at the working place similarly to the pen in the past. Currently, a number of 81 working places in the Parliament of the Republic of Moldova are not equipped with personal computers and 46 working places have old model computers.

Administration of the IT infrastructure. By the administration of the IT infrastructure, the present document means the actions oriented towards ensuring the continuous activity of all IT elements.

These actions include:

- regular creation of backup copies of data;
- efficient monitoring of the status of infrastructure elements such as communication equipment, data servers and devices;
- ensuring the antivirus protection;
- distribution of the access rights of users to infrastructure resources;
- periodic updates of the operating systems and software;
- measures to ensure the protection of information from unauthorized access;

At the moment, none of these actions is undertaken appropriately:

- backup copying is either missing or performed randomly;
- effective monitoring is not undertaken;
- antivirus protection has weaknesses and gaps;
- administration of users’ registration is done manually without using the necessary operating systems;
- regular updates of the operation systems are not performed;
- there are no policies, procedures and practices to ensure informational security.

4 Methodology

The methodology applied in the present survey has been developed by the executors based on the Terms of Reference. The draft version was presented for coordination and approval to the UNDP Project Coordinator and representative of the Administration of the Parliament.

The survey was divided into four thematic sections: Informational processes and flows, User ICT skills, Informational system of the Parliament, and the Parliament's web-site. Based on the achieved results, recommendations for further development of the ICT usage have been developed.

4.1 Informational processes and flows

The following subjects were studied as part of the present section:

- Existing policies and normative documents regulating the decision making process;
- Roles of participants, identification of the leaders of processes, authors and information users;
- Decision making procedure/creation of documents:
    - Induction;
    - Sources and methods of collecting information;
    - Analysis of the collected information;
    - Coordinating process within the structure;
    - Coordinating process with other structures;
    - Submission of the draft decision for approval;
    - Other stages;
    - Diagram of the process;
    - Procedures and methods of control over execution;
    - Organization of documents archives and libraries.

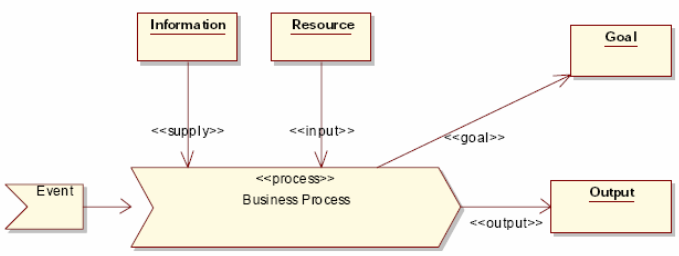
In the present section, processes in relation to which there is a higher demand on behalf of citizens and/or organizations have been mentioned.

The following documents were used as main references:

- Constitution of the Republic of Moldova;
- Rules and Procedures of the Parliament of the Republic of Moldova (Law no. 797 of 02.04.96)
- Law on the procedure of electing the President of the Republic of Moldova (no. 1234-XIV of 22.09.00)

Business processes have been identified with the logistical and technical support of the UNDP Project Coordinator and the representative of the Administration of the Parliament in order to obtain the necessary information at the current stage; the persons in charge and key roles of the structural subdivisions, standing and special committees have been identified for each process. An individual analysis of every key-process has been undertaken thereafter.

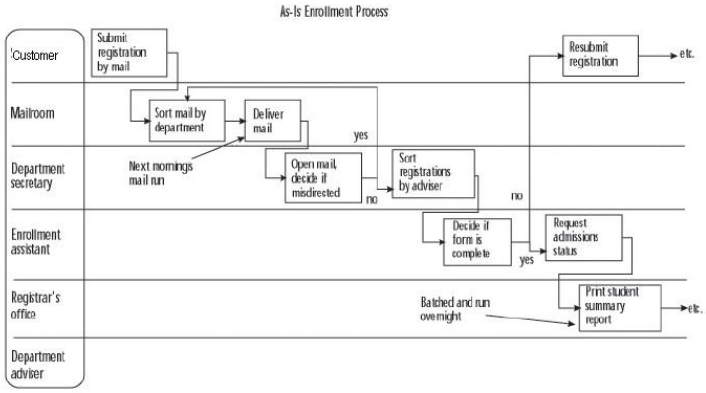
In addition, the totality of actions aimed at achieving a specific result for a concrete and well-defined group of users has been examined as a business process.



The data were obtained during the meetings with responsible persons and main participants, followed by data analysis and integration.

For every basic process, one developed an activity diagram which reflects:

- Roles of the participants to the process;
- Responsibility for every individual task within the process;
- Sequence and flow itinerary depending on certain factors and events.



4.2 ICT skills of users

A questionnaire has been developed to assess the computer literacy of the staff and MPs. The questionnaire contains over 40 questions related to those five fields of knowledge of the informational technologies:

- **HW.** General knowledge; hardware - 6 questions
- **OS.** Operating systems – 13 questions
- **OF.** MS Word and MS Excel Applications – 11 questions
- **NI.** Networks and Internet – 6 questions
- **S.** Informational security – 4 questions

To prepare the questions, the ECDL (European Computer Driving License) questionnaires have been used. The structure of questions and fields of knowledge were also based on the ECDL model.

Brief description of test modules:

MODULE	**EDUCATION LEVEL**
HW Module	General knowledge in the field of informational technologies and PC use in every day life. Knowledge of PC components – hardware, software, data storage devices. General knowledge of modern communications, software.
OS Module	Skills in using computers and operating systems. Knowledge of computer set ups, using Help, restarting after "hanging-up", working with the desk top, organizing the filing structure. Working with a text, printing electronic documents, compressing data, antivirus protection.
OF Module	Using the text editor in daily life, creating, formatting and saving text documents. Copying and moving texts, working with tables, images and graphic objects, re-sending texts via e-mail. Using software applications in the work with electronic documents. Creating, formatting, and modifying electronic tables, understanding the concept of working with electronic tables.
NI Module	Using the Internet, understanding the basic concepts of informational technologies functioning, information protection. Working with electronic post, understanding the basic concepts of electronic documents' exchange
S Module	General knowledge in the field of informational security, data protection.

Depending on its level of complexity each question was rated with a number of points (from one to four), obtained by the interviewed persons when providing a correct answer.

The maximum number of points accumulated by each field was the following:

- **HW**. General knowledge; hardware - 6
- **OS.** Operating systems – 17

- **OF.** MS Word and MS Excel Applications – 18
- **NI.** Networks and Internet – 7
- **S.** Informational security – 6

The maximum number of points – 54.

In total, the staff and MPs were distributed 231 questionnaires. Answers provided in the collected questionnaires were processed, introduced in a database and analyzed.

During the test, we have tried to follow as much as possible the ECDL tests, however, it is inappropriate to consider this test an exam for receiving the ECDL certificate. The test conducted could be considered an evaluation of "how could I have passed the ECDL test today?"

4.3 Informational system of the Parliament

In order to collect information on the existing ICT infrastructure, the executors undertook a number of visits to the Parliament to learn about the ICT assets available to the Parliament.

As a part of the conducted works, information on the quantity and level of modernization/performance of available PC in the Parliament, used operational systems, servers and their functions, quantity and capacity of peripheral equipment has been obtained. Information on applications used in the Parliament in the legislative activity has been also collected. This information was collected in a database and systematized in order to be used later by the staff of the UNDP and of the Parliament of the Republic of Moldova.

In the discussions held with the staff of the Parliament, information on the infrastructure and system applications (such as e-mail, antivirus soft) has been collected. Internet access methods have been also studied.

The executor conducted an analysis of the existing local network of the Moldovan Parliament from the point of view of quality of the wire infrastructure, degree of modernization and complexity of the network active equipment and their compliance with the existing requirements and those which will be applicable during intensive IT usage in the activity of the Parliament.

Rooms used for servers have been examined too.

4.4 Parliament web-site

In order to evaluate the web-site of the Parliament of the Republic of Moldova, a comparative analysis of this site with the sites of legislative bodies of Romania, Latvia and Ireland was conducted. Comparisons were based on the evaluation of certain quality indicators of the sites such as:

1. Contents;
2. Organization;
3. Navigation and use;

4. Accessibility.

4.5 Recommendations

The obtained information was gathered, introduced in the databases, processed and submitted in the present report. Based on this information and interviewees' professional experience and qualifications, the executors developed a number of recommendations for further development of the ICT infrastructure of the Parliament of the Republic of Moldova.

5 Information processes and flows

5.1 General

The operation of the Parliament may be described as a set of definite processes, which, in their turn, may be divided into sub-processes. The basic processes have been identified in discussions and meetings with representatives of Parliament subdivisions and upon detailed consideration of the Rules and Procedures of the Parliament, the draft Regulations of the subdivisions of the Parliament system, guidelines on processing of documents within the Parliament of the Republic of Moldova, guidelines on secretarial procedures in respect of petitions from individuals and legally established entities addressed to state authorities, companies, institutions and organizations of the Republic of Moldova.

Based on the meetings and analyses, the following processes have been identified

Process	**Sub-process**
Legal procedure	
Special procedure for adoption of laws amending the Constitution	
Voting procedure	
Petitions and audiences of individuals	
Establishment of working bodies	• Session for the establishment of a body • The establishment of working bodies of parliamentary factions • Formation of proposals of parliamentary factions on appointment or election of their representatives in the Parliament Bureau, standing committees and other working bodies of the Parliament • Formation of parliamentary factions' proposals on development of the agenda of the Parliament and its Standing Bureau • Formation of parliamentary factions' proposals for establishment of special and investigation committees • Formation of parliamentary factions' proposals on draft resolutions of the Parliament referring to the work program of the Government

Election of the Chairperson of the Parliament, Vice Chairpersons and formation of the Standing Bureau of the Parliament	• Election of the Chairperson of the Parliament • Election of Vice Chairpersons • Formation of the Standing Bureau of the Parliament
Revocation of the Chairperson of the Parliament, Vice Chairpersons and of the Standing Bureau of the Parliament	• Revocation of the Chairperson of the Parliament • Revocation of the Vice Chairpersons • Revocation of the members of the Standing Bureau of the Parliament
Operation of the Standing Bureau	• Proposals on the date of convening a session and on its duration • Presentation of the Rules and procedure of the Parliament for consideration, as well as amendments for its modification and completion • Preparation work for the operation of the Parliament and support to such operation • Voting on the nominal membership of standing commissions by the Parliament • Establishment of the agenda of Parliamentary Sessions • Approval of the Regulation on accreditation of mass media representatives for the Parliament • Setting up responsibilities of the members of the Bureau • Setting up the structure and staffing of the administrative system of the Parliament • Formation of the budget for the administrative system of the Parliament
Activity of the Chairperson of the Parliament	• Chairing the operation of the Standing Bureau and of the Parliament • Ensuring compliance with the Rules and Procedures and maintaining order during the sessions • Reception and distribution of draft laws, proposals on legal initiatives and reports of committees • Announcing voting results and adopting legal documents • Signing laws and resolutions passed by the Parliament • Representing the Parliament in its relationships with the President of the Republic of Moldova and with the

	Government • Nomination of parliamentary delegations members • Hiring and firing of staff of the administrative system of the Parliament
Activity of the Vice Chairpersons of the Parliament	
Election of Chairpersons, Vice Chairpersons and Secretaries of standing committees	
Sessions of committees	• Convening of sessions of committees • Voting during the session of a committee • The sessions proper of the committee • Participation of outsiders in the session of a committee • Comments on draft laws, legal initiatives, carrying out of parliamentary investigations, debates on other issues pertaining to the authority of the Chairperson of the Parliament • Consultative sessions • Designation of report presenters • Presentation of reports and comments approved by committees in plenary sessions of the Parliament
Common sessions of two or more committees	
Initiation of an investigation within the authority of the committee on operation of public authorities	
Sessions and meetings of the Parliament	
Development of the agenda	

Based on discussions with project coordinators and on comprehensive analyses of the set of identified processes, the conclusion was that the major part of these processes may be found and described within the framework of three basic processes that take place in the Parliament:

- The law making process, including the Special Procedure for adoption of laws on amending the Constitution;
- Voting procedure;
- Petitions and audiences of individuals.

As a result, these processes have been described through the value chain diagram, while the comprehensive sub-processes have been broken down using Advance Activity diagram schemes showing the activities, movement and decision making, roles, etc.

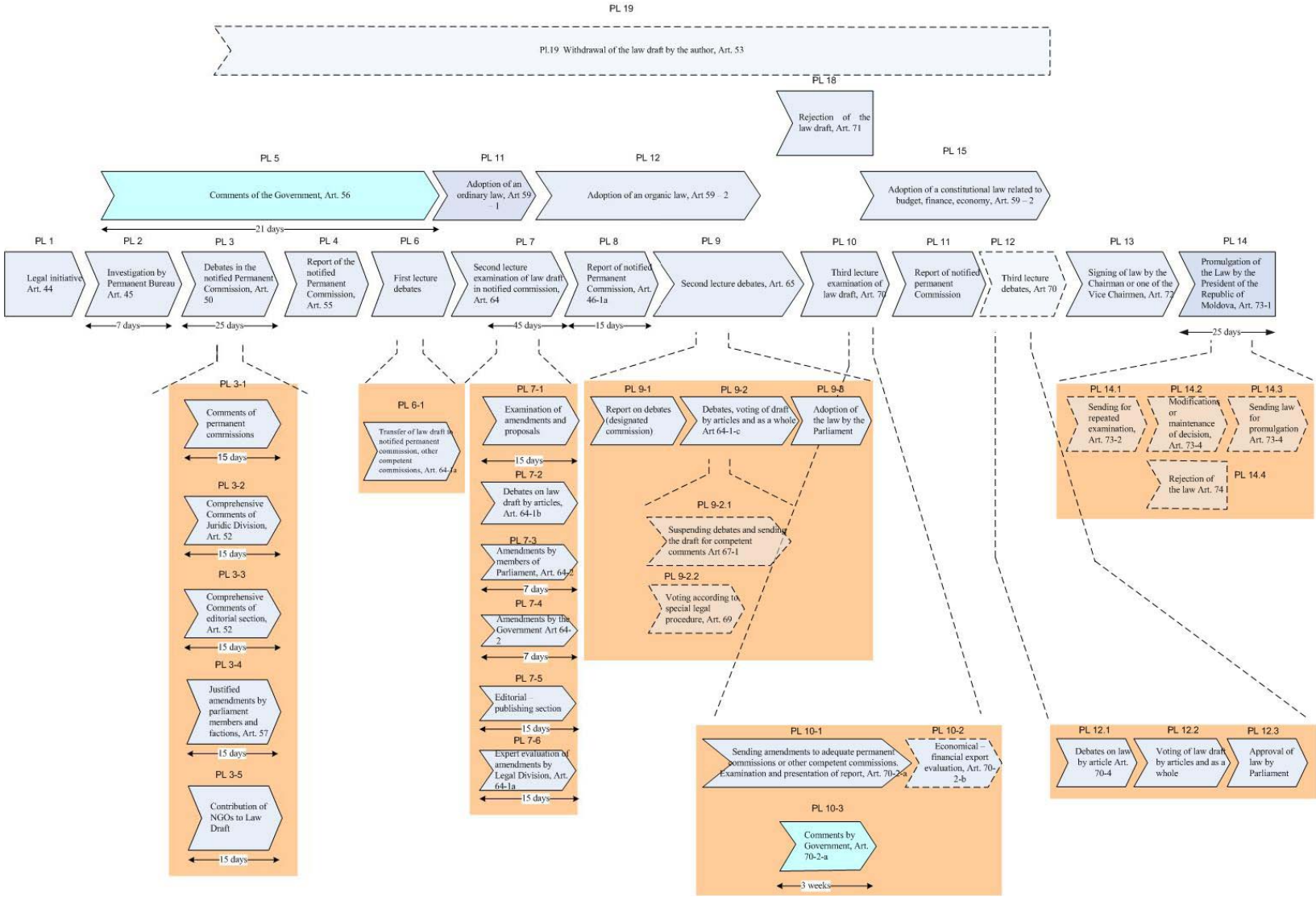
Some processes identified in the course of the analyses take place infrequently, some only once during the operation of the Parliament. Others, such as the operation of the Parliament Bureau, of the Parliamentary Committees are processes related to the basic processes that have been analyzed and shown as a general operation diagram.

5.2 Law making process

The law making process is the one that pertains to the basic function of the Parliament. The process includes the greatest number of participants, complicated flows of documents and complex decision making phases.

The value chain diagram of the law making process is shown in the figure below

Figure 5-1 Value Chain Diagram of the Law Making Procedure



This diagram shows the sub-processes when passing a draft law. The identified sub-processes have been numbered and each of them has an article of the Rules and Procedures of the Parliament assigned to it. The "Advanced activity diagram" scheme, with the described sub-processes can be viewed in *Annex 1. Legislative process (LP) charts*.

It should be mentioned that aside from the Rules and Procedures of the Parliament, there are no other documents regulating the activity of Parliament Administration and its subdivisions. The lack of such documents allows for ambiguous interpretation of functions, responsibilities, ways of their implementation and relationships between parliamentary units.

Another problem that has been identified during the analysis of parliamentary units' operation is the lack of a unique system for entry, registration and identification of documents addressed to the Parliament, commissions, and Members of the Parliament and of documents circulated within the Parliament. Thus, it is difficult to find out at which processing stage the document is.

All registries of in-coming and out-going documents are manual. There is no automated system. The level of ICT tools usage is very low. For example, in order to distribute an electronically generated document, a large number of hard copies have to be made. This principle leads to waste of time and materials, while electronic distribution is cheaper and more efficient.

5.3 Voting process

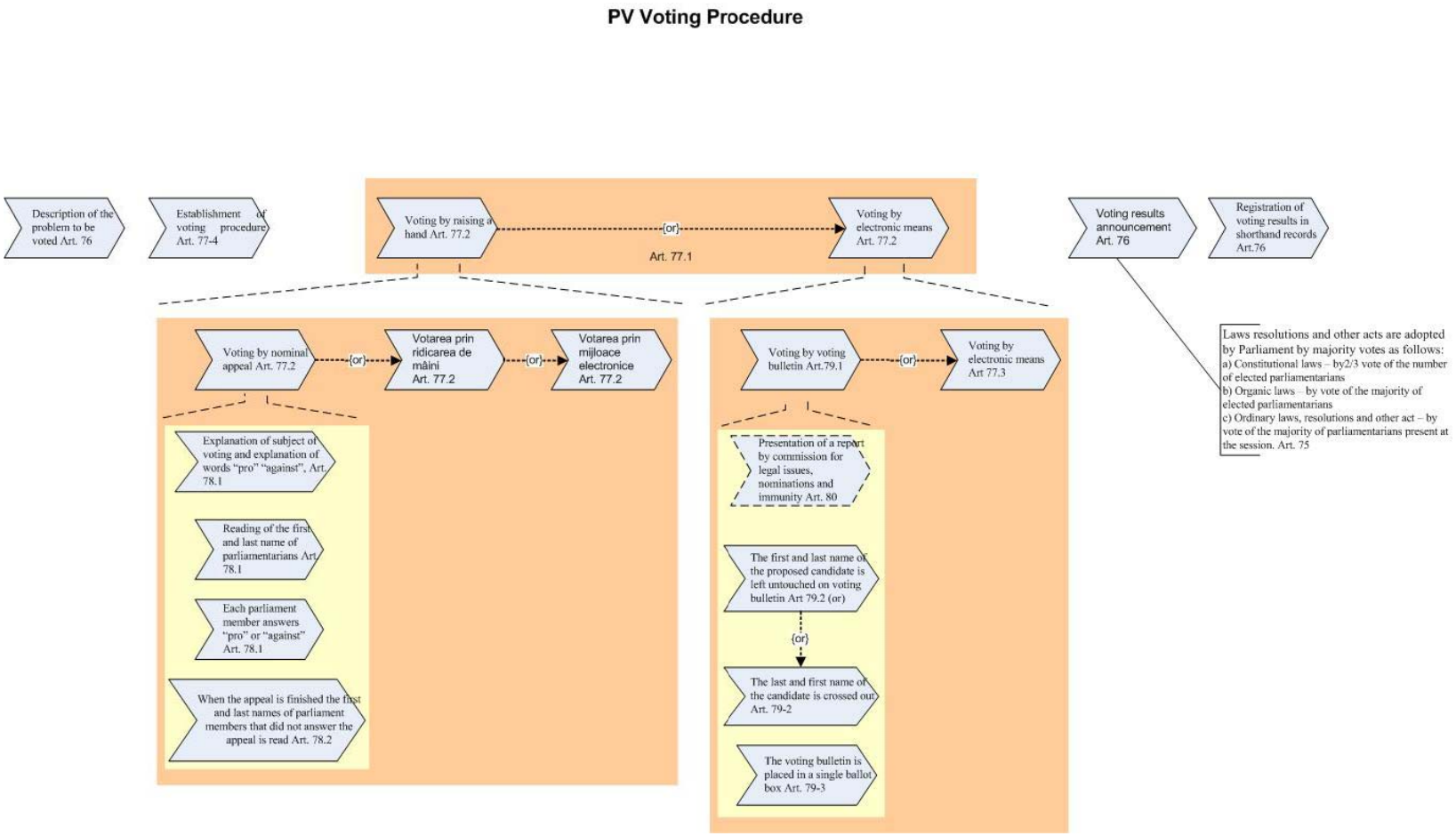
Any resolution, law or other act issued by the Parliament is put to vote. The parliamentarians vote personally by open or secret vote.

The sub-processes that were identified have an article of the Rules and Procedures of the Parliament designated to them, to which they are referred. The advanced-activity diagram scheme with the description of sub-processes may be viewed in *Annex 2. Voting Procedure (VP1).*

The majority of voting at plenary sessions of the Parliament is done by raising hands. The numbering of votes is done by numerators, thus the announcement of results is delayed, affected by human factor and, last but not least, the image of the Parliament is thus undermined. Another side of voting by raising hands is the lack of a tool for record-keeping of people participating in the vote.

The value-chain diagram of the voting process is shown in the figure below:

Figure 5-2 Value-chain diagram of the voting procedure



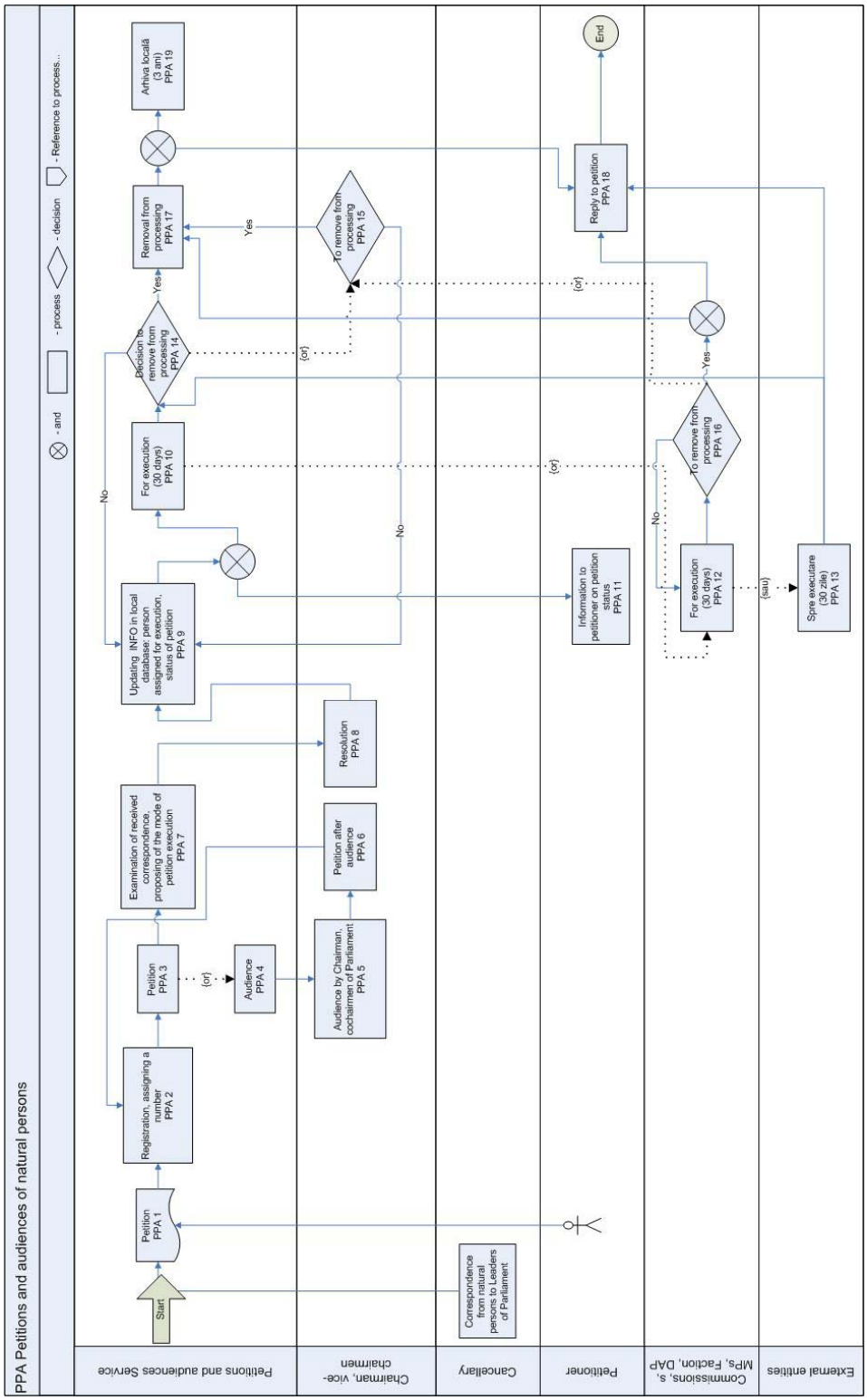
5.4 Petitions and audiences

The petitions of the individuals to the Parliament and its management are sent to the Service for petitions and audiences, while the petitions addressed to parliamentarians, standing commissions, parliamentary factions, administrative unit of the Parliament are received and sent to the addressees by the Chancellery of the Parliament.

The registration and record-keeping of petitions received by the Chancellery is maintained manually, which makes their identification, tracing and status establishment difficult. Another aspect of petitions registration by the Chancellery of the Parliament is that the petitions of the individuals are recorded twice: first upon their receipt by the Chancellery and second at their handing in to the Service for petitions and audiences.

The work with petitions within the Service for petitions and audiences is a process with some automated elements which operates autonomously, but does not assure communication with the Chancellery. Currently the system for record-keeping of petitions and audiences within the respective Service is not maintained by the producer, thus the adjustment of the system to new requirements is not possible.

The respective diagram is given below:


PPA Petitions and audiences of natural persons
- and
- process
- decision
- Reference to process...
Petitions and audiences Service
Chairman, vice-chairmen
Cancellary
Petitioner
Commissions, s, MPs, Faction, DAP
External entities
Start
Petition PPA 1
Registration, assigning a number PPA 2
Petition PPA 3
{or}
Audience PPA 4
Audience by Chairman, cochairmen of Parliament PPA 5
Petition after audience PPA 6
Examination of received correspondence, proposing of the mode of petition execution PPA 7
Resolution PPA 8
Updating INFO in local database: person assigned for execution, status of petition PPA 9
For execution (30 days) PPA 10
Information to petitioner on petition status PPA 11
For execution (30 days) PPA 12
Spre executare (30 zile) PPA 13
Decision to remove from processing PPA 14
To remove from processing PPA 15
To remove from processing PPA 16
Removal from processing PPA 17
Reply to petition PPA 18
Arhiva locală (3 ani) PPA 19
End
Correspondence from natural persons to leaders of Parliament
Yes
No
{or}
{sau}

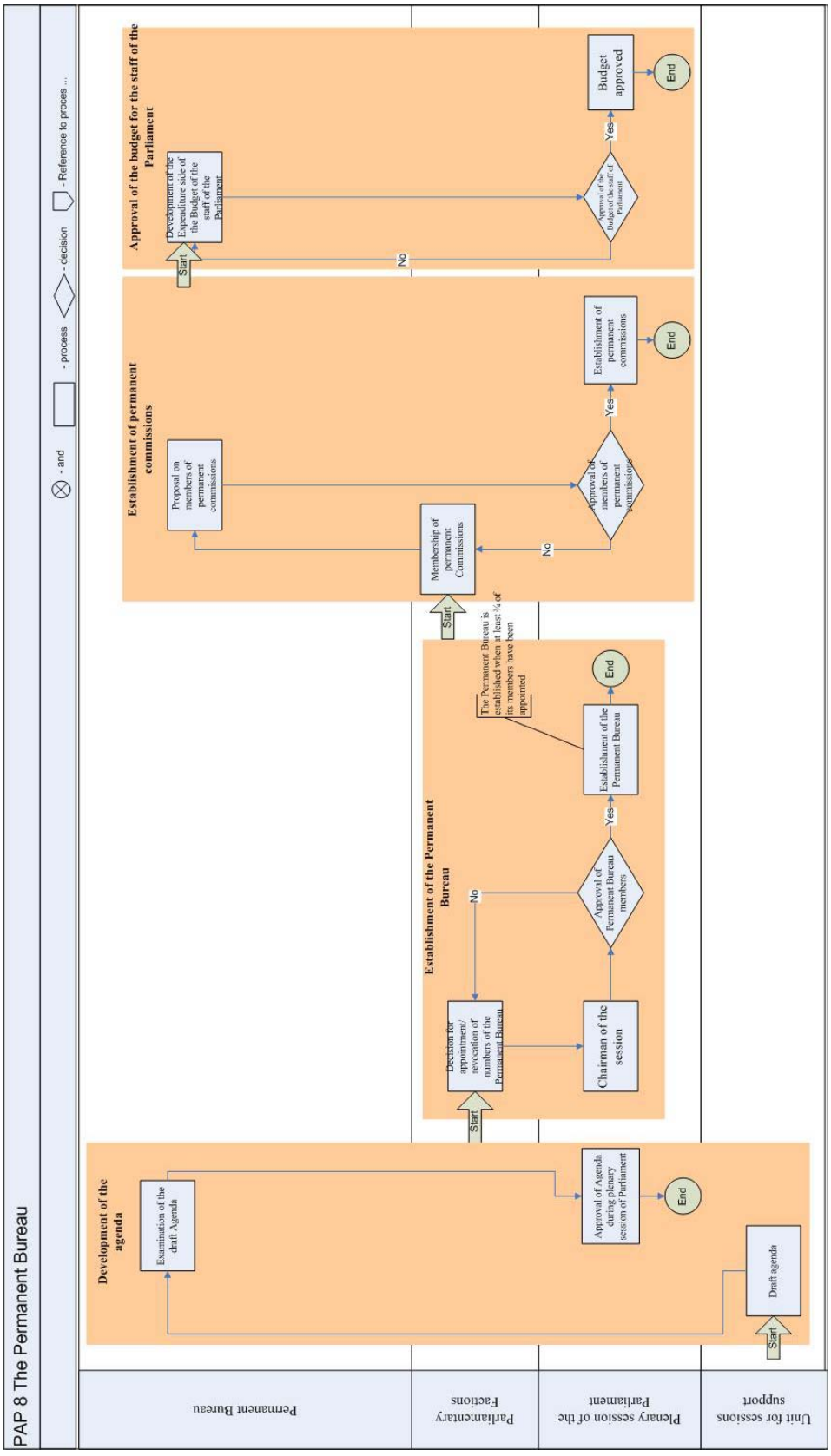
5.5 General functional diagrams

5.5.1 Operation of the Standing Bureau

The operation and flow of information processes have been identified based on analysis of basic sub-processes which take place within the entity:

- Establishment of the Standing Bureau;
- Establishment of standing commissions;
- Development of the Parliament the plenary session agenda;
- Approval of the budget for the staff of the Parliament;

The general diagram of processes is shown in the Figure below:

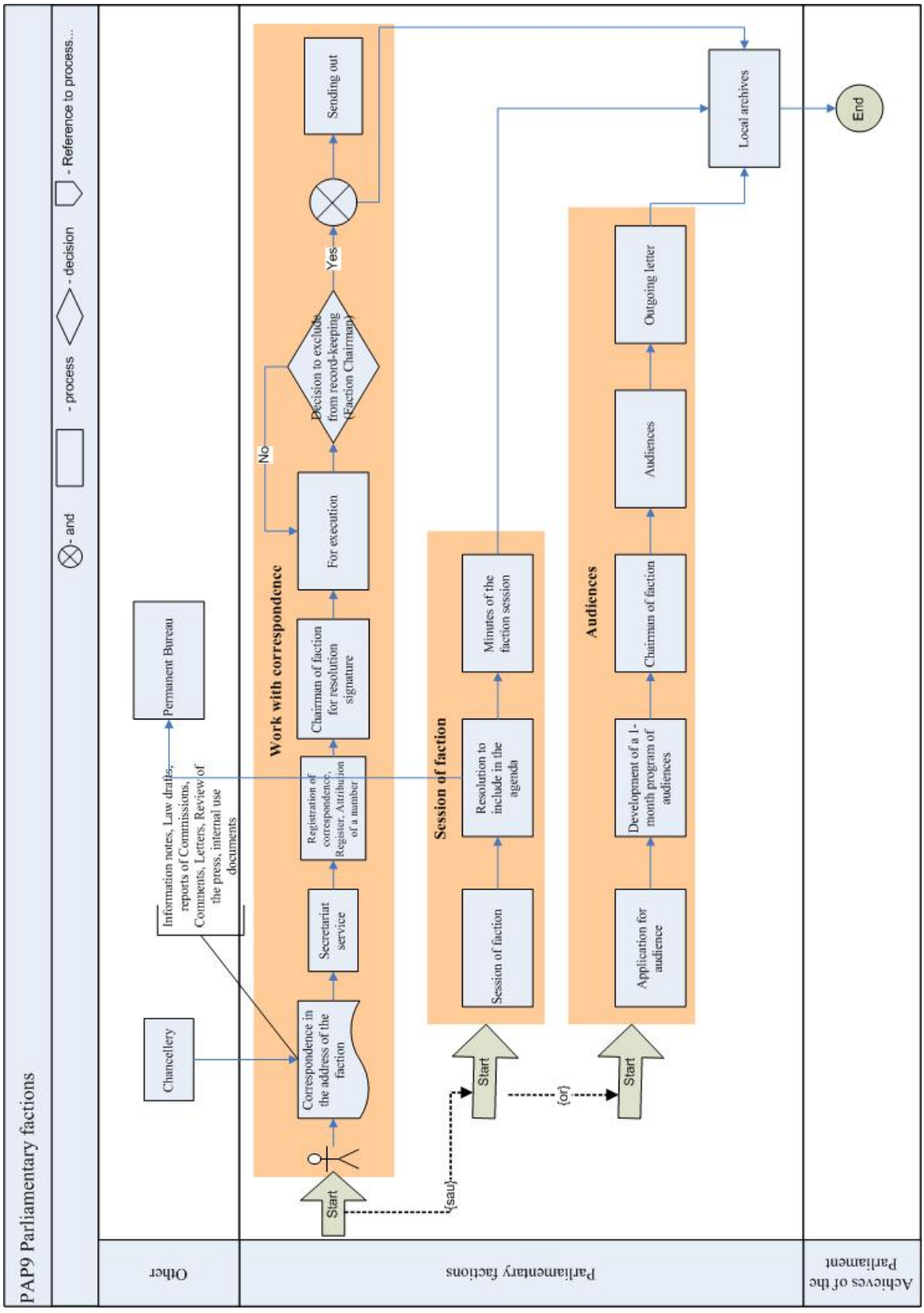

PAP 8 The Permanent Bureau
⊗ - and
- process
- decision
- Reference to proces ...
Permanent Bureau
Parliamentary Factions
Plenary session of the Parliament
Unit for sessions support
Development of the agenda
Examination of the draft Agenda
Approval of Agenda during plenary session of Parliament
End
Draft agenda
Start
Establishment of the Permanent Bureau
Decision for appointment/ revocation of numbers of the Permanent Bureau
Chairman of the session
Approval of Permanent Bureau members
No
Yes
Establishment of the Permanent Bureau
End
The Permanent Bureau is established when at least ¾ of its members have been appointed
Establishment of permanent commissions
Membership of permanent Commissions
Proposal on members of permanent commissions
Approval of members of permanent commissions
No
Yes
Establishment of permanent commissions
End
Approval of the budget for the staff of the Parliament
Development of the Expenditure side of the Budget of the staff of the Parliament
Approval of the Budget of the staff of Parliament
No
Yes
Budget approved
End

5.5.2 Operation of parliamentary factions

Based on analysis made within standing commissions, 3 sub-processes have been identified which, to a great extent, offer an extensive image of the operation of this entity.

1. Work with correspondence;
2. Sessions of the faction;
3. Audiences within faction;

The general scheme of these sub-processes is presented in the Figure below:

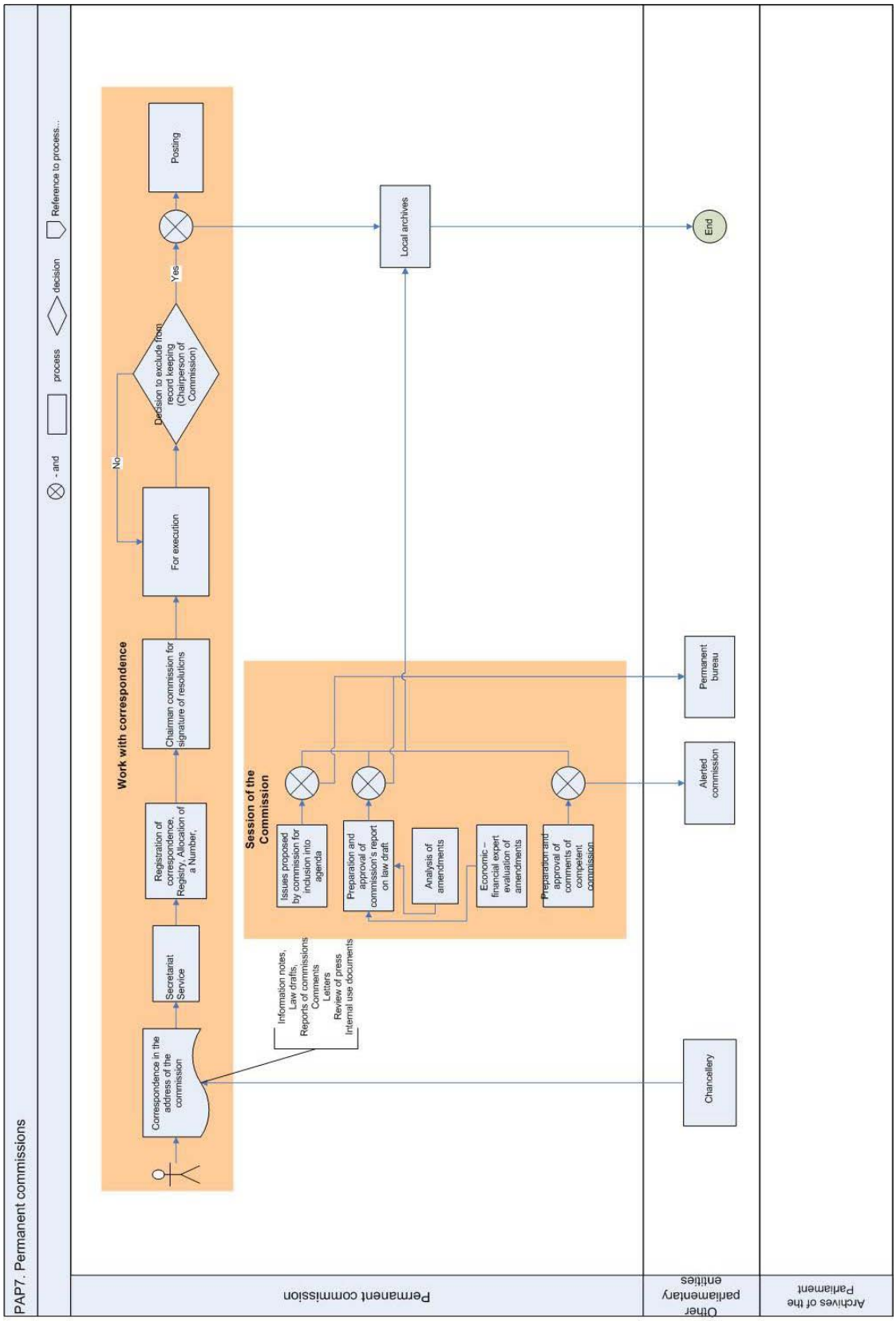

PAP9 Parliamentary factions
- and
- process
- decision
- Reference to process...
Other
Parliamentary factions
Archives of the Parliament
Chancellery
Permanent Bureau
Information notes, Law drafts, reports of Commissions, Comments, Letters, Review of the press, internal use documents
Correspondence in the address of the faction
Secretariat service
Registration of correspondence, Register. Attribution of a number
Chairman of faction for resolution signature
For execution
Decision to exclude from record-keeping (Faction Chairman)
Yes
No
Sending out
Work with correspondence
Start
{sau}
Session of faction
Session of faction
Resolution to include in the agenda
Minutes of the faction session
Start
{or}
Audiences
Application for audience
Development of a 1-month program of audiences
Chairman of faction
Audiences
Outgoing letter
Start
Local archives
End

5.5.3 Operation of standing commissions

Upon analyses carried out within parliamentary factions, 2 basic sub-processes which show to a great extent a detailed image of the operation of this entity were identified:

1. Work with correspondence;
2. Sessions of the commission;

The general scheme of these sub-processes is shown in the Figure below:


PAP7. Permanent commissions
- and
process
decision
Reference to process...
Permanent commission
Other parliamentary entities
Archives of the Parliament
Work with correspondence
Correspondence in the address of the commission
Secretariat Service
Registration of correspondence, Registry, Allocation of a Number,
Chairman commission for signature of resolutions
For execution
No
Decision to exclude from record keeping (Chairperson of Commission)
Yes
Posting
Local archives
End
Session of the Commission
Information notes,
Law drafts,
Reports of commissions
Comments
Letters
Review of press
Internal use documents
Issues proposed by commission for inclusion into agenda
Preparation and approval of commission's report on law draft
Analysis of amendments
Economic – financial expert evaluation of amendments
Preparation and approval of comments of competent commission
Permanent bureau
Alerted commission
Chancellery

6 IT user skills

The importance of staff training of any entity in how to use of computers is continuously growing along with the extension of IT utilization. More and more working processes of organizations and companies are carried out using IT. For this reason, the efficiency of organizations operation is growing, but the dependence of organizations on computers and on IT user skills of the staff is growing as well.

Modern computers, software, communication infrastructure allow rapid and easy generation and editing of documents, offer opportunities to exchange messages, assure rapid and convenient data transmission. The processes that in the "pre-computer era" required weeks and months are now carried out within a few hours using a PC. However, a person who cannot use a personal computer and is not familiar with its operation may not benefit from these advantages.

6.1 IT user skills evaluation

A total of 151 questionnaires were returned by the officials and Members of the Parliament of the Republic of Moldova, 8 of them not filled in.

	Number of questionnaires sent for filling in	Number of filled in questionnaires received	Public servants	Members of Parliament
Committee for legal issues, appointments and immunities	11	11	7	4
Committee for economic policy, budget and finance	21	5	5	0
Committee for national security, defense and public order	16	7	4	3
Committee for foreign policy and European integration	6	6	4	2
Committee for human rights	8	8	3	5
Committee for public administration, environmental protection and territory development	15	2	0	2
Committee for culture, science, education, youth, sports and mass media	3	3	2	1
Committee for agriculture and food industry	2	2	1	1
Committee for social protection,	16	1	0	1

health and family				
Staff of the Chairperson	1	1	1	0
Staff of Vice Chairpersons				
Faction of the Communist Party of the Republic of Moldova	4	6	4	2
Faction "Alliance «Moldova Noastră»(Our Moldova)"				
Faction of the Popular Christian Democratic Party	5	2	2	0
Faction of the Democratic Party of Moldova				
General Director				
Service for press and image	4	4	4	0
Service for information, analyses and forecasts	5	5	5	0
Service for Human Resources	2	0	0	0
Service for petitions and audiences	6	6	6	0
Parliamentary documentation division	42	30	30	0
Administrative division	22	18	18	0
Legal division	22	22	22	0
Division for foreign parliamentary relations	12	12	12	0
Total		**151**	**130**	**21**

Such tests are deemed successful if a minimum of 75% of the maximal number of points have been collected.

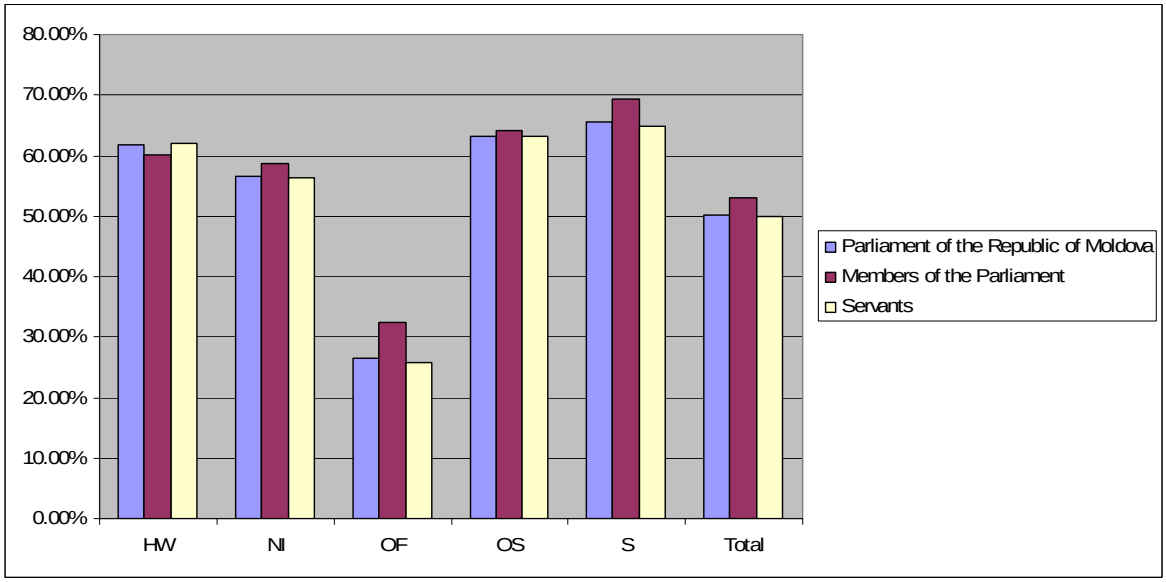
The general result is as follows:

Table 6-1 Results of computer user skills

	Area of knowledge					Common result
	HW	**NI**	**OF**	**OS**	**S**	
Parliament of the Republic of Moldova	**61.72%**	**56.65%**	**26.59%**	**63.29%**	**65.52%**	**50.27%**
Parliamentarians	60.19%	58.73%	32.41%	64.05%	69.44%	52.98%
Officers	61.94%	56.36%	25.77%	63.18%	64.96%	49.88%

Thus, in general the officers and Members of the Parliament of the Republic of Moldova do not accumulate the number of points needed for a successful test result in none of the aspects of the test

Figure 6-1 ***Results of the computer user skill test***



For different Parliament sub-divisions the results are as follows

Figure 6-2 ***Results of the computer user skill test for Parliament subdivisions (1)***

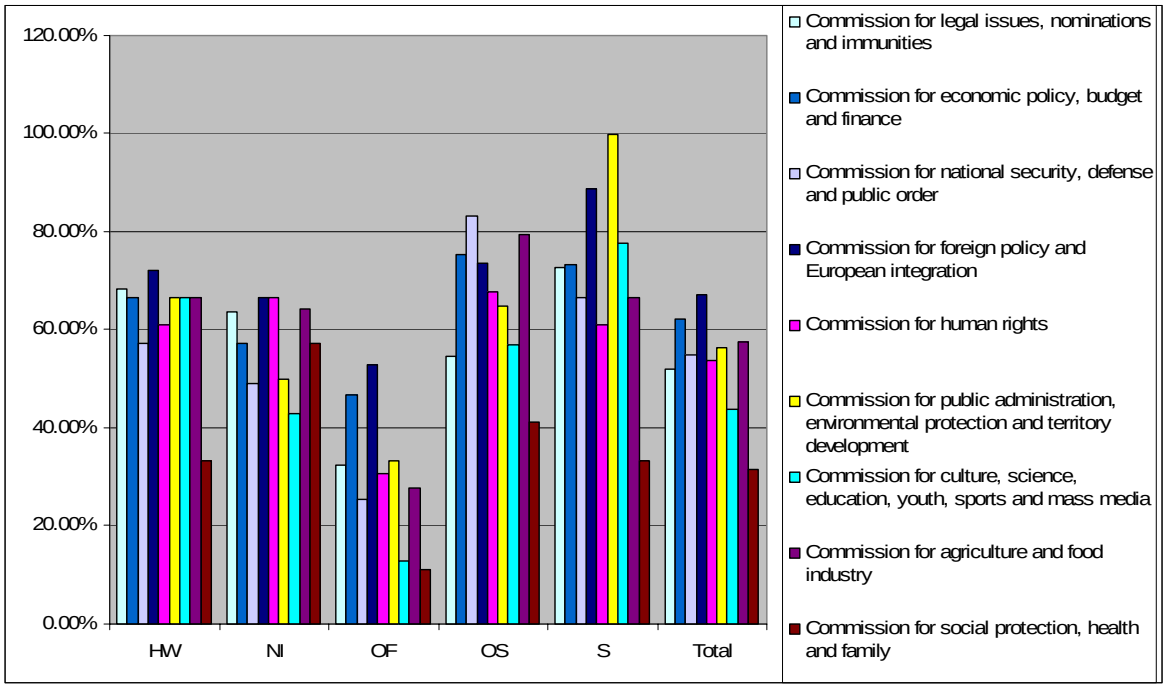
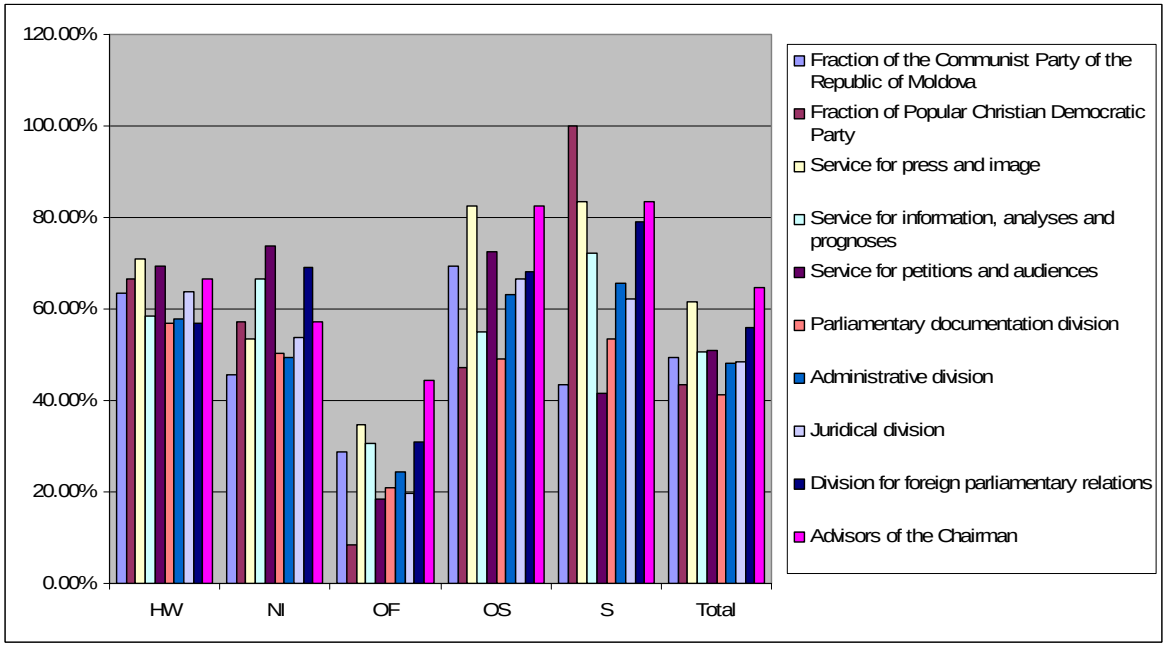
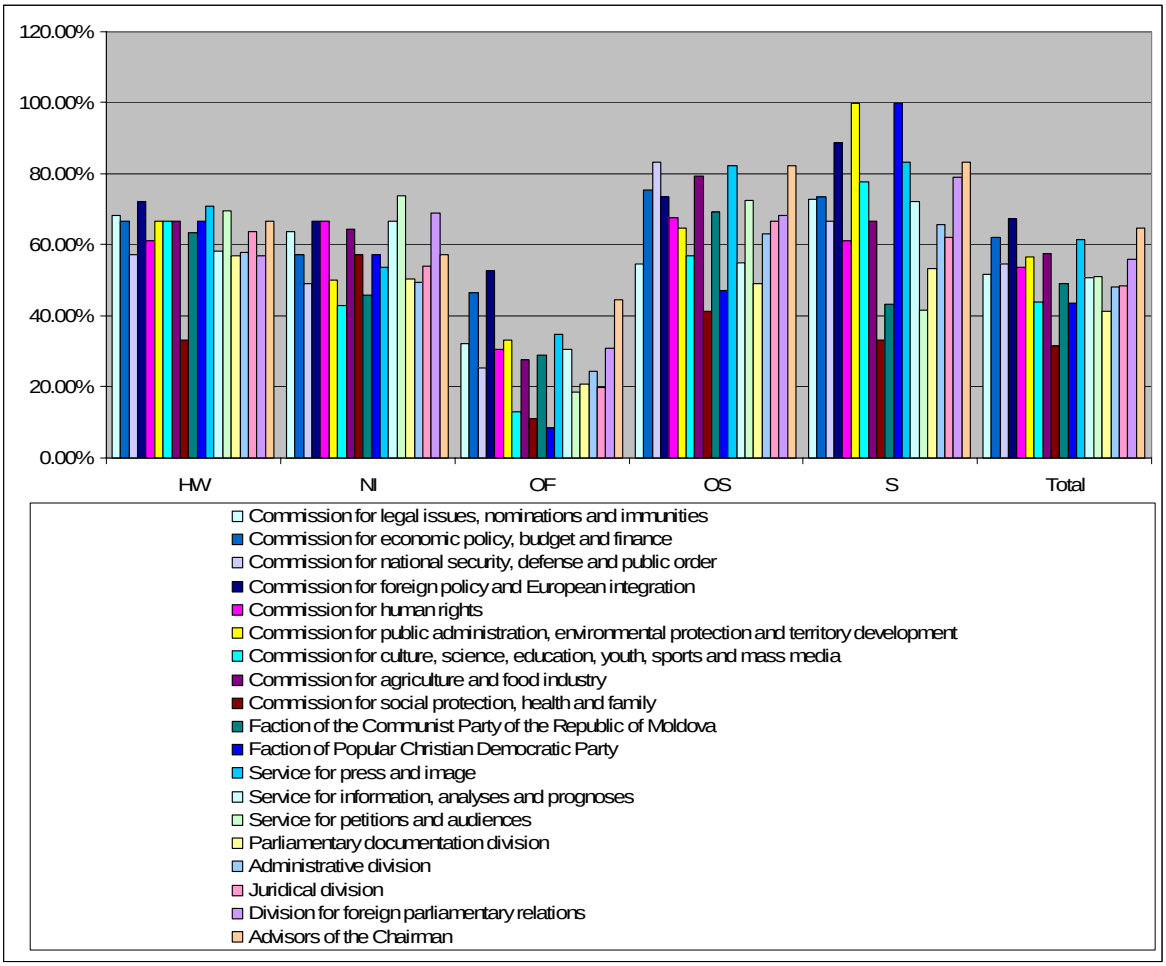


Figure 6-3 ***Results of the computer user skill test for Parliament subdivisions (2)***



The greatest share of correct answers pertains to the aspect “information security” (71.48%), while the officers and Members of the Parliament are the least aware of MS Word and MS Excel (28.94%) applications.

Figure 6-4 ***Results of the computer user skill test for Parliament subdivisions (3)***



6.2 ICT skills of the Members of Parliament

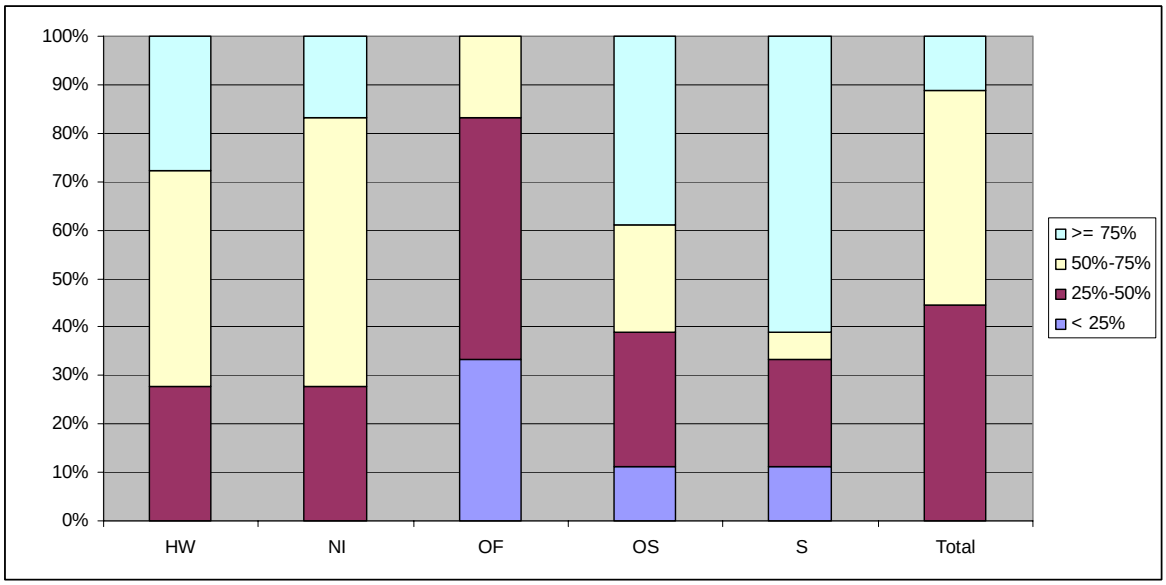
Out of 101 questionnaires provided to Members of Parliament, only 21 were received back, 2 of them being blank. Because the number of analyzed questionnaires was that small, it is difficult to make conclusions on the computer user skills of the parliamentarians.

The table and graph below show the percentage accumulated by the parliamentarians from the test

Table 6-2 Achieved score

Members of Parliament	HW	NI	OF	OS	S	Total
< 25%	0	0	6	2	2	0
25%-50%	6	5	9	6	5	8
50%-75%	8	11	4	4	1	9
>= 75%	**5**	**3**	**0**	**7**	**11**	**2**

Figure 6-5 *Achieved score*



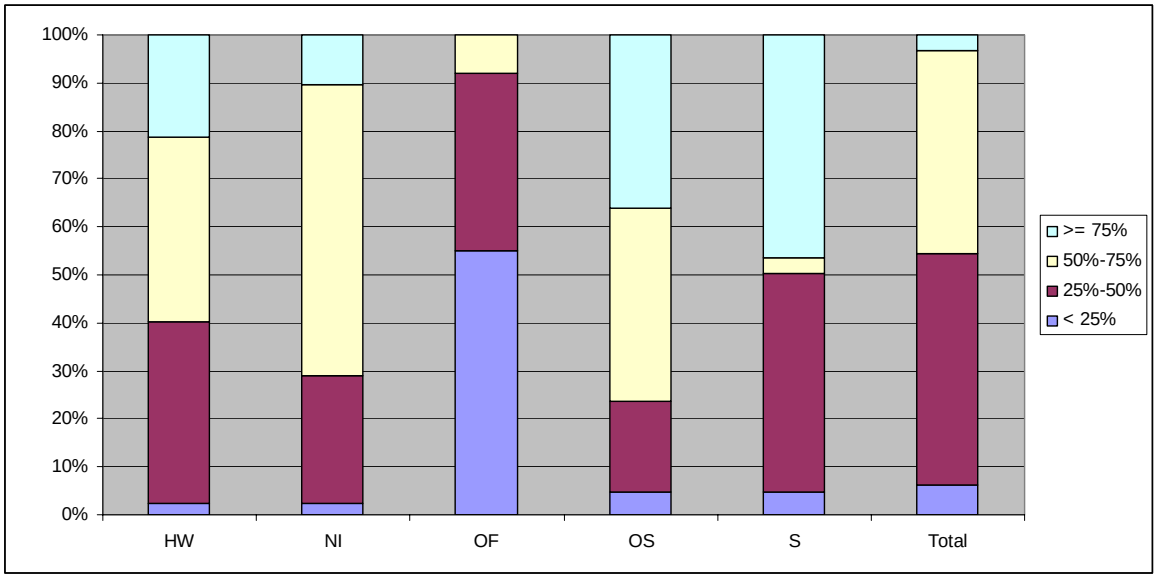
6.3 IT skills of officers

A number of 124 filled in questionnaires were received from officers of the Parliament of the Republic of Moldova out of a total 130 distributed ones. Six were returned blank. The amount of correct answers by area of expertise was as follows:

Table 6-3 Distribution of correct answers by area of expertise

Officers	HW	NI	OF	OS	S	Total
< 25%	3	3	69	6	5	8
25%-50%	47	33	46	23	57	59
50%-75%	48	76	9	50	4	53
>= 75%	**26**	**12**	**0**	**45**	**58**	**4**

Figure 6-6 Distribution of correct answers by area of expertise



Only four of the officers of the Parliament of the Republic of Moldova have correctly answered 75% or more of the questions. None of the officers acquired 75% within the aspect “MS Word and MS Excel Applications”.

7 The Computer System of the Parliament

7.1 Management of IT hardware. Record keeping of assets

There are no policies for record keeping of IT assets within the organization. There is no information on existent IT hardware and its location. There are no people nominated as responsible for the existence and integrity of these assets.

Recommendations:

- To develop regulations on carrying out of inventories comprising the following: members of the inventory commission, objective of the inventory, time of its carrying out, the rights and responsibilities of the commission, the mode for preparing inventory reports and provision of data to the accounting office.
- To include the software and back up hardware in the inventory assets
- To institute an audit of the file that comprises information on record keeping of assets.

7.2 Software applications

The use of IT system is limited to the electronic format of legal acts of the Republic of Moldova "MoldLex" / "Jurist Consultant", a software for record keeping of petitions (Service for petitions and audiences), and applications for accountants.

There are no policies and procedures for managing applications for customers in the organization. There is no classification, determination of groups of applications and no information on whether they correspond to the user groups.

The basic applications for customers used in the organization are as follows:

Table 7-1 Applications for users

Name	Version	Used for	Number of users	Licensing scheme
Microsoft Office	97 2000 2003 XP	Local work with documents, E-mail and tables	214	Not in place
Moldlex Jurist Consultant		Electronic basis of the legislation of the Republic of Moldova	~ 130	Not in place

Lotus Notes		Record keeping of petitions	6	Not in place

User computers that meet minimal requirements regarding hardware have the software applications necessary for routine work both with documents and with E-mail. Microsoft Word is one of these products. It has a set of software that meets the requirements of the institution.

However, the main drawback of the product is its price and rather high requirements to hardware. I paid attention to the fact that only a part of the product's functions are used, such as text editing, work with spreadsheets and with E-mail.

The service for petitions and audiences uses applications based on Lotus Notes product.

Many work stations have software which allows access to the legislation bases of the Republic of Moldova, "MoldLex" or "Jurist Consultant".

All the software has been installed and adjusted manually by the administrator on the local computers which have basic functions and opportunities to change settings by local users. No mechanism or platform exists for centralized installation and management of applications for the users.

When describing the user applications, we did not mention the additional software used on work stations for routine work. It includes products such as WinZip, WinRAR, Adobe Acrobat Reader and other products, a part of them also needing licensing.

Findings:

- Lack of policies and procedures that manage the applications for users
- Incomplete licensing or lack of licenses of software products in use
- Lack of autonomous installation and optimization of Microsoft Office products using Active Directory means
- Diversity of software versions: MS Office 97, 2000, 2003, XP
- The existence of basic software products allows carrying out only a part of the tasks and does not allow exercising control over implementation of tasks, to organize work with documents and, most importantly, optimization of processes.

Recommendations:

- To develop policies and procedures for user applications' regulation
- To identify necessary software groups both for user groups and for individual users
- To obtain licenses for the necessary software packages and sets in compliance with licensing policies of the respective producers
- To create an administrative Office installation package for automated installation on work stations. To prepare settings files for configuring the Office product on work stations

- To make Active Directory settings for software distribution among work stations and for automatic setting of individual products.

7.3 Infrastructure

The IT structure of an institution presents several groups of operational components: hardware – software platforms, local computer, communication and connection networks, as well as secondary engineering systems.

The hardware – software platforms are the servers, the computer equipment and the peripherals, the operational systems and the system software.

The local computer networks consist of active network equipment, modems, means for local networking and remote access, as well as suitable network protocols.

The secondary engineering systems comprise systems for uninterrupted power supply and cabling systems of the respective entity.

When examining the IT structure of the organization, the executing specialists have investigated the architecture and topology of the computer system, its basis and its technical status. The problems of error tolerance were analyzed along with basic security elements.

The study of the server room and of the rest of the computer structure was based on the international standard TIA/EIA 942.

For the analysis of tasks ahead and those carried out in the past, the specialists of the Executor have investigated the architecture and topology, the cabling system, the physical state and equipment in technical rooms, the installed servers, the operating systems and the system applications in use.

The servers for applications and database management, for user applications as well as the computers of the users were studied. An analysis of the local area network of the institution was also made.

7.3.1 Personal computers

In the modern world, more and more information becomes accessible not only in the traditional form, on paper, but also (or only) in electronic format. The electronic information has a number of considerable advantages over the hard copy information: speed of exchange (Internet, E-mail, LAN, WAN), extensive search opportunities (primarily Internet), possibility to work jointly on documents, the convenience of using archives of documents.

However, in order to benefit from these advantages, staff work places need to be equipped with personal computers. Not only the existence of a personal computer matters, but also its quality: an outdated, slow computer will not assist in the work; on the contrary, it could lessen user's desire to use information technologies in his/her work.

In this chapter the existence and quality of personal computers on work stations of the staff and Members of the Parliament of the Republic of Moldova will be considered. We have tried to apply a systemic approach to the problem of personal computers within the Moldovan Parliament and to get a picture about the number of PCs, but also to study their quality features.

7.3.1.1 . Mode of calculation of the indices on PC adequacy within the Parliament of the Republic of Moldova

This study has applied three indices for adequacy: the quantitative, qualitative and the comprehensive indices, which take into consideration both the number of PCs and their quality.

The **quantitative index** is calculated as the number of PCs divided by the number of staff that works for the Parliament of the Republic of Moldova and the Members of Parliament.

Formula 7.3-1 Calculation of the quantitative index

Qty_Ind = CP_QTY / STAFF_QTY,

where

CP_QTI – number of PCs on work stations,

STAFF_QTI – number of staff and parliamentarians

A calculation example for the quantitative evaluation index
The staff of the Parliament of the Republic of Moldova: 293 people. The total number of PCs on work stations is 211. The quantitative evaluation index is calculated as follows: 211/293 = 0.72

The index may have any value from 0 to infinite. The 0 value shows a case where none of the work stations has any computer; the value "1" is possible when the number of PCs equals the number of work stations.

The value of this index which is below 1 shows that not all work places have PCs, thus a part of the staff has no opportunity to use the benefits offered by IT for increasing work efficiency. The ideal value of the index is 1, that is, when all work stations have computers.

The **qualitative index** reflects the technical characteristics of the PC used.

In order to calculate this index for the work stations of the Parliament of the Republic of Moldova, four groups need to be outlined:

1. First generation personal computer – a PC based on Pentium processor, Pentium MMX, Pentium Pro
2. Second generation personal computer – a PC based on Pentium II processor or built on the basis of Celeron processor with Pentium II nucleus
3. Third generation personal computer – a PC based on Pentium III processor or built on the basis of Pentium III nucleus of the Celeron processor.
4. Fourth generation personal computer – a PC based on Pentium IV processor or built on the basis of Pentium IV nucleus of Celeron processor.

The first generation computers are absolutely inadequate for current requirements; only outdated operational systems which are no longer maintained can work with these PCs. Thus modern applications cannot operate on such PCs. The most adequate application for such computers is as electronic typing machine; however problems may emerge in reading the typed texts on other,

more modern PCs. In addition, the maintenance of such computers is difficult due to the fact that it is next to impossible to find spare parts for them.

The second generation computers do not differ in principle from the first generation ones. They have the same drawbacks: low productivity, incompatibility with modern operation systems, and lack of spare parts. The application of second generation computers is a rapid typing machine.

The third generation computers are relatively modern equipment. The modern operating systems and applications work with them, although, possibly, not rapidly enough. Also, it needs to be taken into account that the next generation of operational systems possibly, will no longer work on such PCs.

The fourth generation computers are modern equipment.

Each PC was attributed a number of points as follows: 1 point for a first generation PC, 2 points for a second generation PC, 3 points for a third generation PC and 4 points for a fourth generation PC. General points were calculated for all the PCs located in the Parliament of the Republic of Moldova. The total number of points was then divided by the total number of PCs.

Formula 7.3-2 Calculation of the qualitative evaluation index

Qual_Ind = (Qty1 * 1 + Qty2 * 2 + Qty3 * 3 + Qty4 * 4)/(Qty1 + Qty2 + Qty3 + Qty4),

where: Qt1 – number of first generation PCs

Qt2 – number of second generation PCs

Qt3 – number of third generation PCs

Qt4 – number of fourth generation PCs

Example of index calculation
Total number of PCs on work stations is 211, of them
First generation PCs – 21
Second generation PCs – 26
Third generation PCs – 63
Fourth generation PCs – 101
The average rate is calculated as follows:
*(21*1 + 26*2 + 63*3 + 101*4) / 293 = 2.27*

The index may vary from “1” to “4”. Value “1” means that all PCs in use pertain to first generation of computers; value “4” means that all computers are modern models of fourth generation.

The low value of this index shows that the most of the computers in use are outdated models and their further exploitation will conduct to more problems than benefits.

The ideal value of this index is “4” which would mean that all existent PCs are modern equipment.

The **quantitative – qualitative index** is a combined index and it takes into consideration both the number of PCs and their degree of up-to-dateness

Each PC is given a number of points: 1 point for PCs of first generation, 2 points for PCs of second generation, 3 points for PCs of third generation and 4 points for PCs of fourth generation. Then, a total of points is calculated for all PCs located in the premises of the Parliament of the Republic of Moldova. This total number is then divided by the number of employees of the Parliament of the Republic of Moldova. The average rating obtained in this way is the quantitative – qualitative index of PC equipment on work stations of the Parliament.

Formula 3.3-3. Calculation of the quantitative index

QQ_Ind = (Qty1 * 1 + Qty2 * 2 + Qty3 * 3 + Qty4 * 4)/ STAFF_QTY,

where Qty 1 – number of first generation PCs

Qty 2 - number of second generation PCs

Qty 3 - number of third generation PCs

Qty 4 - number of fourth generation PCs

STAFF_QTY – number of employees

Example for calculation of average index
The total number of employees of the Parliament of the Republic of Moldova (staff and members of the Parliament): 293 people
Total number of PCs on work stations: 211, of them
First generation PCs – 21
Second generation PCs – 26
Third generation PCs – 63
Fourth generation PCs – 101
The value of the index is calculated as follows:
*(21*1 + 26*2 + 63*3 + 101*4) / 293 = 2.27*

The low value of the index means that

- a small number of work places have PCs

or

- the PCs used are outdated models.

The ideal value of this index is 4; it means that all work stations have PCs and the PCs are all modern equipment.

7.3.1.2 Quality and quantity of personal computers on work stations of the Parliament of the Republic of Moldova

In this chapter, the indicators which show the quality and quantity of personal computers on work places in the Parliament are presented on the overall and by structural subdivision.

The quantitative index of equipment for the Parliament is 0.72. This shows that 28 percent of the work stations have no PCs. This index is 0.5 for Members of Parliament and 0.82 for the staff. Half of the parliamentarians have no possibility to use PCs on their work stations and in their activity.

The value of the qualitative index of 3.16 means that on average, according to their technical characteristics, the computers used in the Parliament of the Republic of Moldova are mostly third generation ones. The quality of PCs on work stations of the staff is much lower than the quality of the PCs of the parliamentarians.

The combined index for quantity and quality of computers of the Parliament is 2.28. This means that by far not all work places have modern computers. According to this index, the work stations of the parliamentarians rank lower than those of the staff. The reason for this discrepancy lies in the fact that half of the Members of Parliament do not use computers.

Figure 7-1. Indicator of quality and quantity of PCs

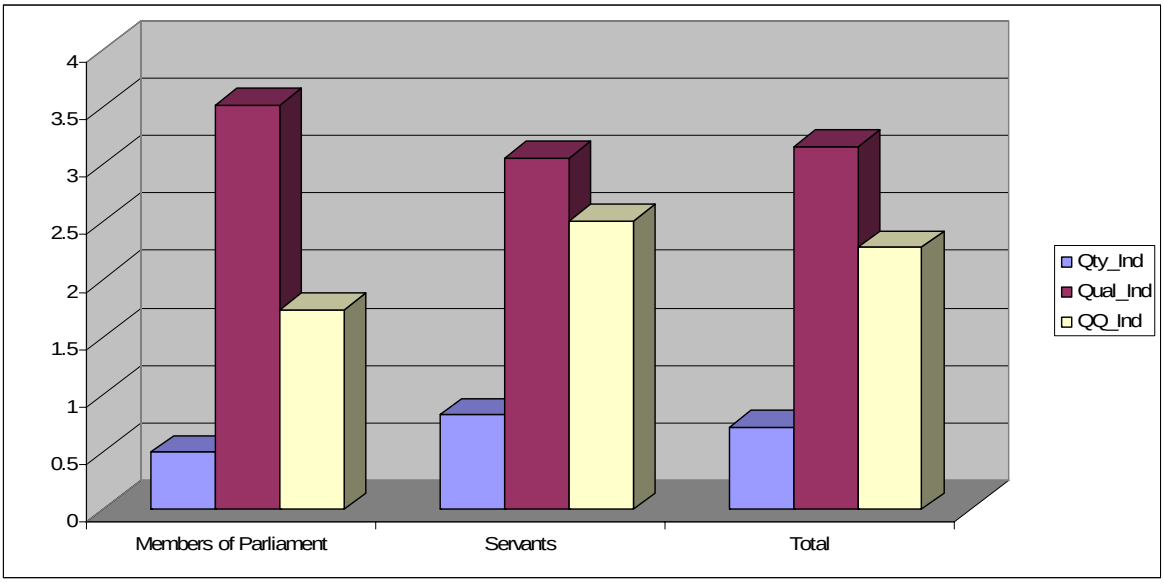


Table 7-2 The Parliament of the Republic of Moldova. General data

Number of staff and members of the Parliament	Number of personal computers	Qty_Ind	Qual_Ind	QQ_Ind
295	214	0.72	3.16	2.28

Table 7-3 The Parliament of the Republic of Moldova, MPs

Number of MPs	Number of personal computers	Qty_Ind	Qual_Ind	QQ_Ind
101	50	0.50	3.52	1.74

Table 7-4. The Parliament of the Republic of Moldova, staff

Number of staff	Number of personal computers	Qty_Ind	Qual_Ind	QQ_Ind
194	160	0.82	3.04	2.51

Note: in addition to the personal computers shown in Table 7-4 there are four third generation PCs which are installed in the library and are for common use.

Figure 7-2 Value of the quantitative index for structural units of the Parliament of the Republic of Moldova

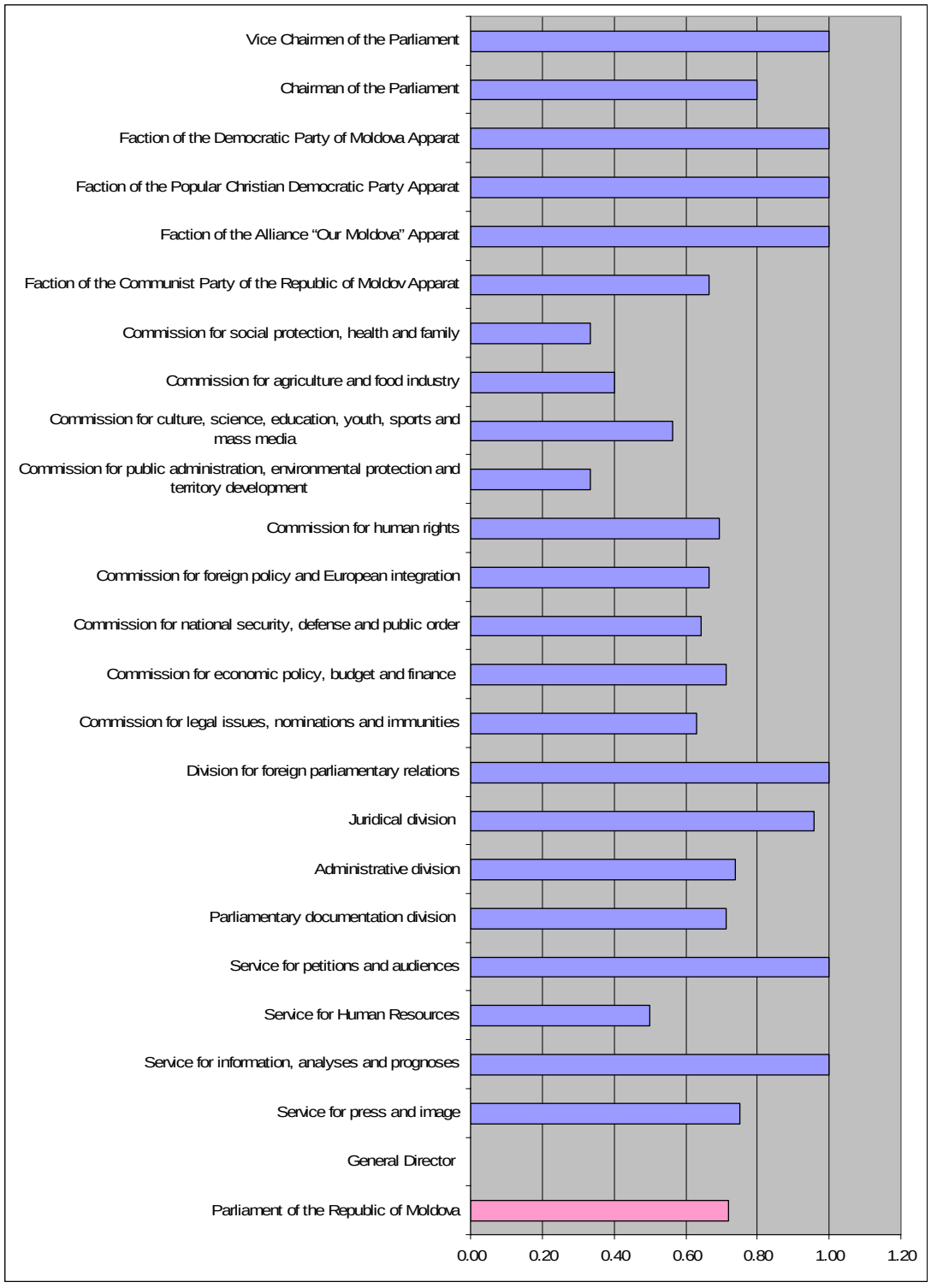


Figure 7-3 Value of the qualitative index of PCs by structural units of the Parliament of the Republic of Moldova

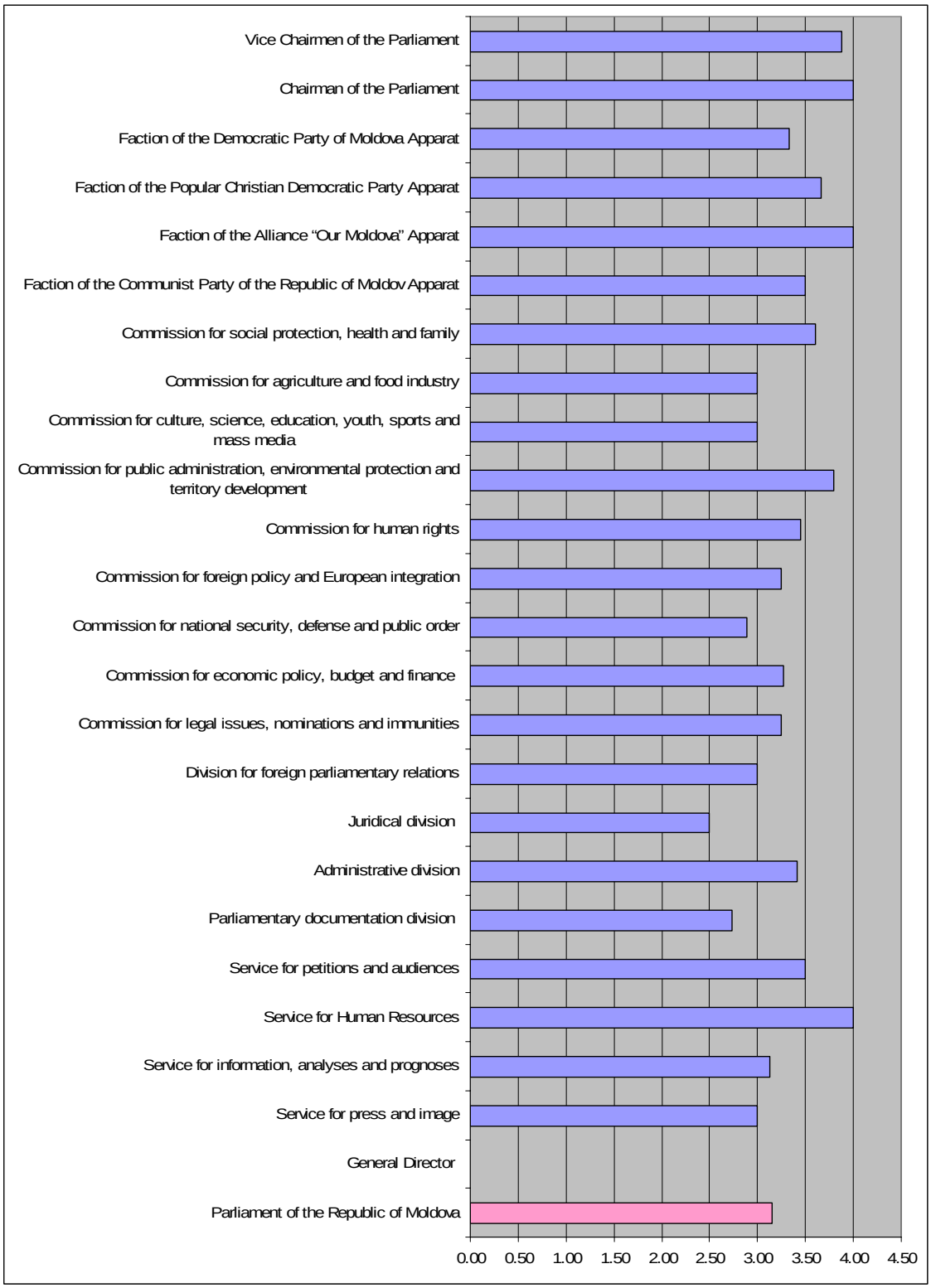
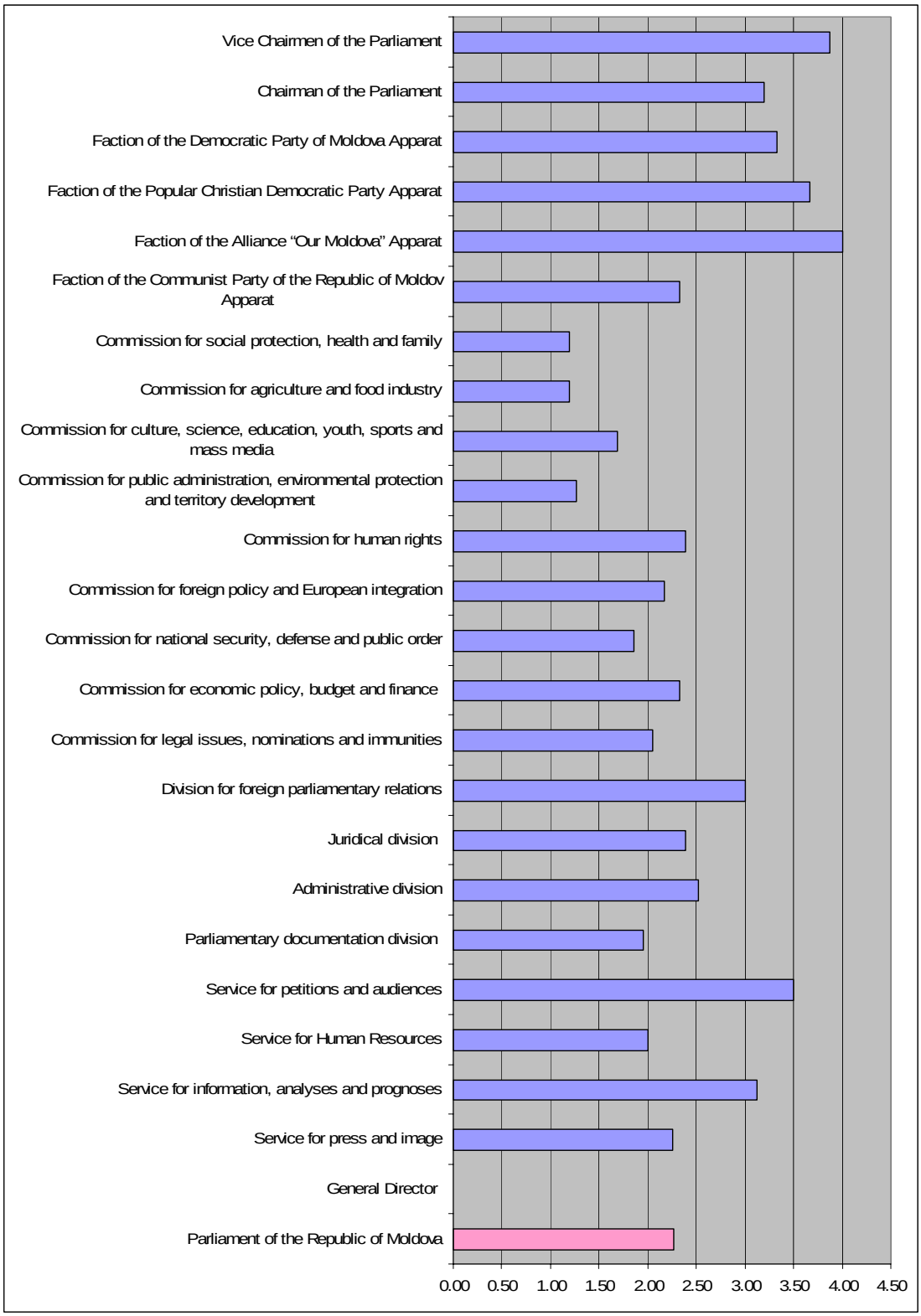


Figure 7-4 Distribution of the quantitative – qualitative evaluation for equipment of work stations with PCs



Findings:

- Not all work stations have PCs: 81 have no PCs
- A large number of PCs are outdated. Up-to-date, there are 20 first generation and 26 second generation PCs in use
- The computers and peripherals are connected in a common power network. There are no dedicated groups of outlets and no systems for overload prevention.

Recommendations:

- To take first and second generation personal computers out of use
- To provide with PCs the work places that don't have them now
- To modify power supply systems for computers and peripherals, to make up dedicated groups and to provide systems for overload protection for them.

The information on quantity and quality of personal computers in Parliament subdivisions can be found in *Annex 5. Personal Computers. Endowment with PCs of the Moldovan Parliament* structures

7.3.2 Software systems

The tasks of PC users in the Parliament of the Republic of Moldova are, with some exceptions, similar. As a rule, the PCs are used for text editing. The number of staff that has responsibilities dealing with processing of complicated graph images or advanced work with web pages that require specific software and have special requirements to software is not large. The similarity of the tasks carried out using computers provides the possibility to reduce labor load and to increase the efficiency of IT staff work through unification of software systems which are used within the organization. Several software systems are easier to maintain, upgrade and manage than a variety of different systems. Currently a multitude of different software systems are installed on the PCs of the Parliament of the Republic of Moldova.

Software system	Number of PCs	Note
Windows 95	6	There are both English and Russian versions
Windows 98	70	There are both English and Russian versions
Windows 2000	55	Different software versions
Windows XP	40	Different versions (XP, XP Pro), different languages (English, Russian, multi-language)

There is no internal standard regulating the software systems to be used. The selection of software is done either at random or because a certain software was purchased along with the computer.

Most of the software systems have no license.

Findings:

- There is no internal standard determining which software systems should be used on work stations
- The number of software systems and their versions is unjustifiably high.
- As a rule, unlicensed software systems are used.

Recommendations:

- To develop a standard determining the software systems to be used and to review it on regular basis
- To maximally unify the software systems in use
- In order to prevent eventual conflicts related to use of unlicensed software copies, the possibility should be considered to use open code software, such as, Linux.

7.3.3 Monitors

Although monitors are not PC components which directly influence the work productivity and speed, their quality is also of some significance. First of all, the quality of the monitor has an impact on the duration of work on a computer which is safe for health, namely for eyesight. Old models of monitors provide a low resolution image with low clarity and low regeneration frequency. All these factors make for the need to take frequent breaks to relax the eyes or otherwise to risk the deterioration of eyesight.

The optimal systems from viewpoint of health security, power consumption, space requirement are liquid crystal display monitors (LCD).

Table 7-5. The Parliament of the Republic of Moldova, monitors

Type (LCD/CRT)	Size (inches diagonally)	Number
LCD	17 and over	8
LCD	15	23
CRT	17 and over	92
CRT	15	70
CRT	14	21

Out of the total number of monitors used in the Parliament of the Republic of Moldova, 21 (CRT 14”) are highly outdated models which are not capable of providing a high quality image. Other 70 monitors (CRT 15”) are also outdated while the image they provide is better than the 14 inch

one, still their quality is low, this making for quick tiring of user's eyes, while extensive work conducts to deterioration of the eyesight. The major part of the monitors is CRT 17". The quality of their work depends much on different factors such as the producer, exploitation term, model. The share of liquid crystal monitors is reduced: 31 out of 214, or 14.5 percent.

Findings: A great number of monitors are outdated, unsafe for the eyesight of the users

Recommendations: To take the outdated monitors out of use, first of all the 21 14-inch CRT ones and then the 70 15-inch CRT monitors.

7.3.4 Printers

As mentioned earlier, the utilization of information technologies achievements provides a number of new opportunities and allows increasing work efficiency. Primarily, these are the result of transition from work with documents printed on paper – to work with electronic files. However, giving up the traditional hard copy format of information will not be possible in the near future. Transition to electronic files within an organization requires prior implementation of a system for electronic flow of documents, while sharing electronic documents with other organizations implies certain legal aspects. Therefore, the devices for extracting information, that is, printers, are, like in earlier periods, an important element of IT infrastructure of any entity. This chapter considers the adequacy of printers within the IT infrastructure of the Parliament of the Republic of Moldova.

7.3.4.1 Calculation method of indices of printer adequacy within the Parliament of the Republic of Moldova

The modern computers may be conventionally divided into groups based on image forming method, existing interfaces, printing speed, according to maximal workload recommended by the producing company.

According to the image forming method, printers are divided into laser, jet ink and matrix printers. There are other types of printers which do not exist at the Parliament of the Republic of Moldova.

The interface existing in the printer conditions the opportunity for the specific printer to be connected to some PCs or to be directly connected to a LAN. The existing interfaces comprise LPT, USB, various types of LAN interfaces. The study paid special attention to the existence of LAN interfaces in printers.

The maximal workload and printing speed condition the possibility and desirability of joint use of a printer. Maximal workload is calculated as the number of pages per month. In case the maximal workload recommended by the producer is exceeded, the wear and tear of mechanical parts of the printer is significantly accelerated which conducts to the deterioration of the whole device. The printing speed is calculated as pages per minute. The higher the printing speed and workload, the greater number of users can use the printer jointly.

The number of printers installed in the Parliament of Republic of Moldova is 102, of them

- 83 laser

- 14 jet ink
- 5 matrix.

A local computer network installed in the Parliament of Republic of Moldova allows sending printing tasks from any computer to any printer. However, it has to be taken into account that currently PC operators can use for printing only those printers that are located closest to them, that is, in the same office. It is also worth considering that some printers refer to the class of personal printers designed for use by one – two users, while others are designed for use by groups of up to 15 – 20 users.

One of the producers of printers, Hewlett – Packard, divides printers into the following classes:

- Personal printer, used as a rule, by one user, but can also be used by a group of up to four people;
- Working group printer, that is used jointly by a group of 5 – 20 people
- Section printer, which is used by a group of 20 people and more.

This definition may be found on the web site:

http://www.hp.com/sbso/solutions/legal/howto/hvprint/understand_it.html?jumpid=reg_R1002_USEN

In order to describe printer adequacy within the Parliament of the Republic of Moldova, the qualifying indicator, which shows the number of people that may jointly use the existing printers, will be used. Thus, if a printer may be used by 1 – 4 people, its indicator is 2, if the number of users is 5 to 20, the indicator equals 12. We will assume that the jet ink and matrix printers, as well as outdated laser printers, may be used by only one person. This is conditioned by such features of the printer, as printing speed. The speed is much lower in jet ink and matrix printers, than in laser ones.

The models of printers used in the Parliament of the Republic of Moldova and their basic characteristics are shown in the Table.

Table 7-6. ***Models of printers***

No.	Model	Image formation mode (Laser, jet ink, matrix)	Maximal workload, pages per month	Printing speed, pages per minute	Interfaces	Indicator
1	HP LaserJet1100	L	7000	8	LPT	2
2	HP LaserJet4L	L	n/a	n/a	LPT	1
3	HP LaserJet1000	L	5000	14	USB	2

4	HP LaserJet1200	L	5000	14	LPT	2
5	HP LaserJet 4P	L	n/a	n/a	LPT	1
6	HP LaserJet 5P	L	n/a	n/a	LPT	1
7	HP LaserJet 5L/6L	L	6000	6	LPT	1
8	HP LaserJet 2200	L	40000	18	LPT, USB, LAN	12
9	HP LaserJet 1300	L	5000	19	LPT, USB, LAN optional	2
10	HP LaserJet 1015	L	4000	14	LPT, USB	2
11	HP LaserJet 4Plus	L	n/a	n/a	LPT, LAN opt	1
12	Cannon LBP 800	L	n/a	n/a	LPT	2
13	Cannon LBP810	L	n/a	n/a	LPT	2
14	Xerox WORKCENTER M118	L	50000	18	LPT, USB, LAN	12
15	Xerox WORKCENTER PRO 412	L		12		12
16	Panasonic KX-FLM533	L				2
17	Xerox DOCUPRINT PBEX	L		8		1
18	HP DeskJet xxx	I				1
19	Epson LX, FX	M				1

Two main indicators shall be determined for any group of users:

- the absolute indicator

- the relative indicator

The absolute indicator is the total number of users that may be serviced by the existing printers.

The relative indicator is the absolute indicator divided by the number of users in a group.

> *Example for calculation of indicators:*
> *A group of ten PC users have access to 3 printers: HP DeskJet 600, XEROX WORKCENTER M118 and Cannon LBP810. According to the indicators of the printers shown in Table 3.5, the absolute indicator of printer adequacy is 1+12+2=15. It means that the existing printers could serve a group of 15 people. The relative indicator is 15/10=1.5 which means that the excess productivity of the printers for the respective group is 50 percent.*

7.3.4.2 Printer adequacy of work stations in the Parliament of the Republic of Moldova

The capacity of the existing printers may meet the requirements to printing of documents by all PC users.

However, this is not true. There are many PC users in the Parliament of the Republic of Moldova that have no possibility to print a document. The reasons for this are as follows:

1. The printers are distributed unevenly and irrationally among Parliament subdivisions
2. The printers are installed in offices that are locked, thus their joint use is difficult.

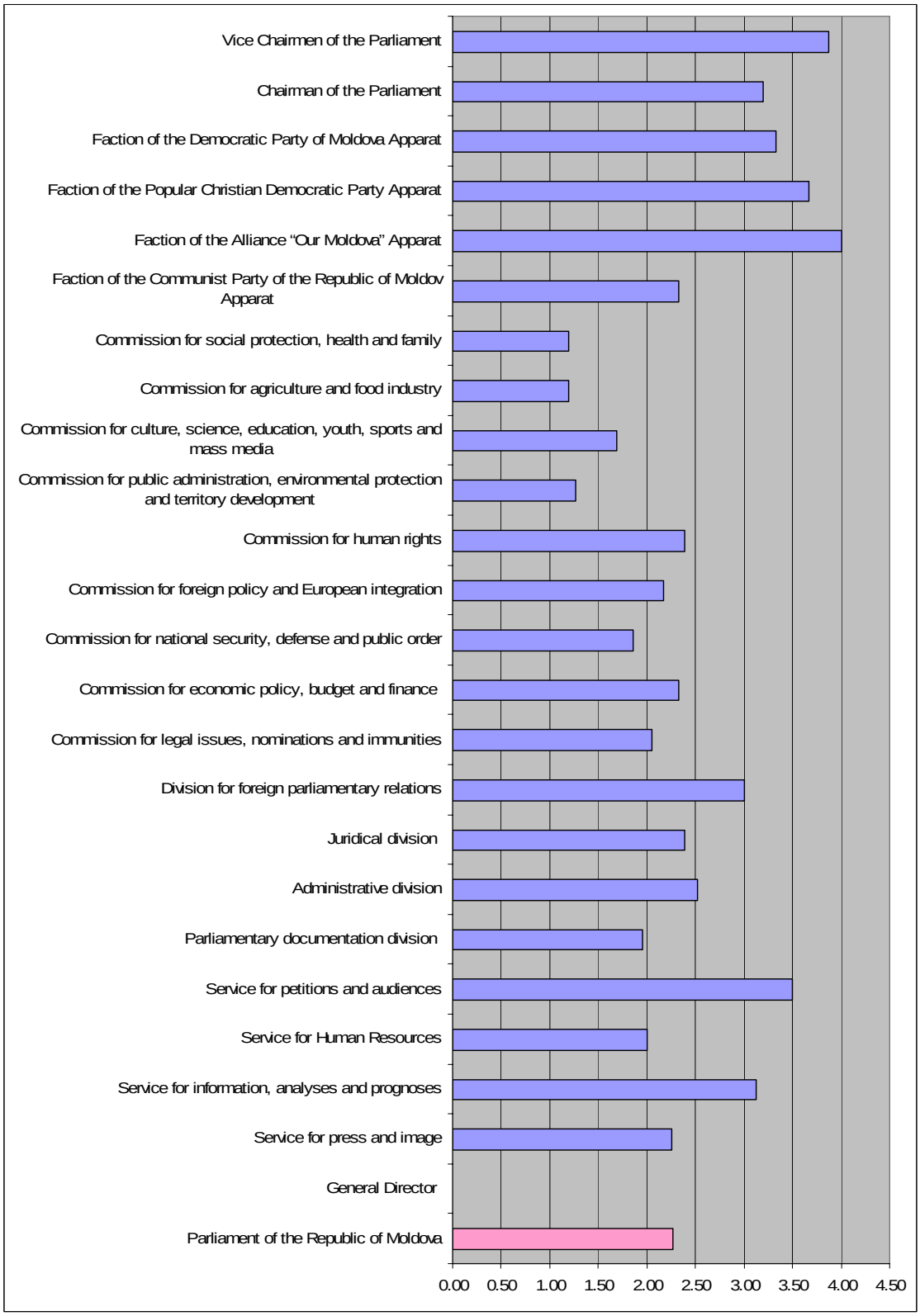
Table 7-7. Indicators of printer adequacy in the Parliament of the Republic of Moldova

Number of PC users	Number of printers	Absolute indicator	Relative indicator
214	102	218	1.02

Figure 7-5. “Printer adequacy of Parliament subdivisions” shows how unevenly the printer capacities are distributed among the subdivisions of the Parliament of the Republic of Moldova. Thus, for example, the staff of the apparatus of the faction of the Communist Party of the Republic of Moldova has 5 printers, of them 1 jet ink and 4 laser ones, including a high capacity printer XEROX WORKCENTER M118, capable of serving 5 to 25 users. As a total these printers could meet the requirements of 19 users, while the staff of the Communist Party of the Republic of Moldova has only 4 PC users. Thus, it appears that the joint capacity of printers used by the apparatus of the faction of the Communist Party of the Republic of Moldova is 4.75 higher than necessary.

At the same time, 5 PC users of the service for press and image have only one jet ink printer HP DeskJet970 with the capacity for just one person. This fact shows that the printer needs of the Service for press and image subdivision are met only at 20 percent.

Figure 7-5. Printer adequacy of Parliament subdivisions



All the printers existent in the Parliament of the Republic of Moldova are installed in rooms that are locked, thus no free access to printers exists. The practice of using high capacity printers in free access zones is not being used in the Parliament of the Republic of Moldova. In such circumstances, users would have difficulties in printing documents even if printer capacities were sufficient. At the time of the survey, a minimum of 44 office rooms had computers but no printers, thus PC users in these rooms had no possibility to print out documents.

The list of office rooms with PCs but no printers is shown in *Annex 6. Printers. Accessibility.*

Findings:

- Existing printer capacities are extremely unevenly distributed among subdivisions
- Joint use of printers is limited to one office; thus existing printer capacities are used in an irrational manner

Recommendations:

- To consider the possibility of a more even distribution of printers. *Table 10.2* in *Annex 6. Printers. Accessibility.* shows the list of office rooms with the relative indicators of their printer adequacy. The table may be used to find out which offices have excess printers and which have insufficient printers.
- To equip work stations with printers. *Table 10.3* in *Annex 6. Printers. Accessibility.* shows data on the number of PC users and number of printers in office rooms of the Parliament of the Republic of Moldova. The data of the table show that at the time of the study an approximate number of 40 printers was needed to assure that all PC users have access to printers.
- To consider the possibility to install printers in free access zones for their joint use. There are a number of advantages in the situation with joint access to printers as compared to the situation with one personal printer for each office: more rational use of printer capacities, a more convenient management, and smaller exploitation costs. The drawbacks include: low convenience for users, high procurement costs. The method for comparison and calculation of various options is shown in *Annex 7. Printers. Rationality of using shared printers.*

7.3.5 Data processing centre, the servers

The data processing centers are one of the key elements of the IT infrastructure in any organization. Such centers concentrate all basic data of the organization, as well as the computer resources for their processing. The infrastructure of the Data Processing Centre includes servers, databases and secondary engineering systems.

The tasks allotted to printers are different and, depending on the established workloads, the servers of the databases, E-mail servers, application servers, Internet servers, servers for files and others, differ as well. Servers' common feature is that they carry out tasks for the whole unit or for a part of it. For example, the server for files comprises information that is used not only by

one person, but by a group (a section, several sections, the whole institution); the internet server ensures access to Internet for the whole institution and so forth. It is in this manner that the importance of servers in the IT infrastructure is determined, along with the increased requirements to their viability and productivity.

During the analysis it was stated that, with some exceptions, the role of servers was played by ordinary personal computers. The data were stored on ordinary disks, while specialized storage capacities were not used.

7.3.5.1 Server equipment, software and applications

Different software systems are used as server software. The table below shows the servers of the institutions and their roles:

Table 7-8. ***The servers used and their roles***

Name of server	Software system	Applications	Role of server
Inet-GW	Solaris	Mail Server Firewall	Internet platform and server for E-mails
Server	Windows 2k	-	File Server
Database	Windows 2k	MySQL Mail subsystem	Database Distribution of internal mail
WebDev	Unix	Web	Web-mastering

The InetGW server was used as Inter server. The Internet work and E-mail services installed on it assures the access to the public network and the exchange of E-mail messages. This server also prevents unauthorized access to the internal network from public networks and allows the users that are outside the premises of the institution to check their correspondence through the Internet network.

Server is used as files server in case of need.

The Database Server is used for storage of web site data, as well as for preparation and sending internal messages and news.

The WebDev Server is used as server for preparing material for the foreign web-site placed with the supplier.

Findings on software and applications of server groups:

- The equipment used as servers, “Server”, “Database”, “WebDev” is not servers, in fact. The role of servers is played by ordinary personal computers with increased capacity through addition of memory and hard disks. These actions have conducted to increase of the equipment productivity but have not contributed to improvement of such features as viability and tolerance to errors which are very important in servers.

- Lack of servers for automated configuration and management of work stations such as Active Directory domain controllers, systems for configuration of network protocols DHCP and DNS.
- Although the work stations in the Parliament of the Republic of Moldova have an approximately similar configuration, which allows making use of the advantages of automated installation services of software for the users, this possibility is not currently used.
- The documentation on the logical structure of the network is lacking.
- The register of critical upgrades of the software systems of servers is not maintained.

Recommendations for improvement of the server group performance

- When possible, the critical server should be replaced with a more viable unit like CISCO PIX or Checkpoint Firewall.
- To renovate server equipment.
- To review the logical scheme for Active Directory utilization and to correctly configure the operation of both the Active Directory basic service, as well as the auxiliary services DNS and DHCP.
- To carry out the analysis of server roles and to distribute roles more correctly among all servers within the network.
- To maintain a control register of all critical upgrades of server software. To show in the register the versions of upgrades, their outgoing data and the date of their installation. For example:

Version Patch	Date of copying	Date of installation on Server 1	Date of installation on Server 2
Ms_sec00135	10/08/2004	12/08/2004	01/09/2004

- To install and set up the system for automated upgrading of software systems.

7.3.6 Organization of data storage process

Within the IT department there exist neither documents setting the policies and procedures for data storage, nor a developed cycle for the life span of information.

The local disks of servers are used for data storage. No storage disks or storage cassettes are used within the institution.

Findings:

- Regulatory documents on data storage organization process within the institution are lacking along with documents on their lifecycle.

- In case a disk deteriorates there is no possibility to solve the problems without interrupting the respective system.
- The existence of architecture limits on increasing data storage capacity, which are imposed by the type of equipment used as servers and by the maximally available number of internal disks.
- It is impossible to increase the data storage space without interrupting the respective system.

Recommendations:

- Develop and approve policies and procedures for regulating the data storage process within the institution. Establish data life cycle.
- Consider the possibility to organize a unique space for data storage.
- Consider the possibility to organize a SAN (Storage Area Network), a network for data storage, where all the data of the institution are to be concentrated and made accessible to different systems, a centralized system for creation of back up copies and rapid recovery copies. Such a decision would allow carrying out actions for solving the problems and increasing the capacities of the institution without interrupting systems and in a manner which is transparent for the users. In addition, such an approach would allow a flexible distribution and re-distribution of resources among systems without their interruption.

7.3.6.1 Technical rooms

Special premises for servers are needed for the efficient operation of the organization because of the critical significance of the servers, data storage devices, central network equipment. The technical rooms (or server rooms) should be equipped with fire alarm systems, ventilation systems and air conditioning systems; special attention should be paid to the power supply system; the access to the technical room should be limited and supervised.

The server system of the Parliament of the Republic of Moldova is installed in a special room dedicated to the equipment, in which central communication equipment is concentrated. The room is approximately 3x5 meters and is a simple working office in which the equipment is placed. The respective room is not prepared for use as server room. The alarm system, fire extinguishing system and access control system are lacking. There are no ventilation and air conditioning systems. The structural cabling for cable systems and dedicated systems for power supply do not exist. The Patch Panels and active network equipment is mounted on open shelves. The server and UPS systems are installed on the window sill over the heating radiator and on desks. There are no fire extinction systems in the room.

The location of servers and communication equipment in one room has a number of **advantages**:

- The major part of the key components of the information – communication system is located in the same room.
- There is a possibility to manage a part of the systems from a unique access site.
- The physical security of the equipment is assured.
- The “cross”, replacement or modernization of the equipment is facilitated.

- The access to equipment is limited and controlled.

However, the technical room used in the ICT structure of the Parliament of the Republic of Moldova has also a number of **deficiencies**.

- The door to the server room has rather simple locks.
- There is no registration system of the staff working in it.
- There is no ventilation or air conditioning system.
- The power supply outlets and the cabling system are not fitted up.

It is recommended to organize the technical room and its equipment according to the TIA/EIA 942 standard. In order to achieve this, the following should be undertaken:

- A complex lock up device shall be installed to assure the physical security of the room. Visits of the respective staff to the technical room should be registered.
- A system for mandatory air conditioning or ventilation should be installed in the room.
- The air isolation of the perimeter of the door should be assured in case forceful ventilation is installed, in order to maintain the operating capacity of the equipment.
- A heat sensor and an alarm system should be installed in the room to check the operation of the air conditioning equipment.
- The power supply system in the server room shall be changed to ensure compliance with the standards for power supply for servers and the power outlets and cables should be marked.
- The system for connection of the server room to the power supply system should be changed and the power supply outlets and cables need to be marked.
- Within the room, the cabling should be stationary with archway curve of the cable, the cable being placed within special raceways mounted on patch panels. This is needed in order to avoid deterioration as well as partial or total tearing of horizontal cables. The horizontal cable is a one-core copper cable installed with rigid insulating material. When such cable is mounted, its structure becomes more rigid with time. Thus, if the cable takes a certain form, any modifications of this form conducts to irreversible changes both of the copper structure and of the insulating material. In current conditions of server room cabling, all cables starting from power outlet and up to the patch panels are mobile. Sooner or later this situation will conduct to some communication problems and it will be impossible to find the exact reason for the problem.
- The manually fabricated patch cords should be replaced with standard patch cords of 5^{th} or higher category with standard 0.5m, 1m and 3m lengths manufactured by producers. These are made from copper multi-core cable covered with flexible insulating material and are connected through a special RJ – 45 type connector with a rubber protector. Such patch cords allow their fixing under a 90^0 angle with no deterioration to the cable structure or insulation. In addition, the patch cords allow up to 300 connections to the ports of the equipment. And, most importantly, with a reduced distance between the two connectors this cable has a much lower resistance than the one-core cable. Thus, in such a way, the problems described in the item above are prevented and no deviations from the minimal 5-category cabling requirements for modern cabling systems are allowed.

- A special cupboard should be mounted for installation of the server equipment.
- Horizontal mains shall be assured from the communication equipment to the servers. The cables should be made of multi-core copper cable RJ – 45 of category 5 or higher with length not exceeding 5 meters.
- A cupboard for servers with manageable UPSs and double surge suppressors. The maximal load shall not exceed 70%.
- Specialized fire protection devices shall be mounted in the room in easily accessible places near the door. The staff shall be trained to use fire extinction devices.
- A register for the so-called monthly cleaning of "forgotten ports", cupboards and equipment should be instituted.

7.3.7 Local Network

The local area network is the basic and exclusive infrastructure for transportation of information, which assures digital data exchange between users, between users and database servers, applications, transfer of tasks to printers, data exchange with Internet service and thus, access to the Internet. The importance of the local network implies strict requirements to its structure and operation. Currently, the standard for large organizations is the so-called Structured Cabling Systems (SCS). The requirements to such systems are included in SCS standard which includes a significant number of the international standards ISO/IEC, ITA, EIA.

The local network of the Parliament of the Republic of Moldova is created based on Ethernet RJ – 45 standard and includes some "star" type by floor formations. Each participant makes up a small group of subscribers and maintains a consecutive connection with switchboards of the server room.

The communication mains is a parallel connection of network connectors of each floor with the connectors of the server room, using UP-Link connection for varying distances and speeds, as well as a high speed optic connection with a remote office which has its own network infrastructure.

To a great extent, the communication equipment does not support the SMNP Protocol, thus it is connector equipment which cannot be managed and has varying speed features. It was stated that there were no specially equipped rooms for maintaining active network equipment. The network equipment is placed, as a rule, within the space between the heat radiator and a fake wall of the anteroom.

The passive network equipment has been provided by different producers, the cabling system has been mounted in breech of recommendations for network cabling elements mounting.

The active networking equipment has been also provided by different producers and has been purchased depending on the needs and needed number of ports.

There is no documentation on the network equipment except for the labels on the connector equipment ports of the server room.

The diagnosis of deficiencies and analysis of network equipment workload is possible only at the network interfaces level of the server system. The diagnosis of deficiencies at the level of subscriber is possible using the method of consecutive exclusion.

Figure 7-6. Network Topology

7.3.7.1 . The conformity of the cabling infrastructure of the Parliament of the Republic of Moldova with the SCS standards

The architecture of the local network of the Parliament of the Republic of Moldova is a version of architecture cabling called “Traditional hierarchic star architecture”.

The hierarchic star standard consists of the central Cross of the system and the main crosses of buildings and the horizontal crosses of the floors. The central cross is connected to the main crosses of buildings through foreign cables. The crosses of floors are connected to the main cross of the building through cables of vertical backbone. In compliance with the requirements of the SCS standard, all nodes have to come from the same producer or to comply with the international certification standard for network equipment. According to the standard, a unique cabling system shall be used for transmission of data, voice and video images.

The central cross of the local network of the Parliament of the Republic of Moldova is situated on the fifth floor of the building.

There are no crosses for each floor.

A cross may be defined as a set of passive equipment consisting of at least one network Patch panel, to which the cables of the network subscribers are rigidly connected. There is also active connector equipment which may be commuted through Patch Cords.

The central cross is connected to crosses of buildings, while the connection of the two elements is done through a plain category 5 cable mounted in the room in breech of the standards for

mounting the cabling systems and with no additional protection of the cable. The connections to the mains are not documented.

Findings:

- The recommendation of SCS standard on use of the same producer for all the passive network equipment is not observed.
- There is no certification of the network structure
- There is no documentation on cabling structure and on passive elements of the network infrastructure system.
- The rules for using one-core mains cable from the Patch Panels to the outlets of the subscribers and of multi-core Patch Cords for connecting the operational zone with subscriber outlets have not been observed.

Conclusion: The cabling system does not comply with SCS standard.

However, compliance with the SCS standard has a number of advantages as compared to simple unstructured cabling systems:

- A unique cabling system is used for transmission of data, voice and video signals;
- Use of universal outlets in the operational zone allows connection of different types of equipment;
- The capital investments are justifiable by long term exploitation and operation of the network;
- Due to the modular structure, one has the possibility to make modifications and to extend the network without changing the whole existing structure;
- Allows simultaneous utilization of different network protocols;
- Does not depend on the technology change and change of equipment provider;
- Uses standard components and materials;
- Allows network management and administration with a minimal number of staff;
- Allows the combination of copper cable with optic fiber cable within the same network.

7.3.7.2 Administration of local area network

The administration of the local network is of great importance for the operation of IT infrastructure of the institution. The tasks of the network administrator include:

- Management of user accounts, creation and deletion of accounts
- Management of resources and services provided by IT structure, space for data storage, printers access to Internet, e-mail etc.
- Management of user access rules to IT structure resources
- Ensuring operation capacity of systems, timely upgrading of software
- Other tasks.

In order to facilitate the work of network administrators, to minimize task implementation time and to decrease errors, more software and operation programs will be developed. In particular, the **Active Directory catalogue service**, which is included in the server software systems of Windows 2000, Windows 2003 will assist the administrator to allocate user access rights to resources and services, to set rights for use of IT structure, to make necessary changes in the multitude of user posts. The **Protocol of dynamic configuration of the DHCP node** assures automated identification of IP addresses and other parameters needed for the operation of the computer in a network. Thus, the possibility to erroneously allocate the same address to several computers, this conducting to the situation when some computers cannot access the network, is excluded.

The basic deficiency in administration of the local network of the Parliament of the Republic of Moldova is that works are carried out manually, not making use of the abovementioned services. As a result, sometimes the network cannot operate properly in some circumstances. Thus, for example, during the examination of the ICT infrastructure of the Parliament conflict situations were identified in relation to IP addresses. Those conflict situations conducted to some computers being unable to logically connect to the network. Such situations would not have occurred if the DHCP service had been used.

The logical structure of the local network is not documented. The rules for building up the network have not been developed.

Recommendations for improvement of the local network administration process:

- Review the logical scheme for use of Active Directory and correct configuration for operation of the basic service of Active Directory, as well as of DNS and DHCP services that accompany it;
- Implement the user authorization system
- Plan the IP space structure. Set and launch the system for automated configuration of the DHCP network protocol.
- Plan and run the system for automated installation of user software systems and programs.
- Develop standard documentation on the network's logical structure.

7.3.8 Connection to Internet

A dedicated high speed line of the state company which provides access services to the public network is used by the organization for connecting to the public network.

As a border protection tool, also called "screen between networks", a separate server with two network interfaces is used, which makes the connection of users of one organization to the public network. Software for reading IP addresses and for catching web related requests of the users is installed on the server. The network users have access to the network upon request and there is no procedure to control this process.

Since the server operates in Solaris system, all programs installed on it are free and distributed by open code. This may conduct to security problems and problems related to the flexibility of

border systems administration. In addition, no systems for classification and prioritization of traffic between the users and **services** are used on the border server and there are no automated systems for control of page contents and no anti-virus control of Internet traffic.

Since information flows are constantly growing, the users receive the greatest part of information through Internet. Virtual Private Networks (VPN) have shown extensive development, which allows users to connect to the local network of their institution from its outside and to access information within the information range of the institution. However, along with the useful information, there is also the so-called **grey** information which is placed in Internet for damaging both some users and whole networks, and which may comprise obscene information or images which are **imposed** on the user. In these conditions, the institution that has access to public networks needs to always use modern border control systems for checking the transmitted information. The modern border control systems have possibilities to connect antivirus systems to control the traffic, receipt and transmission of confidential information or obscene information. Due to application of modern protection actions for local networks, one can create virtual private networks (VPN) which allow users have access to the network, while being outside of it, for instance, at home or in town. All the above listed opportunities maximally increase the security and convenience of network information utilization and provide opportunities for convenient administration of the system for the staff and increase the effectiveness of staff work.

It is recommended:

- To consider the possibility of installing a centralized firewall system, desirably with a back up system for data storage.
- To consider the possibility of installing a system for defense and control of the logical borders of the installation.
- To install a system for catching requests and an antivirus system
- To create a system for traffic statistics.

7.3.9 Organization of the mail

A software program is installed on the border manager server for organizing the exchange of electronic messages between users. The exchange of messages takes place according to the POP3 standard and IMAP 4 protocol. Standard user programs are used for exchanging messages, which are a part of Microsoft Windows and Microsoft Office along with Outlook Express and Microsoft Outlook. When using the e-mail, all messages are extracted on the computers of the users, while the users work with them locally. Currently, the exchange of e-mail messages cannot offer users and administrators flexible and error resistant services. Taking into account the fact that in the modern world the greatest part of the information exchange takes place through electronic systems, it is necessary to provide users with the convenience to access/use information from wherever they may be at a certain time and to assure the security of their information, regardless of the operational capacities of their personal computer. Taking into consideration the constantly growing number of electronic messages and the growing significance of the transmitted information, the organizations/institutions abort the use of standard electronic message exchange systems and apply complex systems for administrating electronic messages such as Microsoft Exchange or Lotus Domino. These systems allow

organizing a complex system for exchange of electronic messages within an institution and they provide the interface for authors of filtering Anti-Spam programs, antivirus programs and programs for checking the contents. An advantage of the complex systems for exchanging electronic messages is the opportunity to centrally store user's correspondence in a unique spot in the server and the possibility to establish several distribution servers in a single access point which provides additional convenience for administration of the system by respective staff.

Recommendations:

- Create and configure a unique server for the Parliament of the Republic of Moldova
- Install an anti-virus system for checking e-mails
- If possible, make for the integration of the server with the network user authorization server
- It is desirable to create a Relay Connection with the server of one or more Internet services providers that have a high level SMTP protocol
- Install secondary e-mail control systems
- Develop a procedure for creating addresses for the staff of the institution upon their recruitment, granting them a username and password for accessing the network
- Regulate the installation of secondary mail servers as needed. Use the IP private address system between the front-end and back servers. Create sub-domain connections between the central e-mail server and those of a lower level
- Create a system for message statistics.

7.4 Elements of information security

The undertaken survey did not have the aim to research the information security system. However, while studying the IT infrastructure, some elements of the security system were paid attention to, namely those that have direct connection with the IT system and are an integral part of the IT system. These elements are: antivirus protection, the backup system and data recovery system, operational monitoring.

7.4.1 Antivirus protection

Among the existing dangers for the integrity, accessibility and confidentiality of information, the viruses are the most widely spread ones. The attacks of viruses are less dangerous than the attacks of hackers aiming at stealing information; however, due to the large number of viruses and the diversity of their access routes within IT systems, it is most probable that the institution may suffer from virus actions. For this reason, the existence of an antivirus protection system is essential for any IT system, irrespective of its size. The approach to the development of the antivirus system should be as serious as for any IT component that affects the operational capacity of the information system. In particular, the actions for anti-virus protection should be

strictly regulated through adequate policies, while the compliance with such policies should be automatically checked.

The IT Department of the Parliament of the Republic of Moldova does not develop policies and procedures for antivirus protection of the information resources. Only partial virus protection is ensured.

For antivirus protection software products of different producers designed for protection of different things are used within the organization. The study showed that some work stations have no antivirus programs.

Daily upgrading of the antivirus off the shelf programs is organized. The control of the antivirus program capacity and its operational state is reactive in nature and is carried out only when problems emerge. Centralized management of anti-virus systems does not exist. The analysis of the antivirus protection status is made by the administrator once per week, as a rule, but no documented reports are made.

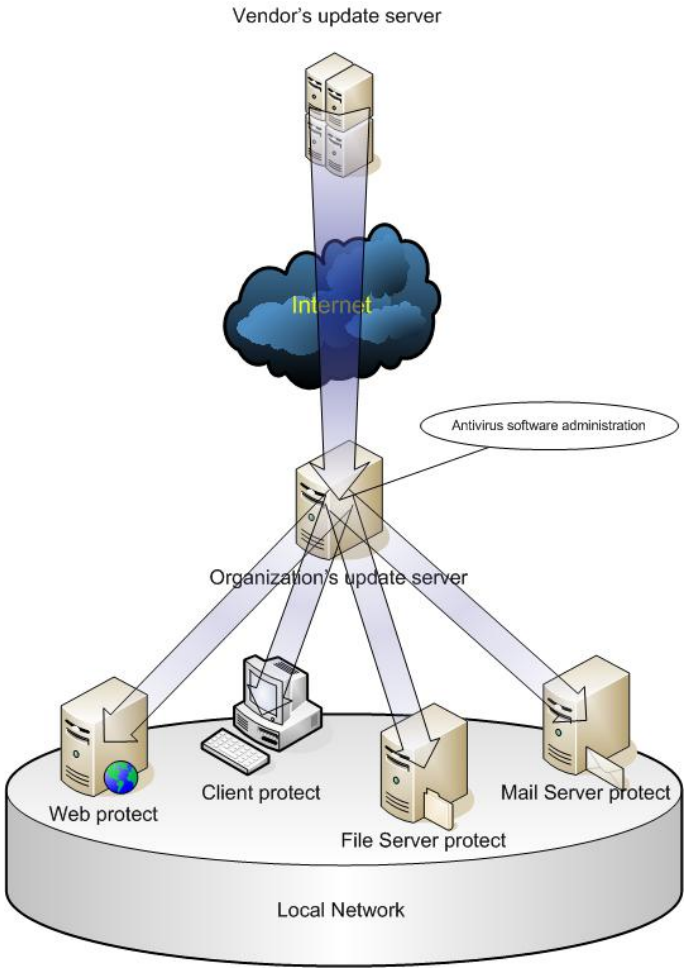
The antivirus protection does not assure sufficient protection. Potentially dangerous zones partially overlap as shown in items below:

2. E-mail services are protected
3. Work stations (floppy disk drive, Internet traffic, removable devices) are unprotected
4. The server systems (possibility for infection while using Internet services directly from the server, infection with “Trojan” type viruses) are unprotected.

Findings:

- A complex system for antivirus protection of the institution is lacking
- Developed and approved policies and procedures for regulating the organization of antivirus protection of the information resources of the institution are missing
- No regular reporting on the antivirus protection status and undertaken activities is made
- No on-line notification is made upon localization of viruses.

Figure 7-7. Recommended scheme for organization of antivirus protection



Recommendations:

- Adequate regulatory procedures need to be developed and approved.
- A sample report needs to be developed for the weekly analysis and reporting of results.
- As far as possible, antivirus programs of one producer should be used. In this way, the IT staff will be able to manage all the components of the antivirus programs from one work station and will have a unique system for collecting statistical data on problems, infections or up-dating.
- Many antivirus software program producers update them using the so-called "Pattern file". The respective tool makes it possible to update the server module through Internet while the other modules may be updated through the local network as shown in the figure above.
- The notifications on virus attacks or deficiencies in the operating system should be sent to system administrators on-line. In case the virus attack is located, the frequency of

analysis and reports should be increased until the respective problem is solved and a normal working regime is re-established.

7.4.2 Recovery and backup.

Regular backup copying is in most cases a guarantee of a continuous operation of the IT service, and, thus, of the whole organization. The deficiency of any element of the equipment may conduct to cessation of server's operation, while the loss of information would lead to even worse consequences. The recovery of information by entering it into computers manually could take several days or even weeks. The backup copy of operational data that has been done in a correct and systematic manner, guarantees continuous operation of the IT and allows avoiding long periods of inactivity. Depending on the requirements to accessibility and up-to-dateness of the information, various backup schemes are employed; some guarantee that maximal suspension time of the IT system would not exceed several hours while the recovered data would be the ones saved maximally during 24 hours prior to the failure of the system; others guarantee a suspension time of several minutes and complete up-to-dateness of data. The selection of the backup system shall be made depending on data accessibility requirements and costs of backup system.

The main **Finding** on backup copying within the ICT system of the Parliament of the Republic of Moldova is that currently it is not done regularly and there is no policy regulating the backup copying procedure.

Recommendations:

- A backup copying policy should be developed
- The documentation on backup copying and procedures for data recovery should be created
- A periodic review of documents should be carried out
- It is desirable to have a server for backup copying management. The necessary space should be found for storage of data on disks with an opportunity to extend such space
- Utilities should be developed for automated notification of the administrator on status of backup copying and errors that occur within the process, or specialized software products such as Amanda, Data Protector, Net Backup should be used
- The monitoring of the files systems which are backup copied shall be made to prevent their overloading
- In case no standard software is used, the list of copied files should be maintained
- Regular control of the data supports status and recovery of systems shall be made
- The monitoring, storage and analysis of entries on the time needed for making backup copies and recovery shall be made. The copies of software system status shall be stored for the most important systems

7.4.3 Operative monitoring

The operative monitoring of the key elements of ICT infrastructure is one of the means that allows carrying out the control of a system's status, to plan beforehand the actions required according to the changes needed in the system, to anticipate problems prior to their emergence. For example, the monitoring of the data storage space on the server makes it possible to identify the need for installing additional hard disks, prior to the moment when no space is left on the existing disks. Thus, operational monitoring is an excellent tool for improving the quality of IT services and their continuity. Currently, there are a multitude of products in the world that assure operational monitoring. The respective products provide different opportunities in respect to monitored items (servers, active network equipment, notification means (local network, e-mail, SMS, etc.)).

There are no active monitoring processes within the IT structure of the Parliament of the Republic of Moldova which are regulated by certain documents. The operational monitoring of the systems is carried out using the means incorporated in the operational systems Windows Performance Monitor and in ICPM (ping) packages in case of problems. The supervision is made only at the initiative of system administrators and there are neither approved monitoring indicators, nor target values for them, nor planned control points and thresholds. There are no systems for notifying the administrator on long-term violation or overloading of different components of the information system.

Main findings:

- Documented regulation of the monitoring processes is lacking
- There are neither specified key productivity indicators, nor target values for such indicators
- No generation of messages takes place in case of some problems. Only a visual check-up is carried out.
- No periodic reporting is made on productivity status of systems
- There is no specialized platform for centralized monitoring.

Recommendations:

- The policy and procedure for monitoring organization's systems should be developed and approved.
- The general and individual key indicators and their thresholds for different systems should be determined.
- Regular reporting systems' productivity should be established.
- Notification regimes (E-mail, SMS) of the administrator should be configured, using, whenever possible, standard tools or a specialized program.
- The possibility to create a specialized platform for organizing centralized monitoring of systems should be considered.

8 The web site of the Parliament

Internet resources are a mass information tool for the citizens. The accessibility, coverage and simplicity of internet use and of services based on web technologies are an advantage for their utilization for citizens' information. It is for these reasons that the presence of the Parliament of the Republic of Moldova on the Internet is an advantage for improving the relationships with the citizens of the country.

The web page of the Parliament of the Republic of Moldova may be used for information purposes, both by internal users, such as Members of Parliament and its staff, and other public authorities.

8.1 The Parliament of the Republic of Moldova on the Internet

The responses to the questionnaire have shown that the presence of the Parliament of the Republic of Moldova on the Internet is unsatisfactory.

Findings:

- Not all documents and information produced by the Parliament of the Republic of Moldova are published
- The lifecycle of a document or draft cannot be traced
- Documents are not published on the web page in a portable format
- A large part of the published documents are not fully published
- There is very little information on MPs, political parties, committees on the web page of the Parliament
- The web page does not comply with accessibility standards
- The web page does not comprise multimedia shorthand reports (audio, video)
- No translation of contents and documents is provided in languages spoken in the country or in foreign languages.

Recommendations:

- The web page of the Parliament should develop along with the development of web technologies
- All produced documents should be provided in their full version
- The web page should be reorganized to facilitate information search and documents' downloading
- Translations in spoken and foreign languages should be provided
- The web page should comply with accessibility standards.

8.1.1 Contents

Findings

- The lifecycle of a project cannot be viewed
- Not all the documents produced by the entity are provided
- Very few documents have explanatory notes
- The text of a great number of draft laws, legal initiatives etc. is missing
- Working papers of commissions are not published
- A great number of documents have no contents, just the title
- The regulation on the staff is not published
- The shorthand reports of the sessions of the Committees are not published
- There is no translation to spoken languages
- There is no translation to foreign languages
- The size of the documents is not shown
- The text, except for draft laws, has no diacritic characters
- Documents are presented in DOC format
- The format of the documents is not portable
- The references to view documents are erroneous
- No multimedia (audio, video) information from plenary sessions is provided
- There is no contact data of the Members of Parliament

Recommendations:

- All the information related to law making activity should be placed on the web page
- Reports, shorthand reports on the work of parliamentary Committees should be included
- Biographic data, data on political affiliation and involvement and contact data for each Member of Parliament should be included
- All draft laws, laws, resolutions, motions should be included as full text
- Explanatory notes should be provided
- A description of the law making process should be provided
- A description of the electoral process should be provided
- Translation to spoken languages should be provided
- The Regulations on the staff of the Parliament should be published
- The documents should be provided in HTML or PDF format
- Multimedia information (in audio or video format) should be included if not in full amount, at least for the most significant events

- On-line transmission of plenary sessions should be made accessible
- The mode of subscription to news through the web page should be organized and announced
- The procedure for accreditation of a reporter should be described
- There should be an option for placing on-line an appeal, a petition, a request for information
- The possibility of public polls on-line should be developed

8.1.2 Organization

Findings:

- It is not shown how the information of the site could be used
- The search tools are very simple
- The mode of using the search tools is not described
- There is no map of the site
- There are no index tables or subjects.

Recommendations:

- The map of the web page should be developed
- The mode of using the information on the web site should be explained
- A description of the search tools should be provided
- The documents referring to one draft law should be presented through only one page showing the lifecycle of the draft law, adoption terms, amendments, initiatives referring to it, etc.
- The contact data for requesting information should be shown along with the information on problems or errors on the web site.

8.1.3 Navigation and utilization

Findings:

- Documents have no links through references
- Only a part of the large documents have contents.

Recommendations:

- The preferred format of documents should be HTML
- The documents that have references to other documents or to other web sites should be connected by hyperlinks
- All large documents should include contents and index tables
- If the format of the document allows using contents (HTML, PDF, DOC formats) the contents should be made accessible for use.

8.1.4 Accessibility

Findings:

- The web site complies only partially with the W3C accessibility standards
- There is no "text only" version for use by persons with limited access to Internet, with limited access speed or handicapped persons.
- There is no printout version of pages
- There is no WAP version for mobile phone Internet.

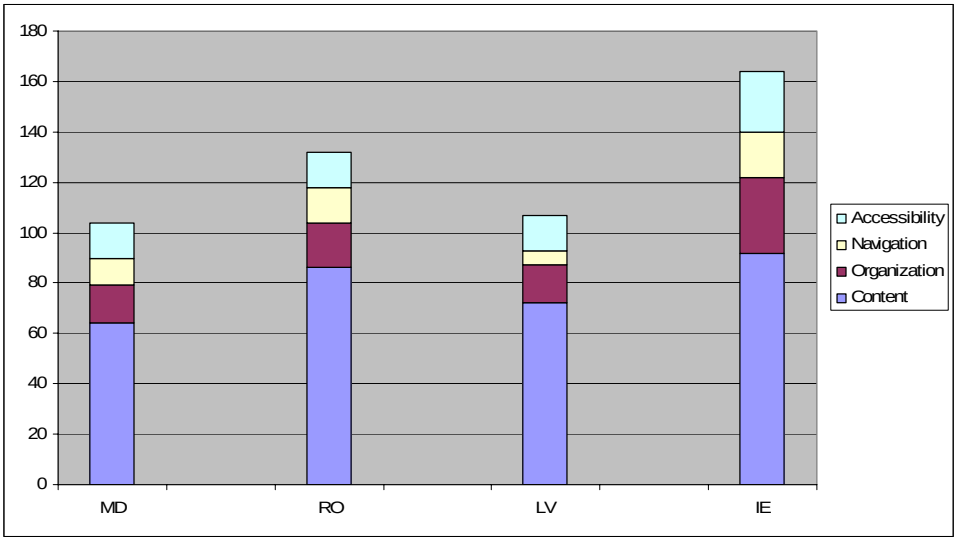
Recommendations:

- The web page should maximally comply with W3C requirements. A "light" or "text only" version should be developed for persons with limited access to Internet, with limited access speed or handicapped persons, to facilitate navigation for them
- Wherever possible, the printout version should show directly on the web page

8.2 Results of Comparative evaluation

The results of the questionnaire showed that the presence of the Parliament of the Republic of Moldova on Internet is unsatisfactory as compared to other similar resources.

Figure 8-1. Results of Comparative evaluation

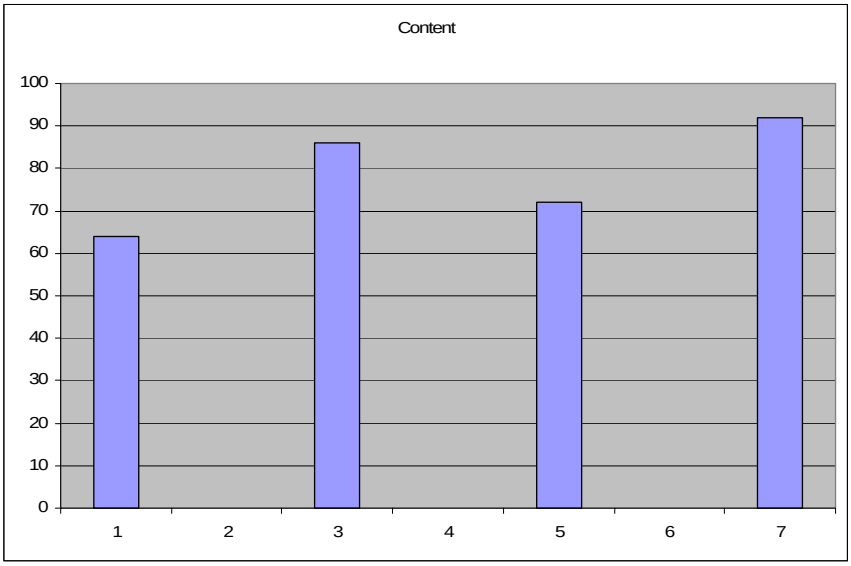


8.2.1 Contents

As far as the Contents are concerned, a comparative study showed that the web pages of the Parliament of Ireland and Romania are the best. The sites show the largest coverage of the law making process. They include the explanation of the process, the structure of the Parliament, small biographies of the Members of Parliament, their affiliation, files on draft laws, audio and video shorthand reports, and on-line transmission of sessions.

A good example of presentation of a legal document is provided by the web page of the law making authority of Ireland.

Figure 8-2. Contents



Each draft law is presented with explanatory notes, references to all statuses of the document in any entity with references to shorthand reports of sessions in which it was debated.

All legal documents are presented in two languages in HTML format with references to other documents if such references exist in the document. This facilitates navigation from one document to another through hyperlinks.

There are special components of the web site which show contact data of the parliamentarians and of persons responsible for the web site, with answers to the most frequently asked questions.

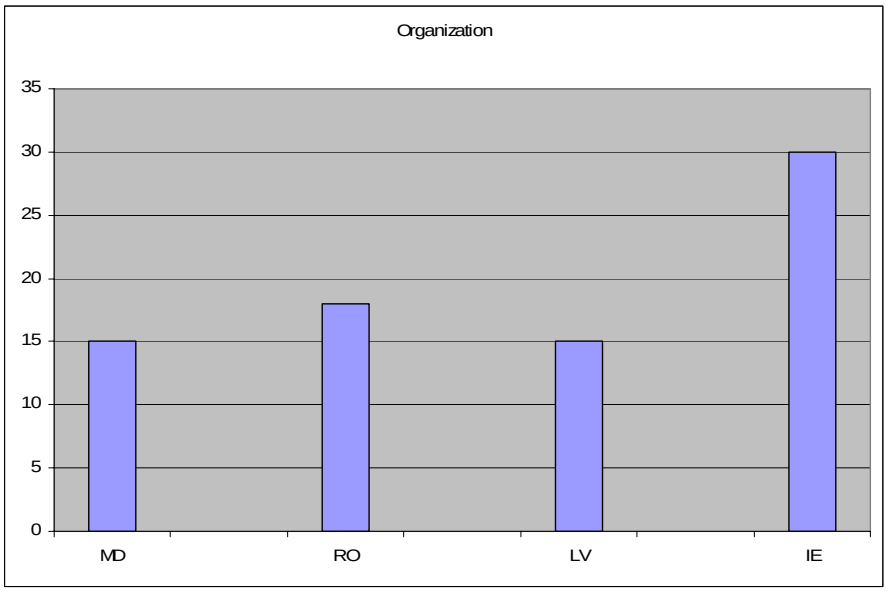
The Irish web site also allows subscription to news or changes on the page using RSS services.

The web pages of the Parliament of the Republic of Moldova, Romania and Latvia have minimal or no translation of documents or contents.

8.2.2 Organization

As far as organization is concerned, the web site of the legislative authority of Ireland may be referred to as a model for organizing documents.

Figure 8-3. Organization



The web page of the legislative authority of Ireland shows documents in chronologic order, numerical order or alphabetical order, which greatly facilitates the search of a document by title.

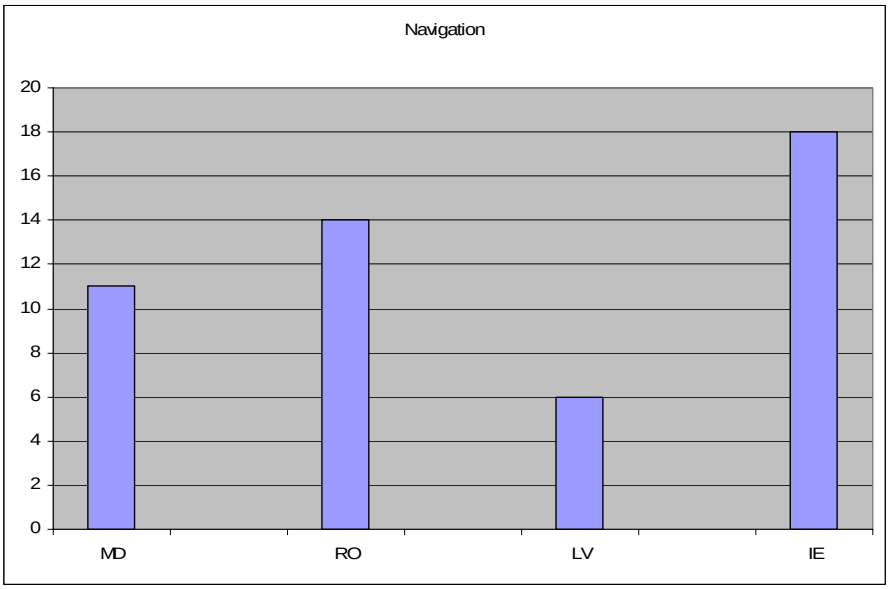
The most reliable search tools are used in web pages of Romania and Ireland. Only the web page of the legislative body of Ireland has a map of the site and an index table.

8.2.3 Navigation and utilization

The most easily and intuitively navigated are the web pages of legislative authorities of the Republic of Moldova, Romania and Ireland.

The page of the legislative authority of Latvia has an essential deficiency. When navigating, new windows are being opened on the viewing program, the documents are presented in HTML format, while the benefits of this format are not made use of. No contents are provided. The documents are not linked through references.

Figure 8-4. Navigation and utilization



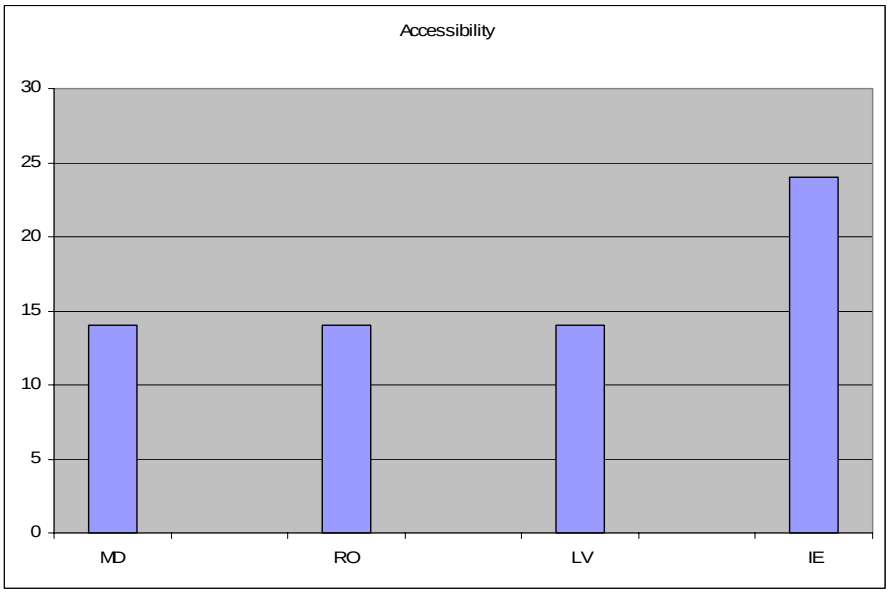
8.2.4 Accessibility

The web pages of the legislative authorities of the Republic of Moldova, Romania and Latvia do not differ from accessibility viewpoints, all having the same deficiencies.

Out of the studied pages, only the web page of the legislative body of Ireland complies with the W3C accessibility standard and has text versions.

It is worth mentioning that the Irish page has also a WAP version, that is, a version for access through mobile telephones and the possibility to print straight from the web page.

Figure 8-5. Accessibility



9 Recommendations

This section sets forth recommendations related to the development of an advanced Information and Communication Technologies (ICT) structure for the Parliament of the Republic of Moldova. Recommendations that were the result of the survey comprise areas regarding: information flows and fitting the current use of ICT into functional processes at different levels, ICT skills, further optimization and development of ICT infrastructure, security issues and approximate estimate of costs that would ensure an optimum re-design of ICT systems and processes. These areas will be considered while developing the Concept of the new Information System of the Parliament.

The study did not aim at analyzing IT management practices, organizational structure, job descriptions and staff motivation. These areas will also be considered at Concept development.

9.1 Organizational recommendations

Nowadays, the role of information technologies (IT) has increased. From an ancillary tool, IT turned into a factor that determines the success and efficiency of an institution's activity. At the same time, the importance of IT structures administration has increased.

Short term and strategic planning of IT development, establishing the architecture of IT systems, selecting technologies, managing IT budget, asset management, ensuring the daily activity of information systems, change and accidents management, users support are some of the tasks of IT department managers.

This project did not aim at assessing Parliament IT system management, although certain observations were made on the basis of which certain recommendations were formulated. An important observation regarding Parliament IT infrastructure management was that it did not manifest itself in any way.

- From the very beginning, a Concept of ICT use in the Moldovan Parliament will have to be defined. That will include the goal and tasks of the target information system that need to be developed, its architecture and standards. The concept will lead to the creation and approval of short and long- term development programs, as well as tasks, responsibilities, resources and execution control.
- Creation of a department within Parliament Apparatus with necessary authority to ensure the daily functioning of IT infrastructure, development and accountability for the implementation of these tasks. While creating such a structure, "successful practices" should be taken into account, as well as standards set forth in ITIL, ITSM, COBiT.
- Implementing assets management through IT
- Organizing the management of IT infrastructure structural changes
- Organizing accidents management
- Formalizing users' support process

9.2 Information flows and processes

A key element that would regulate organization's activity is the existence of documents, regulations that specify these areas. In order to optimize and enhance the efficiency of processes that are taking place in the Parliament, it is recommended to:

- Complete and approve the Regulations of Parliament's structures that are currently at the draft stage.
- Create documents, procedures and policies related to working with information. For instance, the regulation regarding information security, policies and procedures for using electronic resources (e-mail, Internet, files, information from the local archive and that of the Parliament, etc.).
- Implement a single system of managing and processing documents that would allow for the automation of identified processes, ensure joint activity both internally and with other structures of public administration, non-government organizations, and civil society. Maintenance of an electronic archive. Requirements towards the functionality of such a system are provided in Annex 4. The recommended scheme of automating documents circulation.
- Implement a system of electronic voting.
- Unify library resources from the Parliament in a single electronic library that would offer a large array of services, such as: electronic catalogue, on-line subscriptions, public access to catalogues, intra-library exchange.

9.3 ICT skills

Computer knowledge of Parliament employees and MPs, and skills to use computers are not sufficient if IT is to be extensively used in the course of their work. It is recommended to take action aimed at increasing employees and MPs computer skills. First of all, this is important for the employees, since they have the obligation to ensure conditions for an efficient activity of MPs. Collecting necessary information for decision making by MPs, providing complete and accurate information, its timely and handy provision – all of that is part of employees' responsibilities. IT areas where skills were at their lowest levels were as follows:

- MS Office products
- Networks and Internet
- Hardware

Attention should be also paid to skills regarding operating systems.

9.4 Infrastructure

9.4.1 Personal computers

Currently, not all work places in the Moldovan Parliament have personal computers. An important part of PCs are outdated. At the same time, once IT started to be extensively used, a personal computer has become an element of the workplace just as important as the pen and

paper. All workplaces of employees and MPs involved in the decision making process should have personal computers. To this end, it is recommended to:

- Decommission all personal computers based on Pentium II processors and older.
- Provide personal computers to employees and MPs involved in the decision making process and other key processes.
- Optimize purchase and operation costs of personal computers, one will aim at purchasing same type PCs, assembled by international companies, like, IBM, Hewlett-Packard, Dell and other, it is desired that purchase is made in large lots, and PCs have a long warranty period.
- The lot of PCs should be regularly renewed so that outdated PCs are decommissioned.

9.4.2 Operating systems and client applications

As a result of research made it was found that the institution uses concurrently various versions of operating systems, client programs and applications. Personal computers operate on Windows 95, Windows 98, Windows 2000, Windows XP systems. Equally, different versions of MS Office package are used: MS Office 97, MS Office 2000, MS Office 2003, MS Office XP.

Some workstations have program packages to work with PDF files, and these package programs have various versions: Acrobat reader 4, Acrobat reader 5, Acrobat Professional.

In such circumstances, the IT administrator has a difficult task to ensure the functioning of a large number of various program packages. Moreover, different versions of software sets are not fully compatible among them: as a result, it may happen that documents created on a computer could not be used on a different one.

Moldovan Parliament IT infrastructure does not fully comply with the licensing norms of software in place. In some cases, foreign software programs were identified on working stations, in particular, games.

It is recommended:

- To unify operating systems and applications.
- To determine program packages groups necessary both for user groups and individual users.
- To license necessary packages or sets of programs packages in accordance with producers' licensing policy.
- To create an administrative Office package to be installed on work stations. To prepare configuration files to set up the Office product on work stations.
- To configure the Active Directory for the distribution of software to work stations and for the automatic configuration of some products.

9.4.3 Servers

It is recommended to renew the equipment lot that ensures server functions and use the equipment intended for such work by producers. Stability and continuity of equipment operation will be considered as well. Elements ensuring operation stability and continuity are:

- Presence of additional elements in the architecture: additional power unit, processor, hard disks reunited in RAID. In such case, the malfunction of one element will not result in the failure of the whole equipment set.
- The use of elements that provide for the “hot swap”. If the failed element (power supply unit, hard disk, memory module) can be changed without having to stop the server, this can decrease the need for unscheduled interruptions in the functioning of the equipment.

The minimum server set includes:

- Two Active Directory Domain servers necessary to manage the infrastructure, which includes nearly 300 workplaces.
- E-mail Server.

This equipment may be used to organize the operation of the file server, printing server etc.

If the electronic documents flow system and intranet were implemented, additional server equipment would be needed. This equipment should include servers proper, equipment for data storage and infrastructure, equipment for the creation of back up copies.

9.4.3.1 Server rooms

It is recommended to arrange and equip the technical rooms in line with the TIA/EIA 942 standard. In this regard:

- In order to ensure the physical security of rooms, a blocking device with enhanced complexity will be installed. The entry of service personnel into the technical office will be subject to registration.
- A system of air conditioning or mandatory ventilation of rooms will be installed.
- Aerial isolation of the perimeter will be ensured and an air filter will be installed if forced ventilation system of the premises were used, in order to maintain the functioning capacity of the equipment.
- A thermal sensor and an alarm system will be installed in order to verify the functioning of the air conditioning equipment.
- The system of power supply of server rooms will be modified in line with the standards of power supply to server rooms, sockets and power cables will be marked up as well.
- The system of connecting the server rooms to the power supply system will be modified and sockets and power cables will be marked up.
- It is necessary that cabling stays stationary within the room, complying with the arched curvature of the cable; it is to be placed in raceways installed until patch panels. Using this method avoids any kind of malfunction, as well as prevents partial or complete tear up of horizontal cables. The horizontal cable is a copper single thread cable covered with a tough insulation material. Following the assembly of this cable, the structure becomes

more rigid, whereby the cable takes a certain shape and any modification of this form has irreversible implications both for the insulation material and for the copper structure. In current cabling conditions of server room, all cables from the entry point into the room and patch panels are mobile. Sooner or later, this situation will lead to the occurrence of communication problems and impossibility of exact identification of problem cause.

- The manually made patch cords will be changed for standardized category 5 patch cords with a standard length of 0,5 m, 1m, 3m produced in plant conditions. These are made out of multithread copper cable covered by elastic insulation and coupled with a special RJ–45 type connector that has a rubber protector. Such patch-cords allow their curving under a straight angle without damaging the cable or insulator structure. Equally, these patch cords allow up to 300 connections to equipment's ports. More importantly it is that at a reduced distance between two connectors this cable has lesser resistance than the single thread cable. Thus, one can avoid problems described under the previous point and ensure the compliance with minimum cabling standard of category 5 for modern cabling systems.
- A special cabinet for the installation of the server equipment will be mounted.
- A horizontal main line will be set up from the communication equipment to servers. Cables should be made of multi thread copper RJ-45 category 5 cable or higher with a length not longer than 5 meters.
- A cabinet for servers with manageable UPS with surge suppressors will be mounted. It will be ensured that the maximum task does not exceed 70%.
- Special fire extinguishers will be mounted in places with easy access by the door. Staff will be trained to use fire extinguishers.
- A registry for the so called monthly clean up of "forgotten ports", cabinets and equipment configuration will be set up.

9.4.4 Printers

At present, about 40 users of personal computers in the Moldovan Parliament are unable to print. This is due to the location of work places. Employees and MPs work places are located in separate offices with limited access (doors are locked). At the same time, 101 offices have only computer each, 32 offices have 2 computers each and only 5 offices have 3 computers each. Thus, PC users are physically separated from each another and the joint use of printers is impossible. At the same time, due to the fact that Moldovan Parliament has a local network, there are no technical obstacles for the shared use of printers. Action should be taken in order to ensure access to printers for all users. Two methods can be applied to this end:

1. Purchase of 40 personal printers and connect them to PCs that have no printer.
2. Joint use of existent IT resources in order to reduce the number of printers. Thus, printers with enhanced performance will be procured and will be placed in accessible areas, and access to printing for various users will be ensured through the IT structure.

9.4.5 Local area network

The main objection towards the local area networks in the Parliament is that it does not comply with the norms specified for RCT. As a result, such operations as repair of network failures, modification to its structure and/or topology prove extremely difficult. If computers are actively used and the flows of data transmitted between IT users go up, such a network could become the weak point of the whole system and may lead to unsatisfactory performance of applications.

It is persistently recommended:

- To bring the local network in line with standards that would correspond to RCT requirements. These works would require important financial means, labor force and a long period of time. To this end, it is recommended that the reconstruction of the local network be done concurrently with the reconstruction or refurbishment the Parliament building.

9.4.6 Internet connection

The following should be done regarding Internet connection:

- Explore the possibility to install a centralized firewall system preferably with a back up system for data storage.
- Explore the possibility to install a defense and control system of the logical perimeter of the entity.
- Install a system for request catching and an antivirus system.
- Create a system of traffic statistics.

9.4.7 Electronic mail

To improve the existent system of electronic exchange of correspondence it is recommended to:

- Create and configure a single server for the Parliament
- Install an antivirus system for e-mail verification
- As far as possible, ensure the integration of the server with the authorization server of network users.
- Preferably, create a Relay connection with the server or a larger number of Internet services providers with a higher level of SMTP protocol.
- Install additional e-mail control systems.
- Develop a procedure for creating employees' addresses concurrently with their recruitment and receipt of user name and access password to the network.
- Regulate the installation of auxiliary e-mail servers as needed. Make use of the system of private IP addresses between the front-end and back-end servers.
- Create some sub-domain connections between the central e-mail server and lower level server.
- Create a system of message statistics.

9.5 Information security

At present, IT infrastructure of the Parliament provides only for a part of measures towards ensuring informational security. Informational security includes technical, software and organizational measures, targeted towards ensuring confidentiality, integration and accessibility of information.

Organizational measures to ensure informational security may be as follows:

- Classification of data and organization's systems
- Periodical training of employees and ensuring that they are aware of information security rules.

At the time of audit, such actions have not been carried out in the Parliament. Data and systems classifiers that would specify rules defining the confidentiality level of data in general and that would include absolutely all resources and assign the confidentiality level were missing. There are no trainings for users, and trainings are not documented. It is noted that the lack of such documentation not only creates organizational difficulties but legal difficulties as well, since the definition of institution's secret information disclosure becomes unclear.

Software and technical measures are as follows:

- Hardware and software that impedes illegal access to organization's IT resources from outside public networks.
- Antivirus protection
- Actions towards the avoidance and/or rapid identification of system operation flaws (operational monitoring).

Actions to ensure a prompt functioning of the system in case of failure and copying back up files as a primary action.

During the research, it was noted that such operational monitoring of systems was not done. The copying of back up data was irregular, regulation policies were missing.

With rare exceptions, antivirus programs are installed on all workstations, but policies and procedures to ensure protection against viruses are lacking. The centralized management of antiviral systems is lacking.

Recommendations with regard to creating back up files:

- Policies that will regulate the back up copying of data will de developed. Policies will be subject to systematic revision and renewal.
- As far as possible, a serer for the management of back up copying will be created.
- Utilities for the automatic notification of administrator on the status of back ups and errors that are made during this process, specialized software will be used, for instance Amanda, Data Protector, Netback up.
- Files systems monitoring on which the back up is done will be organized in order to prevent its overloading.
- The ordinary verification of the status of data supports and systems re-establishment will be organized.

- Monitoring, storing and analysis of entries on the time necessary for the creation of back ups and systems' re-establishment. For more important systems, there will be copies of the status of the operating system stored.

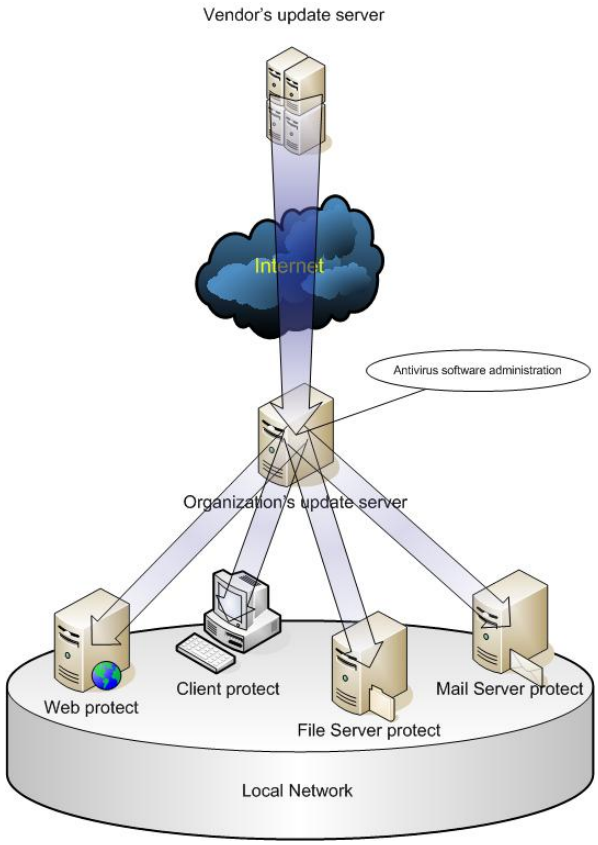
Recommendations on the organization of operational monitoring:

- Key components of IT infrastructure to be monitored will be defined.
- The policy and procedure of organizing the monitoring for organization's systems will be developed and approved.
- Key general and individual indicators and the value of their thresholds will be determined for various systems.
- An ordinary reporting on systems productivity will be ensured.
- Notification regimes (e-mail, SMS) of the administrator will be configured with the help of standard means if possible, or a specialized program will be used.
- The opportunity for the creation of a specialized platform for organizing centralized monitoring of systems will be explored.

Recommendations on organizing antivirus protection:

- Appropriate regulation procedures will be developed and approved.
- A model form of reporting will be developed and a weekly analysis of results will be made.
- As far as possible, antivirus programs developed by one producer will be used. Thus, the service personnel will have the possibility to manage all antivirus programs components from one work station and have a single statistical data collection on problems, infections or updates.
- Many antivirus products' developers update their programs using the so-called "Pattern file". This mechanism will provide for the update of server modules through Internet, and other modules will be updated through the local network, as indicated in the scheme below.

Figure 6. Recommended antivirus protection scheme



- Notification with regard to virus attacks or system failures will be sent on-line to the system administrator. If the virus attack is localized, the organization of analysis and reports will be intensified until the problem is solved and the normal working regime is re-established.

9.6 Parliament web site

Parliament web site should evolve concurrently with the development of web technologies, in order to allow for a more integrated and accurate information of citizens.

Parliament web page should thoroughly reflect the legislative process. To ensure the qualitative presence of Moldovan Parliament on the Internet, it is necessary to improve the way documents are presented, in order to reflect their life cycle. It is necessary to include additional information on the activity of Committees, apparatus, multimedia data, and translation to spoken and foreign languages.

The web page should correspond to accessibility standards and facilitate access for people with limited Internet access, or with physical or sight deficiencies.

9.7 Cost estimation

This chapter presents an approximate estimate of the budget necessary for the re-engineering of existent ICT infrastructure.

Data on costs are approximate and are received based on a list of prices offered by various producers, companies and organizations, which provide equipment and services similar to those listed in the table. The real cost will depend upon various factors, which cannot be planned in advance, for instance:

- The volume of equipment order will influence additional discount.
- Modification of market prices in relation to the competition of producer-companies, providers.
- Halt of production of a certain type of equipment and its replacement with new equipment.
- Seasonal modification of fees for the work performed.
- Selecting the company that will deliver program products and equipment, launching and assembly works, etc.
- Other factors.

The order of actions is conventional. The de facto sequence will be determined in line with development plans and the investment can be made in a number of stages.

Table 9-1contains the list of recommended actions for ICT development and their estimated cost.

Table 9-1 Cost estimation

№	Name	Description	Estimated cost, USD
1	Personal computers	Equipping work places in the Parliament with personal computers; 81 work places have no computers, 111 work places have outdated PCs that need to be replaced.	192 * 800 = **153600**
2	Monitors	At the time of examining IT infrastructure of Moldovan Parliament, 91 old type monitors were used (CRT 14”, CRT 15”). It is recommended that these monitors be decommissioned and replaced with modern ones.	
2.1.	17” LCD		172 * 330 = **51600**
2.2.	17” CRT		172 * 120 = **20640**
3	Printers	40 PC users have no access to a printer. If 81 work places are equipped with PCs, the number of users who have no access to a printer will rise up to 121.	121 * 179 = **21659** for the use of personal printers;

4	Active Directory Servers Domain	Servers that manage local network policies, users' accounts, users access to network resources. The recommended number of servers is two.	2 x 6500 = **13000**
5	Electronic circulation of documents, computer programs.	The system that offers the possibility to work with shared documents automates the process of formulating and making a decision. The cost of the system depends on the producer, on functional possibilities of the product and purchaser requests, number of users, as well as the analysis of business processes. In order to expedite the result, optimize expenditures, get the users acquainted with the work style, a staged implementation of the system is recommended.	The cost of implementing these systems varies between tens and hundreds of thousands of dollars.
6	Server equipment for the document circulation system.	The equipment on which the system of electronic circulation of documents will function includes servers, a data storage device and infrastructure (Storage Area Network, SAN), data backup device.	
6.1.	Servers	Recommended number of servers - two	2 x 6500 = **13000**
6.2.	SAN		**12000**
6.3.	Data backup device		**8000**
7	Server rooms	Arranging servers' rooms in line with recommendations from adequate standards. The cost of these measures depends on the recommendations that will be applied (false floor, false ceiling, special coverage for walls, air conditioning systems, fire extinguishers, access control, drainage, power supply system, etc).	**Up to 35000**
8	Local network	Re-building the local network in compliance with RCS requirements, Assessment of necessary expenditures will be done with approximation, since the amount of necessary materials (cables, channel for cables, consolidation material) and the cost of cable assembly works cannot be precisely calculated. It is recommended that these works are performed during the construction or	**> 50000**

		general repairs of Parliament's premises.	
9	System for monitoring and management of IT infrastructure resources.	System of operational monitoring that ensures the real-time receipt of data regarding the status of key components of infrastructure.	**8500**
10	Computer skills	For an efficient use of modern information technologies, users should have a certain level of training. Besides, the staff that will be maintaining the operating capacity of IT infrastructure should be trained at an appropriate level.	
10.1.		Measures to enhancing the training level of computer use by staff and MPs by means of the ECDL program. http://www.iic.md/cursuri.htm	**150** per person
10.2.		Training of IT specialists. There will be trainings for the management of data storage devices, servers, network equipment.	~ **5000** per person, only training expenditures are included.
11	Organizing IT system administration.	Creating a service responsible for the functioning and IT infrastructure development, maintaining equipment functionality and software applications, data storage, users' support. Organizing IT administration courses for the employees of this service. Example: http://www.learningtree.com/training-directory/management-training-index.htm http://www.microinform.ru/manageprojects/manageprojects.htm; http://www.hp.ru/education/promo/	Various training centers offer courses at different prices. For these examples, the cost of training per person reaches 7000 USD.

9.8 Recommended actions

Creation of a developed infrastructure of ICT that would allow for an essential increase of the efficiency of institution's work at the expense of intensive use of IT capacities requires taking a large range of actions. These actions vary a lot between them according to the degree of importance for the construction of infrastructure and through related expenditures (both time and funds). Besides, it is necessary to comply with a certain sequence in the accomplishment of these actions.

This chapter will list the sequence of actions that must be taken in order to reach our goal – creation of an IT infrastructure that would allow for the establishment of an e-Parliament.

> *This sequence of actions raises certain doubts and does not claim to be the only right way. We expressed our view with regard to measures that should be carried out and the way they could be divided by separate stages that do not depend from each another or between which dependence is smaller. We have deliberately not indicated the length of these actions, since it depends to a great extent on a range of factors that are unknown and often changing: availability of material, human resources, possibility of carrying out work in the premises of the Parliament building.*

Stage 1. Work places and users

Stage 1.1 Workplaces

At the time of the study, nearly 70% of work places in the Parliament were equipped with personal computers (PCs). Besides, a significant part of computers were outdated, personal computers with Pentium IV accounted for less than 50% of the total. Approximately half of the monitors are old and their use puts the staff's health at risk. At the same time, once IT starts to be extensively used, the personal computer will become an element of the work place just as important as the pen.

Therefore, it is necessary to purchase the necessary number of PCs and install them on work places where they still lack.

At the time of the study, 192 work places required equipping or re-equipping with computers (re-equipping means replacing the old computer with a modern one). Also, it is necessary to re-equip 172 work places with new monitors. Nearly 40 users had no access to a printer.

Stage 1.2 Users

In order to fully benefit from the advantages provided by a developed IT system, the staff of the organization should have a certain level of computer skills. Otherwise, the impact of purchasing computers and installing sophisticated IT systems will not be proportionate. The survey of PCs users' skills in the Parliament indicated that this level is insufficient.

We recommend taking the following action towards increasing the skill level of users:

1. Run computer trainings for all employees of Moldovan Parliament.
2. Develop policies that would regulate the minimum accepted level of computer skills.
3. Periodically enhance skills in this area.
4. Organize computer trainings for MPs.

It should be ensured that Stages 1.1 and 1.2 are accomplished almost concurrently. Otherwise, the impact of installing computers will be decreased due to low skills of users or the impact of the training will be lowered because of the lack of practice with PCs.

Stage 2. Organizing the sub-domain structure of the network.

At the time of the study there was no logical network structure in the Parliament. In such conditions it is next to impossible to manage the network and users' activity on the network. Therefore, we recommend the following actions:

Stage 2.1. Training IT specialists – network administrators.

Managing a local area network requires certain skills. Administrators are responsible for the management of network resources; provision of accessibility, integrity and data storage, prevention and/or repair of malfunctions. It is recommended to organize trainings for those employees of Moldovan Parliament who will perform the function of network administrators. At least two network administrators are necessary, as a rule.

Stage 2.2. Server rooms

As servers are extremely important for IT, it is necessary to pay increased attention to conditions of servers functioning. The rooms where server equipment will be installed should be planned and prepared so that equipment has a stable power supply source and air conditioning. The room should be protected against fires, floods, unauthorized access. Requirements towards the room for servers are described in more detail in TIA/EIA 942 standard.

Stage 2.3 Domain servers

The domain structure of the network requires the existence of the so-called domain server. This is a server that administrates policies, which are applied on the local network, users' registration, user's access to network resources. To ensure security and continuity of network functioning, it is recommended to install two servers.

It is necessary to organize the domain structure of the network in such a way that stage 2.2 follows shortly after the stage 2.1. In this case, specialists that were recently trained will be able to apply their theoretical knowledge into practice and more importantly will participate in servers' installation and set up.

Immediately after the organization of the domain structure of the network, it will be necessary to create an efficient antivirus system, ensure the functioning of e-mail and ensure users' access to Internet resources.

After the accomplishment of stages 1 and 2, we could say that Parliament's IT structure may be managed and is ready for the installation of software applications that will ensure law-making activity.

Stage 3. Creating the system of electronic circulation of documents.

According to the Executor's opinion, the system of electronic circulation of documents is a set of computer applications that are most appropriate for the activity of an institution such as the Parliament. By the system of electronic circulation of documents we do not mean only the software applications proper, but the server equipment by means of which installations will function, as well as equipment for the storage and protection of data.

Stage 3.1 Software.

At present, there are a number of systems that ensure electronic circulation of documents. These systems differ one from another through the set of functions they accomplish, price, licensing policy, servicing conditions and other factors that should be taken into consideration while choosing a system.

The traditional process of purchasing and implementing complex applications (Software Development Life Cycle, SDLC) comprises the following stages:

1. Usefulness survey. At this stage, changes to take place in organization's activity as a result of implementing software development, are determined, as well as the effect of implementation is assessed.
2. Requirements. Formulation of the problem that will be solved by means of system implementation, as well as requirements towards functional possibilities of the system.
3. Selection. Based on identified requirements at the previous stage, the so-called (RFP), Request for Proposals is drafted. In addition to requirements towards system's functionality, RFP includes so technical requirements, technical conditions of services provided by the supplier at the stage of system installation and throughout the use, as other conditions. Choosing a system between those offered on the market takes into account the degree of compliance with requirements listed in the RFP, producers and suppliers reputation.
4. Configuration and set up. Modern packages are extremely flexible and may satisfy the requirements of various organizations by means of connecting or disconnecting various functioning elements and determination of parameters.
5. System launch. At this stage the system starts functioning and accomplishes a number of adjustment iterations, certain emergency situations are tested. This stage includes users' confirmation that the system is performing well.
6. Impact assessment. After the system started operating, the assessment of the implementation effect is carried out and its further development is planned.

Stage 3.2 Hardware

Since the system of electronic circulation of documents is an application on which the activity of the whole organization is based, the equipment should ensure the ongoing functioning of the system and have the possibility to increase the capacity of the system and ensure the storage and quick recovery of data in case of malfunction.

The system of documents circulation should be served by two servers that would function in group regime or support regime in emergency situations. To store data, it is necessary to create the so-called Storage Area Network (SAN). In order to create electronic backup copies of data, it is necessary to include a special device in the equipment set. Usually, for the organization of backup copies creation, Autoloader or Tape Library devices are used.

We should take into account the fact that certain applications for documents circulation may have special requirements towards the equipment and/or towards operational systems, it is possible that besides equipment it will be necessary to purchase a certain data base management system.

After the accomplishment of the third stage, Moldovan Parliament will have an IT system that will support the accomplishment of the central function of the institution. The goal of the following stage will be the optimization of the IT system.

Stage 4. Local area network

The current structure of the local computer in the Parliament does not comply with the requirement of having structural cabling networks that would meet the standards. As a result, the change in the network type or removal of functioning deficiencies requires a long time. Besides that, the cabling network that does not comply with standard requirements may cause the unsatisfactory functioning of the whole IT infrastructure. It is necessary to bring the cabling network in compliance with the existent standards. This action requires a lot of time resources, funds and labor. It is recommended to do this during the first construction or capital refurbishment to the Parliament building.

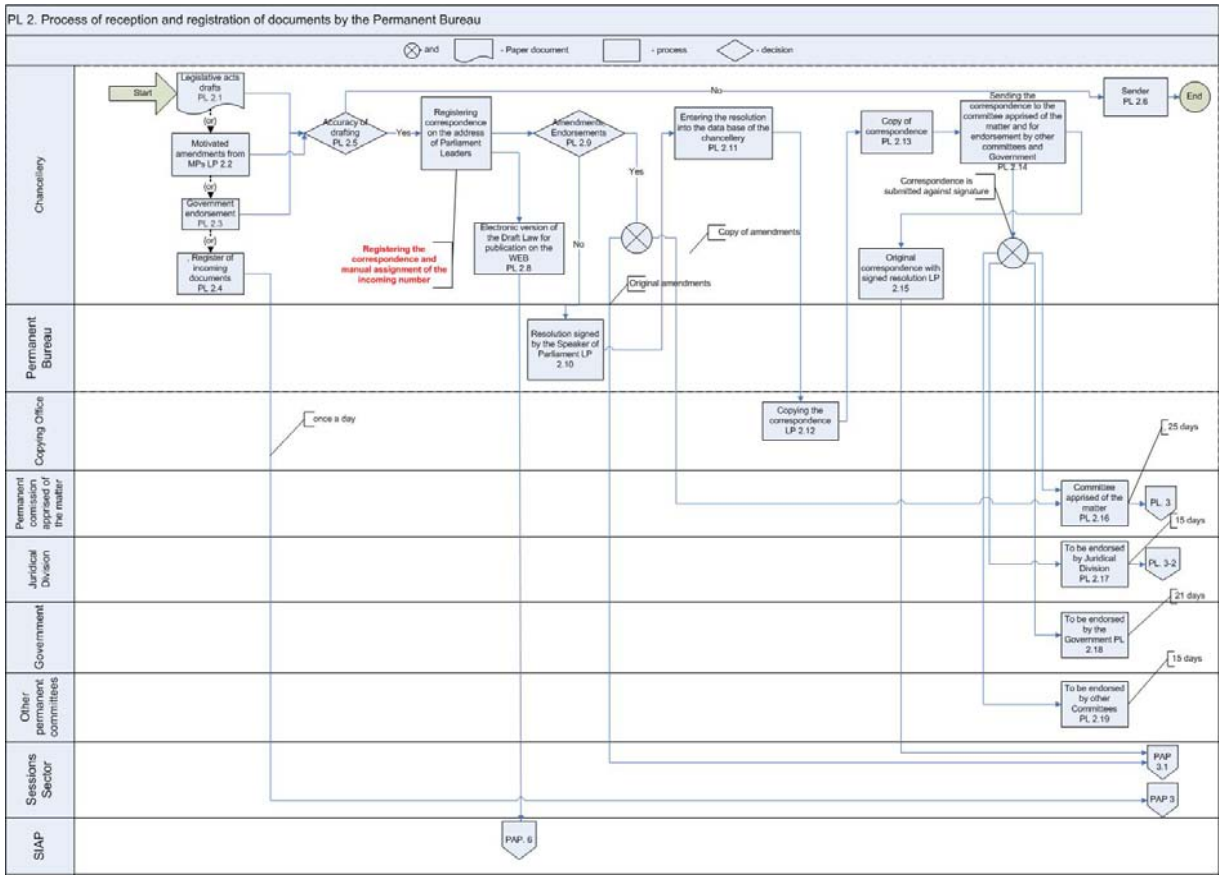
Stage 5. Organization of operational monitoring

Operational monitoring systems allow real time tracking of the status of all or at lest main elements of the IT infrastructure. The possibility to receive this information, its reliability, and possibility to manage infrastructure elements form a single work station will allow for a considerable increase of the efficiency of the service responsible for IT systems operation.

10 Annexes

10.1 Annex 1. Legislative process (LP) charts

10.1.1 Receipt and registration of documents by the Standing Bureau (LP 2).



LP 2.1

The right of a legislative initiative belongs to MPs, President of Republic of Moldova, Government and People's Assembly of the autonomous territorial unit of Gagauzia and is submitted for registration to the Chancellery of the Moldovan Parliament. Draft legal acts are presented in a mandatory manner on paper and in electronic format. Documents are sent by post, courier or special couriers.

LP 2.2

Deputies and parliament groups are entitled to present written motivated amendment to the draft law that are submitted to the Standing Bureau (Parliament Chancellery) within 15 days after the receipt of the draft.

LP 2.3

Government's assessment with regard to draft legal acts is received by the Moldovan Parliament Chancellery and sent to the competent standing committee.

LP 2.4

Another information flow is the "Register of incoming documents". It is created on the basis of documents received and registered at the Parliament's address. The "Register of incoming documents" is sent once a day to the Sessions Sector, which is further used for the "Process of registering in the agenda (PAP 3)".

LP 2.5

The first requirement to be met by the document sent to the Parliament is the "Accuracy of drafting". The document is registered if it meets all drafting elements, including the name and letterhead of the sender, date and number, receiver, signature or stamp (see Instruction on working with documents in Moldovan Parliament, chap. 2 Receipt, registration and circulation of service documents).

LP 2.6

If the received document addressed to the Parliament does not meet some of the necessary requirements, it is returned to the sender.

LP 2.7

If the document (draft law, amendment, approval) meets all drafting requirements, it is registered according to the order of its submission in the Register of incoming documents, and is being assigned an incoming number, which identifies it while it is circulating in the Parliament. Any reference to a draft legal act envisages the indication of its title, number and registration date.

A negative part of the registration process is the recording of the paper document in the incoming register and the manual assignment of the number. As a result of this shortcoming, the procedure of searching in the register is inefficient and time consuming. In case of assigning an incoming number there is no mechanism that would guarantee the uniqueness of the assigned number.

LP 8

The registered draft law is electronically sent to the information, analysis and forecast Service to be published on the official site of the Moldovan Parliament.

LP 2.9

The draft law, which has been registered in the Chancellery, is sent to the Speaker/deputy speaker of the Parliament for a resolution to be signed in this regard.

The original version of amendments from MPs and Government's assessment are sent to Sessions Sector. The copy of these documents is distributed to the committee apprised of the matter.

LP 2.10

The Speaker/deputy-speaker of the Parliament signs the resolution on the draft law and sends it to the Chancellery.

LP 2.11

After the Speaker/deputy-speaker of the Parliament applies the resolution on the draft legislative act, its text is entered in the Chancellery data base.

LP 2.12

The correspondence with the signed resolution is sent by the Chancellery to the Copying Office to be copied.

LP 2.14

The copy of the correspondence with the signed resolution is sent to the competent committee for endorsement/assessment by other committees, legal division and Government. The correspondence with the signed resolution is sent through the secretariat.

LP 2.15

After sending the copy of the correspondence with signed resolution to committees, legal division and Government, the correspondence with the original of the resolution is sent to the Sessions Sector.

LP 2.16

The draft law or legislative proposal is sent to the relevant committee for debate and report preparation. The standing committee will debate the draft law or legislative proposal during 25 working days, unless the Speaker or deputy-speaker of the Parliament does not set a different term.

LP 2.17

The draft law and legislative proposal are sent to the legal division for endorsement, which within 15 days will present its endorsement regarding the compliance of the draft law with:

a) Constitution's provisions
b) Parliament's competence to regulate the respective area of social relations through normative acts (law and decisions)
c) System of legislation unification and codification
d) Requirements of legislative technique

LP 2.18

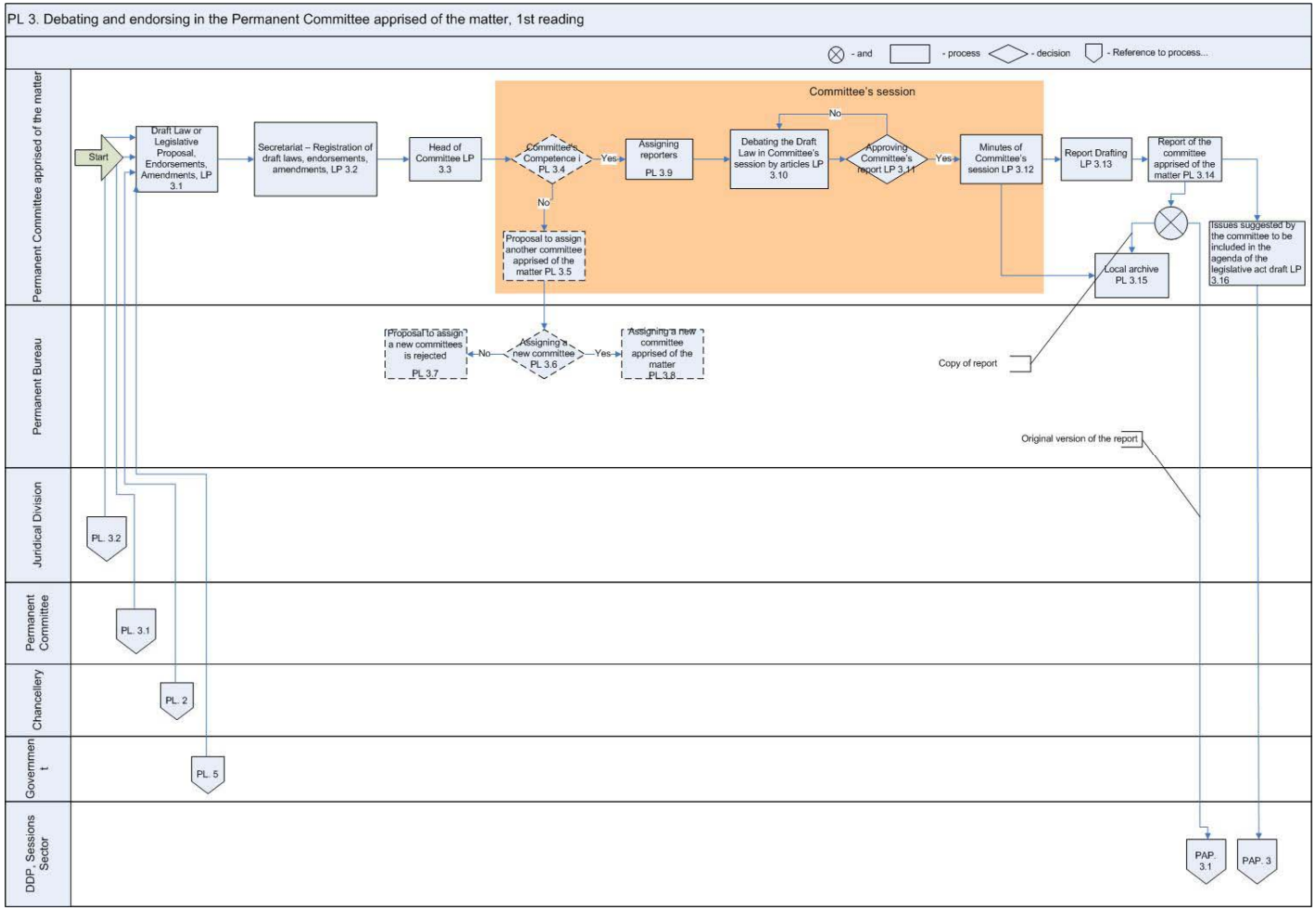
Drafts laws and legislative proposals submitted by MPs, standing and special committees of the Parliament, as well as draft laws sent by the Popular Assembly of the autonomous and territorial

unit of Gagauzia are sent by the Standing Bureau to the Government for endorsement in a mandatory manner.

LP 2.19

Other standing committees that are considered competent and that received the draft law or legislative proposal for debate and approval will present to the relevant standing committee the assessment of the draft and its proposals within 15 working days. If this term is not complied with, the competent standing committee will edit its report without the assessment of other committees.

10.1.2 Debates and endorsements in the competent Standing Committee, 1st reading (LP. 3)



LP 3.1

The draft laws or legislative proposals, endorsements of other standing and Government committees, amendments from MPs and groups are sent to special competent committees, for working out Committee's report and presenting it at the Parliament's plenum.

LP 3.2

Draft laws or legislative proposals, endorsements of other standing and Government committees, amendments from MPs and groups are registered by the secretariat of the committee. The registration procedure consists of registering the document in the register of incoming documents and assigning of an internal number for internal use only (see Instruction on working with documents in Moldovan Parliament, Annex 4).

LP 3.3

Documents received and registered at committee's secretariat are sent to the head of the committee for information and for assigning an executor.

LP 3.4 – LP 3.8

If during its meeting, the standing committee deems that the draft law or the legal proposal that was sent to it for debate is in other committee's competence, it may request the Parliament Speaker to send it to this committee. Parliament Speaker will decide upon the assignment of a new committee or the previous resolution will be maintained in force.

LP 3.9

At the beginning of debates over the draft law or the legislative proposal during committee's session, the head of the committee assigns one or several reporters from committee's members. These persons edit the report or the endorsement that will be subject to committee's approval.

LP 3.10

The draft law or the legislative proposal is debated by articles.

LP 3.11

After debating the draft law and the legislative proposal, the competent standing committee will approve the report that will comprise on a mandatory basis:

a) actuality of legislative regulation of the problem addressed in the draft law or in the legislative proposal
b) the fullness of the regulation through the draft or proposal of the respective area of social relations

c) appropriateness of draft law debate (starting from the economic and financial possibilities of the country, social and political situation, consecutiveness of legal regulation of processes.);
d) possibility of debating the draft law during the Parliament session, etc.

LP 3.12

The meeting of the committee is finalized by drafting the minutes of the meeting (meeting's minutes will be drafted in 2 weeks at most). The title of minutes carries its number, name of meeting, its date. The text sets forth the presence and absence, participants and assistants are indicated, as well as the agenda and the speakers, the summary of speeches and approved decisions. Standing committee's minutes will have a successive numbering for the whole legislature (see Instruction on working with documents in Moldovan Parliament, p.3.3 Documents of sessions and deliberations, Annex 22-27).

LP 3.13

Editing the report by the reporter.

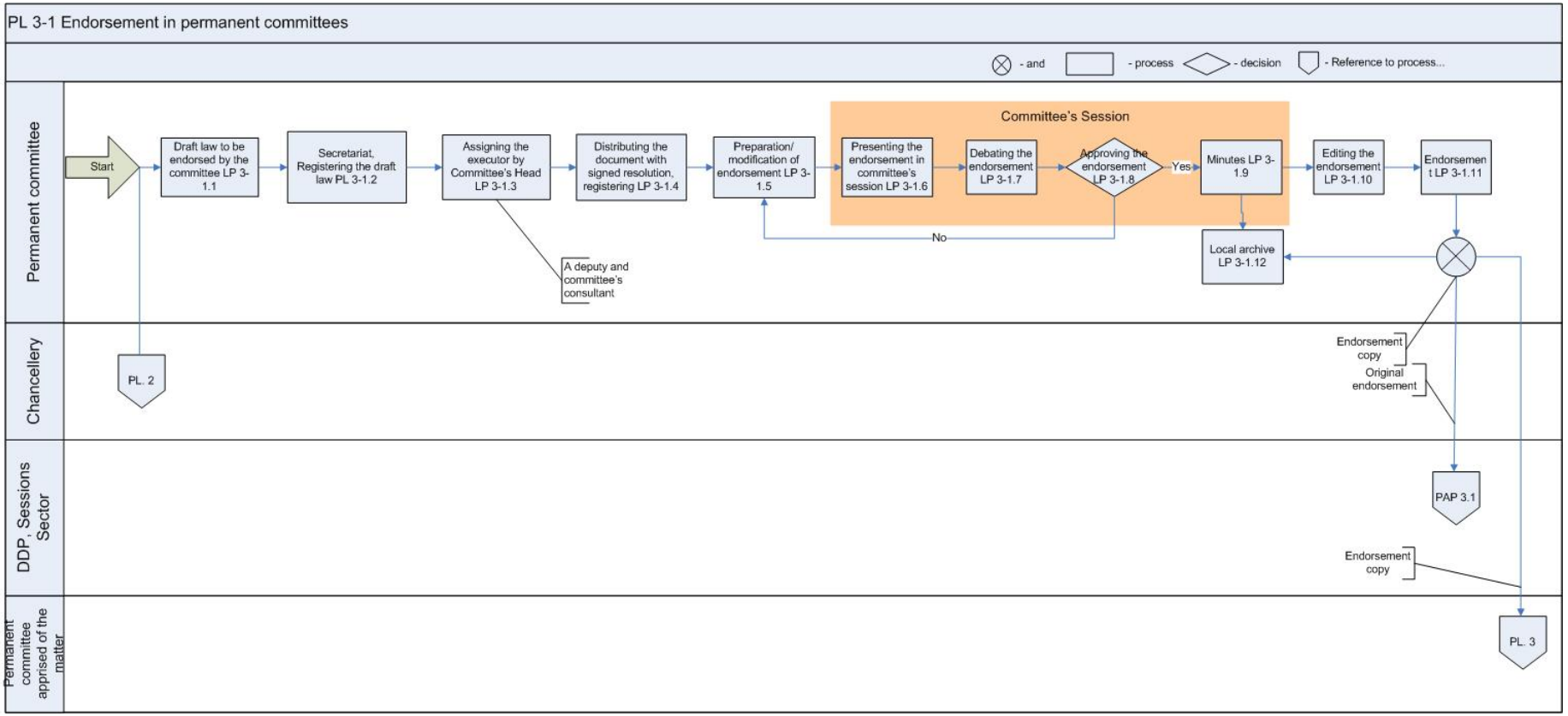
LP 3.14 – LP 3.15

After editing, the report of the committee will be sent to the Sessions Sector (original version of the report) and a copy of the report will stay in the local archive of the committee.

LP 3.16

For the draft law to be debated at Parliament sessions, the committee will send the issues to be included in the agenda to the Sessions Sector. Issues will be accepted only after the competent standing committee will present committee's report on the draft law or legislative proposal.

10.1.3 Endorsement in standing committees (LP 3-1)



LP 3-1.1

Parliament's Chancellery sends the draft law or the legislative proposal for endorsement to the competent standing committee.

LP 3-1.2

Standing committee's secretariat receives the draft law or legislative proposal, signing for it, and records it in the register of incoming documents to the committee (see Instruction on working with documents in Moldovan Parliament, Annex 4).

LP 3-1.3

Documents received and registered at the secretariat of the committee are sent to the head of the committee for information and for assignment of an executor (a deputy and a consultant from the committee).

LP 3-1.4

The officer of the secretariat distributes the document with the resolution signed by the head of the standing committee to the executor. The standing committee's secretariat takes control over the execution of the document.

LP 3-1.5

Preparation of endorsement by the executor.

LP 3-1.6

The endorsement is submitted for debate and approval at the meeting of the standing committee.

LP 3-1.7

Debating the endorsement at the meeting of the standing committee.

LP 3-1.8

Approval of the endorsement by committee members at the standing committee meeting.

LP 3-1.9

The meeting of the committee is finalized by drafting the minutes of the meeting (meeting's minutes will be drafted in 2 weeks at most). The title of minutes carries its number, name of meeting, its date. The text sets forth the presence and absence, participants and assistants are indicated, as well as the agenda and the speakers, the summary of speeches and approved decisions. Standing committees' minutes will have a successive numbering for the whole

legislature (see Instruction on working with documents in Moldovan Parliament, p.3.3 Documents of sessions and deliberations, Annex 22-27).

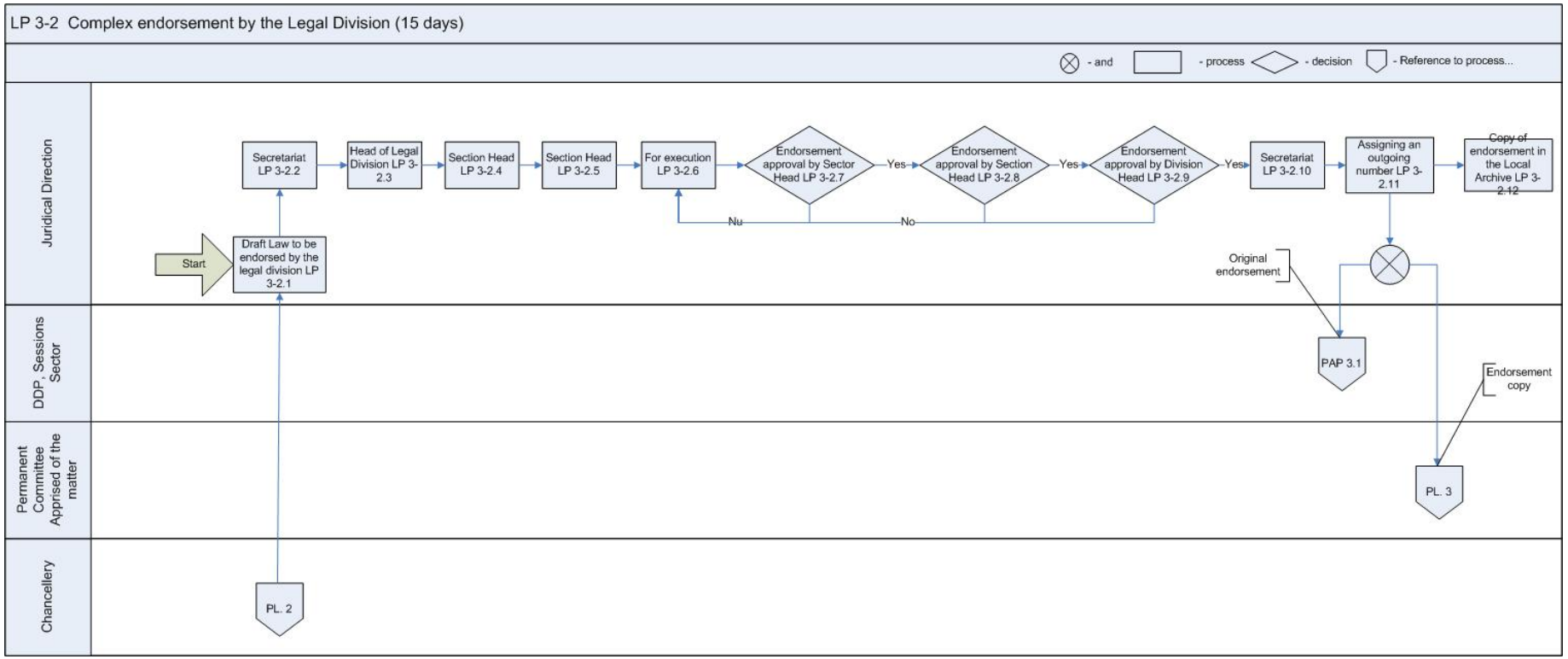
LP 3-1.10

Editing of the endorsement following its debate at the meeting of the standing committee.

LP 3-1.11

After editing, the report of the committee will be sent to the Sessions Sector (original version of report) and a copy of the report will stay in the local archive of the competent committee.

10.1.4 Complex endorsement by Juridical Division (LP 3-2)



LP 3-2

The draft law or legislative proposals are sent by the Parliament's Chancellery to the Legal Division for endorsement.

LP 3-2.2

Legal Division Secretariat receives the draft law or legislative proposal, signing for it, and records them in the register of incoming documents to the committee (see Instruction on working with documents in Moldovan Parliament, Annex 4).

LP 3-2.3

The draft law or legislative proposal received or registered at the committee's secretariat is sent to the head of Legal Division for information and for assigning a section.

LP 3-2.4

The draft law or legislative proposal is sent to the head of designated section.

LP 3-2.5

The draft law of legislative proposal is sent to the head of designated sector.

LP 3-2.6

Sector head designates the executor. The draft law or legislative proposal is sent to the executor through the secretariat.

LP 3-2.7

The endorsement to the draft law is presented for approval to the head of sector. The document presented for signature will be approved by the executor and other persons who are competent in the problem under examination (see Instruction on working with documents in Moldovan Parliament, Annex 4, Art. 3, Preparation, drafting, tracking and sending documents).

LP 3-2.8

Approving the endorsement submitted by the head of section.

LP 3-2.9

Approving the endorsement by the head of Legal Division.

LP 3-2.10

The endorsement to the draft law or legislative initiative is registered at Legal Division secretariat (an outgoing number is being assigned). The original version of endorsement is sent to the Sessions Sector, a copy of the endorsement will be sent to the competent standing committee and another copy will be stored in the local archive of the Legal Division.

LP 3-3 Complex approval of the editing section

Complex approval of the editing section is not done de-facto.

LP 3-4 Motivated amendments from MPs and groups

Deputies and Parliament groups are entitled to present in writing grounded amendment to a draft law, which are submitted to the Standing Bureau within 15 days after the receipt of the draft law.

10.1.5 Report of the competent standing committee (LP 4)

The report of the competent standing committee, followed by assessments of other committees that debated the drat law or the legislative proposal, as well as the assessment of the legal division of Parliament Apparatus are submitted by the Standing Bureau to MPs and to the authors of the draft law or legislative proposals.

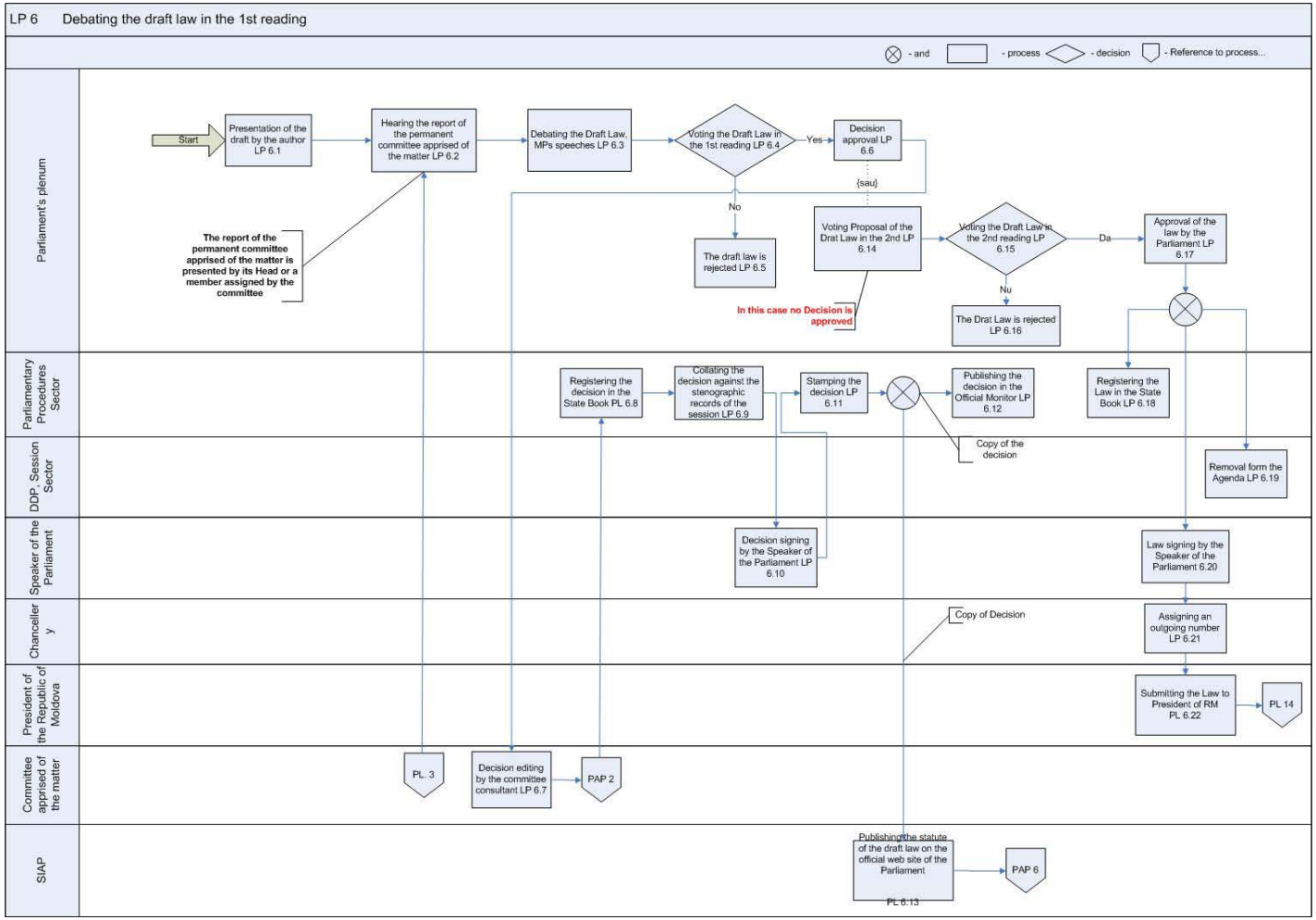
At the meeting of the Standing Bureau (see PAP3 Process of registering on the agenda) at which the issue of registering the draft law on the agenda is examined, the competent standing committee presents:

a) project goals, tasks and concept, forecast of social and economic and other impacts
b) list of authors who participated at developing the draft law
c) list of persons or organizations that made an expertise of the draft law
d) economic and financial grounding of the draft law
e) approval of the draft law by the standing committee (committees)
f) approval by the legal division of Parliament Apparatus
g) draft law on amending the Constitution (if needed)
h) list of conditioned acts that will be developed in relation to law approval.

10.1.6 Government endorsement (LP 5)

Draft laws and legislative proposals submitted by MPs, standing and special committees of the Parliament, as well as draft laws submitted by the People's Assembly of the territorial-autonomous unit of Gagauzia are submitted by the Standing Bureau to the Government for endorsement on a mandatory basis. Should the Government not submit its endorsement within 21 days at most or within another established term, the Standing Bureau will decide on registering the specific draft law in the agenda without Government's endorsement.

10.1.7 Debating the draft law or the legislative proposal in the 1st reading (LP 6)



LP 6.1

Submission of the draft law by the author in line with art. 44 line (3) and (4) of Parliament Rules and Procedures;

LP 6.2

Hearing of competent standing committee's report, which is presented by its head or a member designated by the committee.

LP 6.3

Debating the draft law, MPs speeches with the mandatory compliance with the order of speeches of representatives of all Parliament groups.

LP 6.4

Following the debate, the draft law is subject to voting in the first reading (see VP)

LP 6.5

If after the voting the draft law does not meet the necessary number of votes, it is considered rejected and the concept of the draft law is not approved.

LP 6.6

If after the voting, the l draft law is accepted, Parliament makes a decision, which reads that the draft law (concept) is accepted in the first reading.

LP 6.7

The decision on draft law approval in the first reading is edited by the consultant of the committee and the editing section (see RAP 2, Process of editing and typing)

LP 6.8

Registering the decision in the State Book by the Section for parliamentary procedures

LP 6.9

The collation of the decision with the records of the sessions is done by a member of the Section on parliamentary procedures and a committee consultant.

LP 6.10

The decision is signed by Parliament Speaker/deputy-speaker.

LP 6.11

The signed decision is sent to the Section for parliamentary procedures to be stamped (see Instruction on working with documents in Moldovan Parliament, art. 4.2 Use of stamps and seals).

LP 6.12

A copy of the decision/law is submitted for publication in the Official Paper (Monitorul Oficial).

LP 6.13

A copy of the decision is submitted to the information-analysis and forecast Service to be posted on the official web-site of the Parliament.

LP 6.14

If the draft law is approved in the first reading, the Speaker of the Parliament may suggest the voting of the draft law in the second reading.

LP 6.15

Voting of the draft law in the second reading (see VP)

LP 6.16

If after the voting the draft law doesn't meet the necessary number of votes it is rejected.

LP 6.17

The law is passed with the vote of the majority (see VP)

LP 6.18

The passed law is registered in the State Book.

LP 6.19

After approval, the draft law is removed from the working agenda of the Sessions Sector.

LP 6.20

The law approved by the Parliament is sent for signature to the Speaker of the Parliament within at most 20 days from approval.

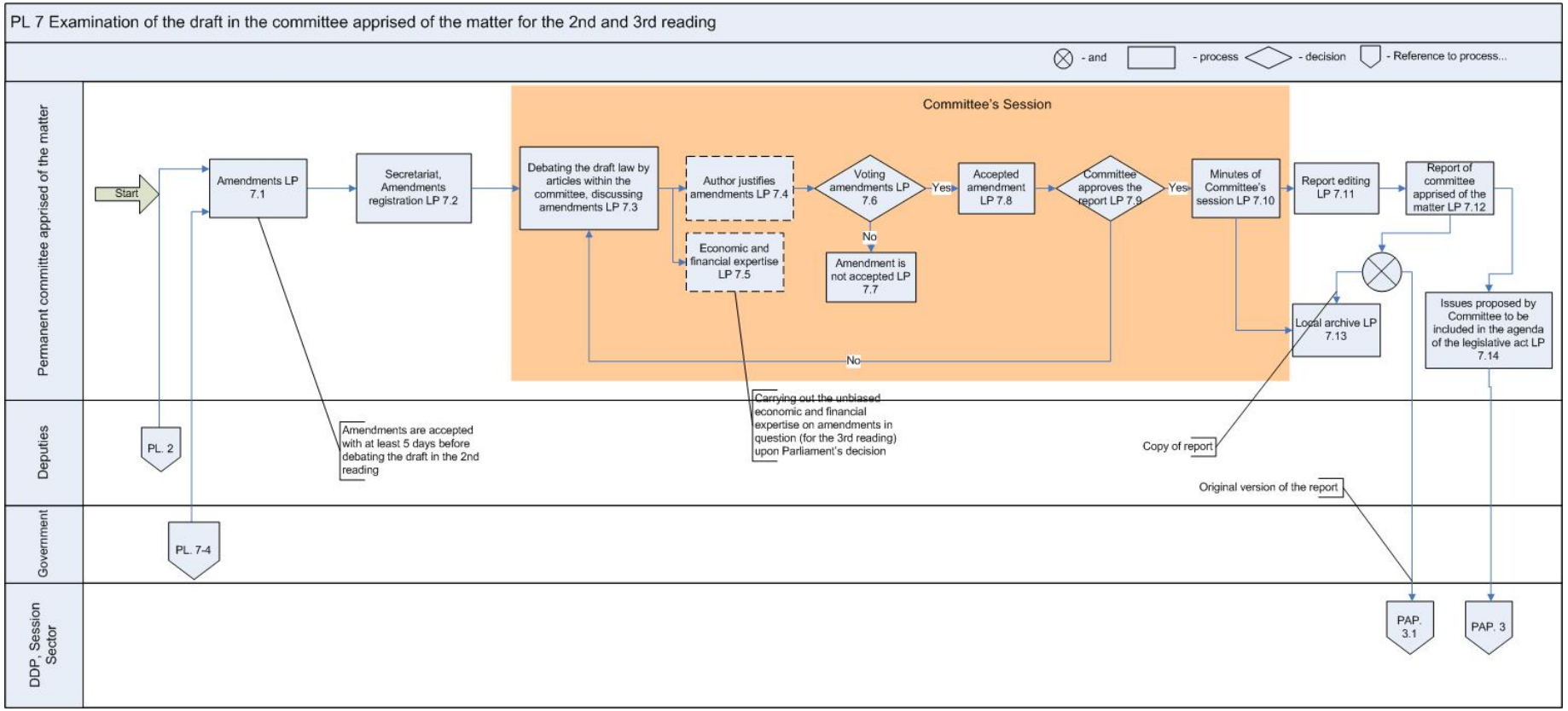
LP 6.21 – LP 6.22

The law is submitted by the Speaker or by one of the deputy-speakers of the Parliament (through the Parliament Chancellery) to the President of Moldova for promulgation within 25 working days from its approval. (see LP 14).

LP 6-1

After being debated in the first reading, the draft is submitted to the competent standing committee, to another committee or to a number of competent committees by assigning a committee responsible for the examination of the objections and proposals expressed in the first reading.

10.1.8 Examination of the draft in the competent committee in the 2nd and 3rd readings (LP 7)



LP 7.1

If the draft law is debated in the second reading, within 7 days from the date of submitting the draft to committees, MPs and Government representatives make amendments and submit them in written form to the session's secretary. Amendments should be explained in brief. Amendments are sent to the competent standing committee to be finalized in at least 5 days before the debate of the draft law in the second reading.

LP 7.2

Amendments are received by the secretariat of the competent standing committee and are recorded in the register of incoming documents (see Instruction on working with documents in Moldovan Parliament)

LP 7.3

Debating the draft law at the meeting of the committee by articles and discussing amendments received from MPs and Government.

LP 7.4

Authors of amendments may participate to the meeting of the committee in order to justify proposals. This committee informs the author on the meeting before hand.

LP 7.5

When debating the draft law in the third reading, the competent standing committee will carry out an impartial economic and financial expertise on specific amendments at Parliament's decision.

LP 7.6

Standing committee will vote each amendment (see VP).

LP 7.7

If after the vote the amendment does not meet the necessary number of votes it is not accepted.

LP 7.8

Amendment is accepted by the majority votes of all MPs.

LP 7.9

After debating the draft law or the legislative proposal by articles and after discussing amendments, the competent standing committee will approve a report.

LP 7.10

The meeting of the committee is finalized by drafting the minutes of the meeting (meeting's minutes will be drafted in 2 weeks at most). The title of minutes carries its number, name of meeting, its date. The text sets forth the presence and absence, participants and assistants are indicated, as well as the agenda and the speakers, the summary of speeches and approved decisions. Standing committees' minutes will have a successive numbering for the whole

legislature (see Instruction on working with documents in Moldovan Parliament, p.3.3 Documents of sessions and deliberations, Annex 22-27).

LP 7.11

Editing the report by the reporter.

LP 7.12 – LP 7.13

After editing, the report of the committee will be sent to the Sessions Sector (original version of report) and a copy of the report will stay in the local archive of the committee.

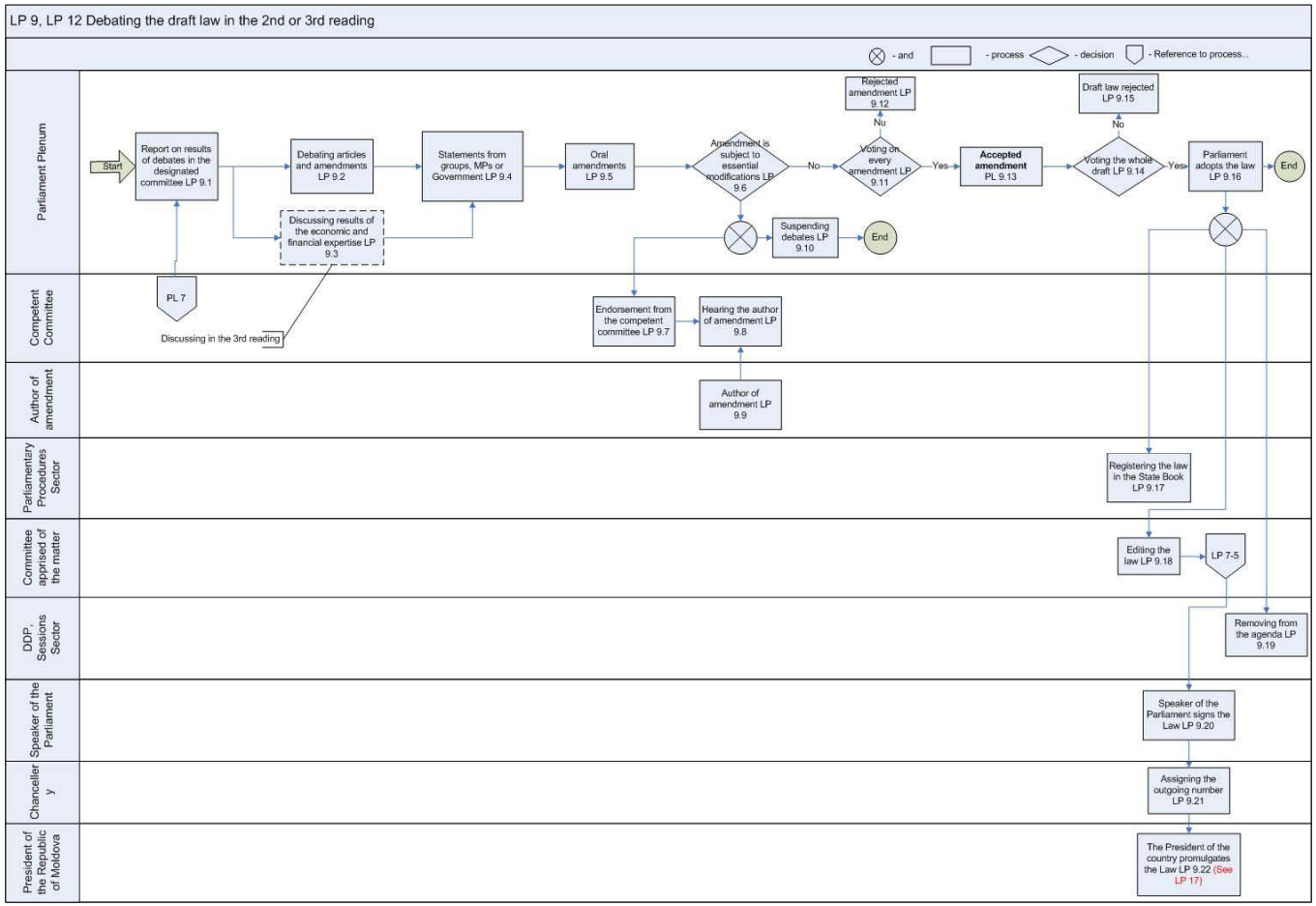
LP 7.14

For the draft law to be debated at the Parliament's plenum, the committee will send the Sessions Sector the subjects to be included in the agenda. Subjects will be accepted only after the competent standing committee will present committee's report on the draft law or the legislative proposal.

LP 8 Report of the competent standing committee

Presenting the report on results of draft law debates within the competent committee.

10.1.9 Debating the draft law in the 2nd or 3rd readings (LP 9, LP 12)



LP 9.1

Competent standing committee hears the report. The report is presented by committee's head or one of the members appointed by the committee.

LP 9.2

The draft law is debated by articles. Discussions regarding articles start with amendments. During debates by articles, MPs and authors of amendments proposed after the first/second reading may justify proposals made by them and rejected by the committee. The amendment should relate to the contents of one article.

LP 9.3

During the debate of the draft law in the third reading, results of economic and financial expertise will be discussed.

LP 9.4

During discussions on each article, MPs may express their group's or their own point of view. The Government representative will also take the floor.

LP 9.5

Verbal amendments can be made during speeches.

LP 9.6 - LP 9.10

If the amendment reveals an essential modification of the draft law, the head of the session may send it for approval to competent committees, thus suspending debates. In this case, the author of the amendment may be heard within committees.

LP 9.11

The Parliament will vote each amendment, except for cases when the adoption of one amendment leads to the exclusion of others (see VP).

LP 9.12

If the voted amendment does not meet the necessary number of votes, it is rejected.

LP 9.13

If the voted amendment meets the necessary number of votes, it is accepted.

LP 9.14

Voting the entire draft law (see VP).

LP 9.15

If the voted draft law does not meet the necessary number of votes, it is rejected.

LP 9.16

If the voted draft law meets the necessary number of votes, it is passed.

LP 9.17

The passed law is registered in the State Book by the parliamentary procedures section.

LP 9.18

The passed law is sent to the competent committee for editing and verification of its compliance with the records, in line with amendments made after debates at Parliament's session.

LP 9.19

After approval, the draft law is removed from the agenda by the Sessions Sector.

LP 9.20

Laws and decisions approved by the Parliament are signed by the Speaker of the Parliament and according to art. 13 line (1), by one of the Deputy Speakers of the Parliament within at most 20 days from approval.

LP 9.21 – LP 9.22

The law is submitted by the Speaker or by one of the Deputy Speakers of the Parliament (through the Parliament Chancellery) to the President of the Republic of Moldova for promulgation within 25 working days from its approval. (see LP 14).

10.1.10 Examining the draft law in the third reading (LP 10)

Examination of the draft law in the third reading (see LP 7) consists of the following:

1) sending the amendments to the competent standing committee or to another competent committee and Government for examination and presentation of reports and approval within 3 weeks;
2) carrying out an impartial economic and financial expertise on amendments upon Parliament's decision;

10.1.11 Report of the relevant standing committee (LP 11)

Following the examination of amendments and carrying out the economic and financial expertise, the competent committee will present a report within 3 weeks.

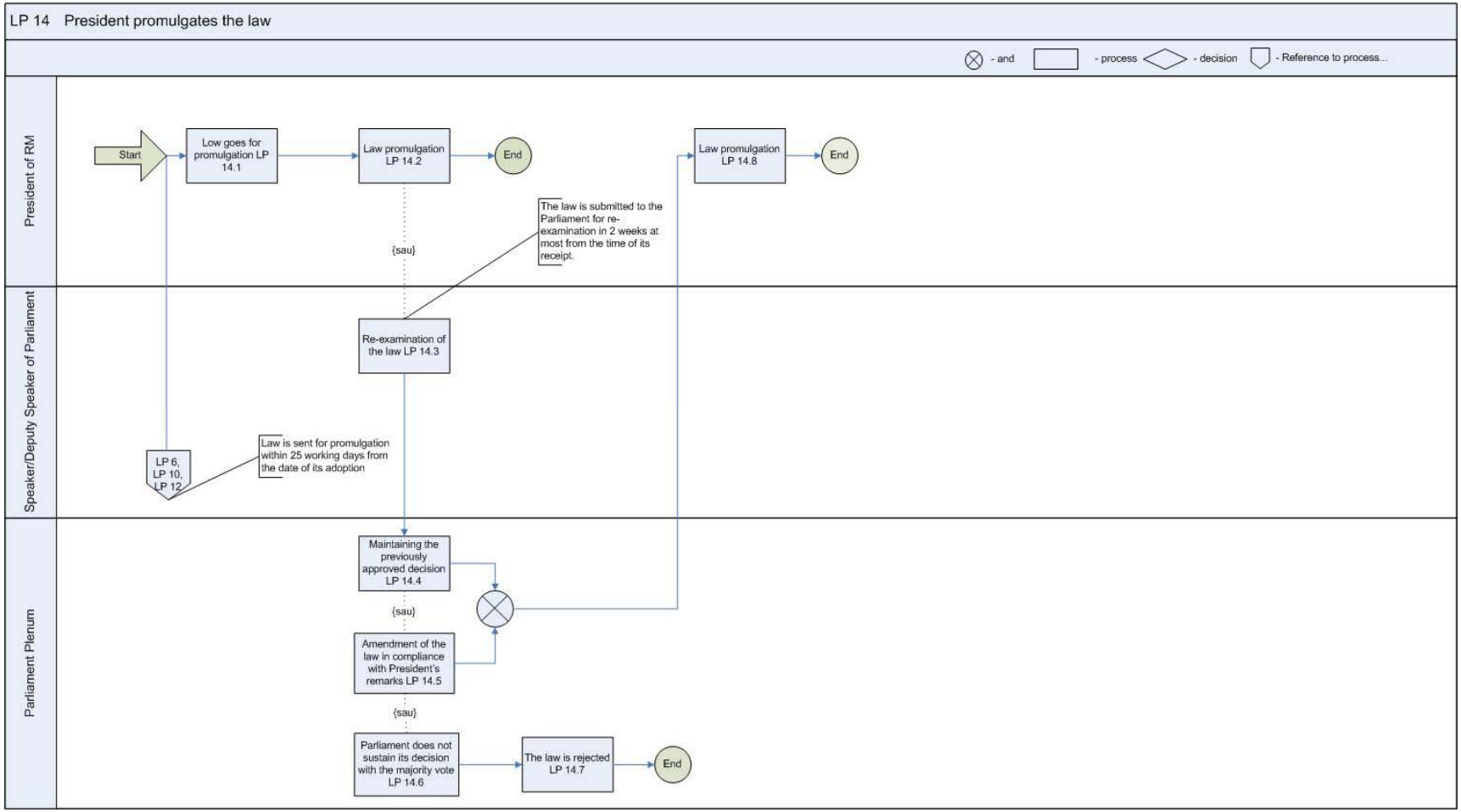
10.1.12 Debating in the third reading (LP 12)

Debating the draft law in the third reading will be made at Parliament's decision when adopting constitutional draft laws, organic draft laws related to budget, finance and economy that require considerable spending of funds, international treaties, as well as when in the course of draft law debating in the second reading essential amendments that lead to a considerable increase of expenditures during the implementation of the law were proposed (see LP 9).

10.1.13 Signing of the law by the Speaker or one of Deputy Speakers of Parliament (LP 13)

Laws and decisions approved by the Parliament are signed by the Speaker of Parliament and according to art. 13, line (1), by one of the Deputy Speakers of Parliament within at most 20 days from approval (see LP 6, LP 9).

10.1.14 President promulgates the law (LP 14)



LP 14.1

The law is submitted by the Speaker or by one of Deputy Speakers of Parliament (through the Parliament Chancellery) to the President of the Republic of Moldova for promulgation within 25 working days from its approval.

LP 14.2

Promulgation of the law by the President.

LP 14.3

If the President of the Republic of Moldova has objections regarding the law, he is entitled to return it to the Parliament for re-examination within at most 2 weeks after receipt. The President may request the Parliament to re-examine the law only once.

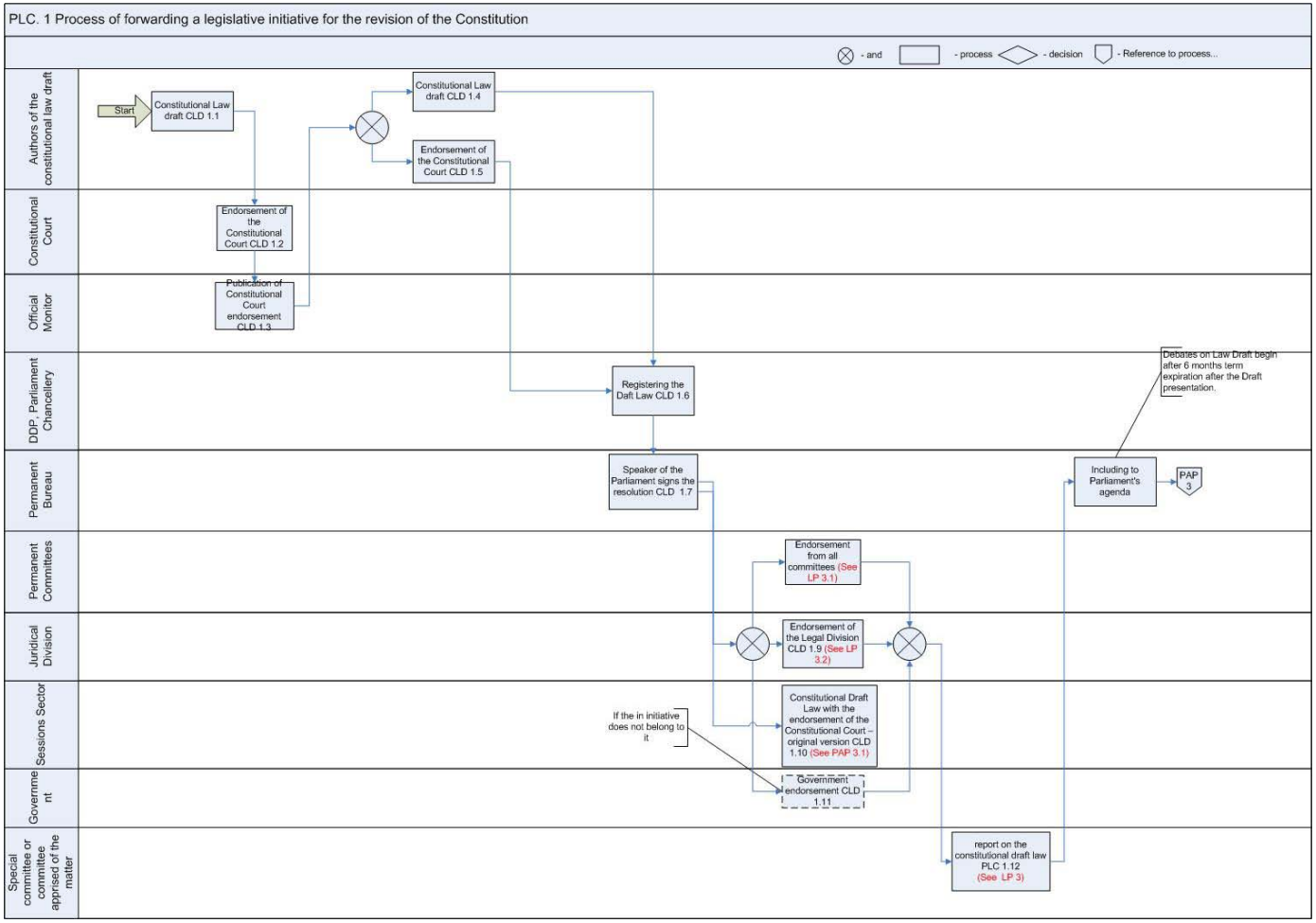
LP 14.4 – LP 14.5, LP 14.8

If following the re-examination Parliament keeps the previous decision or amends the law in line with President's objections, the President is compelled to promulgate the law within at most 2 weeks from the date of law registration in the Presidency.

LP 14.6

If following the re-examination of the law sent by the President of the Republic of Moldova Parliament doesn't sustain its decision with a majority vote, the law is considered rejected.

10.1.15 Process of forwarding a legislative initiative for the revision of the Constitution (LP 1)



A review of the Constitution and approval of laws regarding the amendment of the Constitution is carried out in compliance with art.141, 141 and 143 of the Constitution.

CLP 1.1 – CLP 1.5

Constitutional draft laws will be presented to the Parliament only together with the approval of the Constitutional Court, approved by the vote of at least 4 judges and following the publication of the approval in the Official Paper (Monitorul Oficial).

CLP 1.6

The constitutional draft law is registered at the Parliament's Chancellery only if it comprises all drafting elements.

CLP 1.7

The Speaker of Parliament signs the resolution on the constitutional draft law and submits it to the Chancellery.

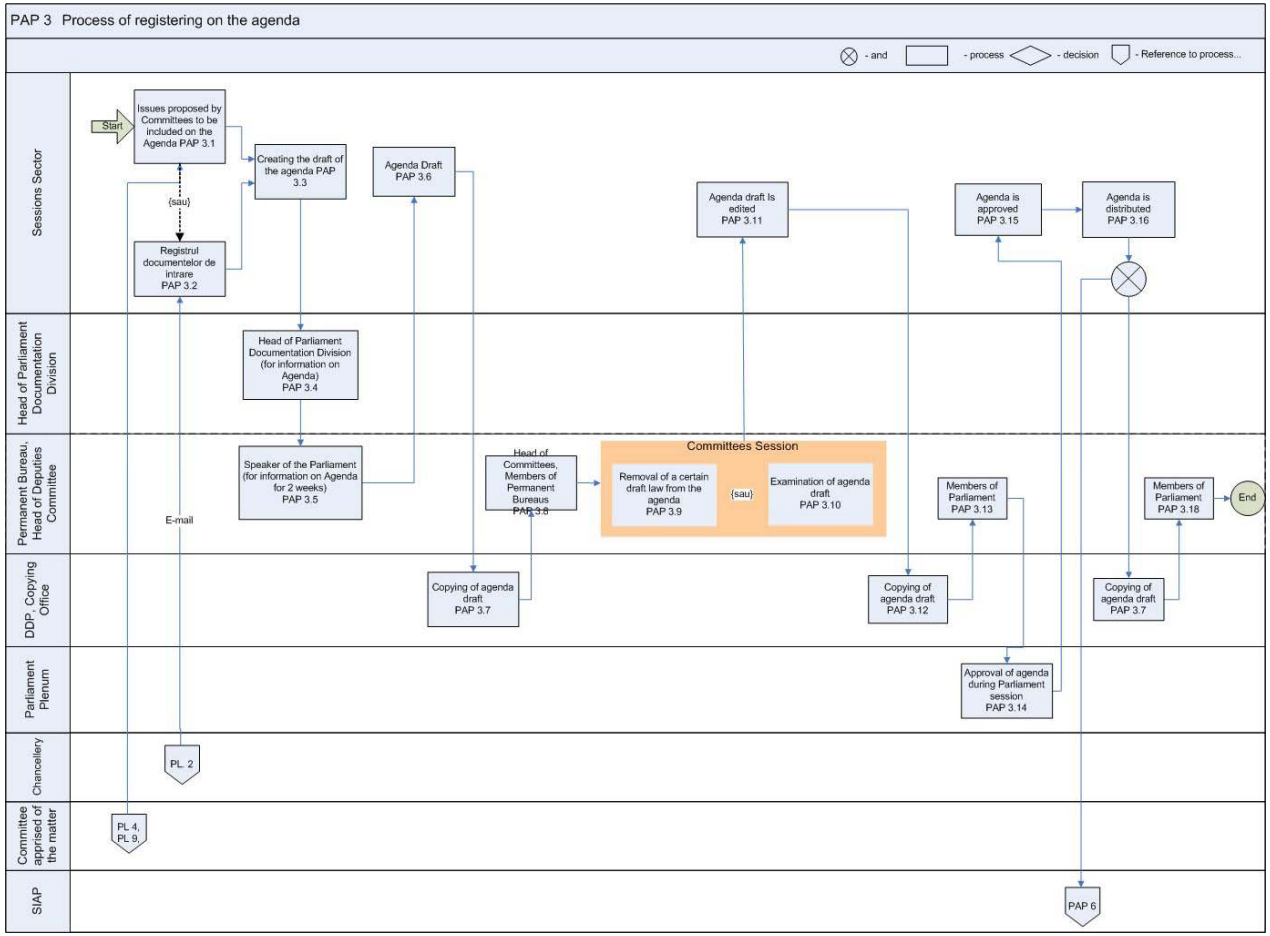
CLP 1.8 – CLP 1.11

To debate constitutional draft laws, approvals of all standing committees are requested on a mandatory basis, the approval of the legal division of Parliament Apparatus, as well as Government approval if the initiative does not come from the Government.

CLP 1.12

Based on endorsements mentioned in line (1), the special committee or the standing committee prepares a report on the constitutional draft law and submits it to the Standing Bureau within 15 days from the expiry of the 6 months term from the time of presenting the specific draft. The report contains an assessment of the appropriateness of planned amendments, as well as their possible future impacts. The constitutional draft laws are debated during at least 2 readings.

10.1.16 Inclusion into the agenda (PAP 3)



PAP 3

Following the debates of the draft law within the competent committee, its members decide on the date of including the debates over the draft law on the agenda of the Parliament plenum. Issues proposed by the committee are submitted (once in two weeks) to the Sessions Sector for the development of draft agenda.

PAP 3.2

During the process of developing the agenda of the Parliament session, Parliament's Chancellery submits (by e-mail) (once a day) the Register of incoming documents from which the information necessary for the development of the daily agenda is extracted to the Sessions Sector.

PAP 3.3

Based on issues proposed by committees and the register of incoming documents, a draft of the daily agenda is worked out.

PAP 3.4 – PAP 3.5

The draft of the agenda is submitted for information to the head of parliamentary documentation division and to the Speaker of the Parliament.

PAP 3.6 – PAP 3.8

The draft of the agenda is submitted for photocopying, after which it is submitted to heads of committees and members of the Standing Bureau.

PAP 3.9 – PAP 3.10

During the meeting of the Standing Bureau, the draft of the agenda is discussed. During the examination of the draft agenda, the head of the committee may request the removal of a certain draft law from the agenda.

PAP 3.11-PAP 3.13

Following the examination within the meeting of the Standing Bureau, the daft law is edited, sent for photocopying to the Photocopying bureau and distributed to MPs.

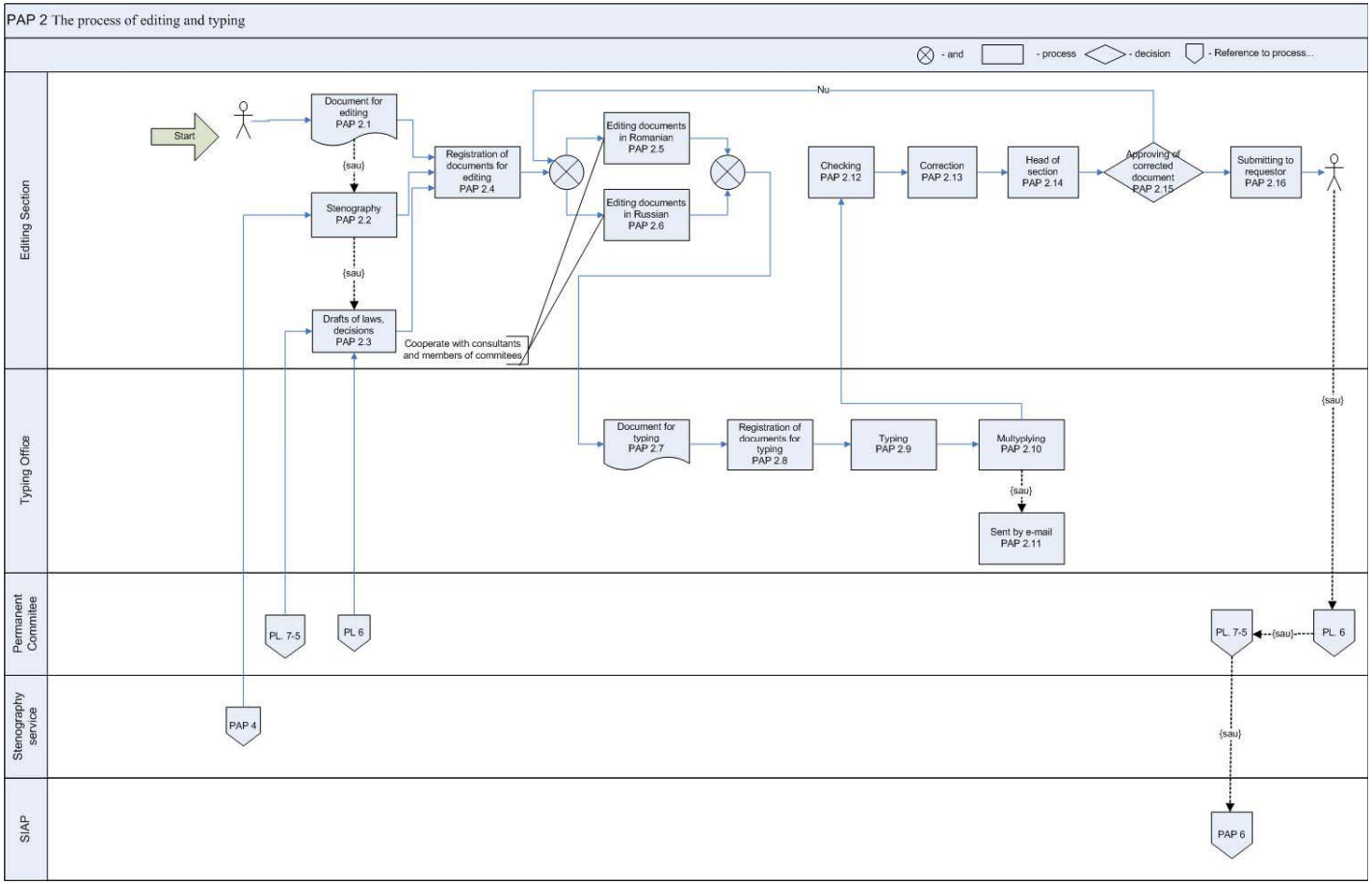
PAP 3.14

The agenda is approved by MPs during Parliament session.

PAP 3.15 – PAP 3.18

The approved agenda is distributed as to meetings, sent to the information-analysis and forecasting Service for publication on the official web site of the Parliament, submitted for photocopying and distributed to MPs.

10.1.17 Editing and typing (PAP 2)



10.1.18 PAP 2.1 – PAP 2.3

Draft laws, decisions, records of sessions as well as other documents that will be presented in the Parliament are subject to editing and typing. The editing and typing are carried out by Parliament documentation Division: Editing Section and Typing Office.

PAP 2.4

The document that came for editing is recorded in the register of incoming documents (see Instruction on working with documents in Moldovan Parliament, Annex 4).

PAP 2.5 – PAP 2.6

The first step of the editing procedure is the work of editors on the document. Editing will be done in Romanian and Russian by editors, consultants of committees and authors.

PAP 2.7 – PAP 2.11

Edited document is submitted to the typing office to be typed.

PAP 2.13

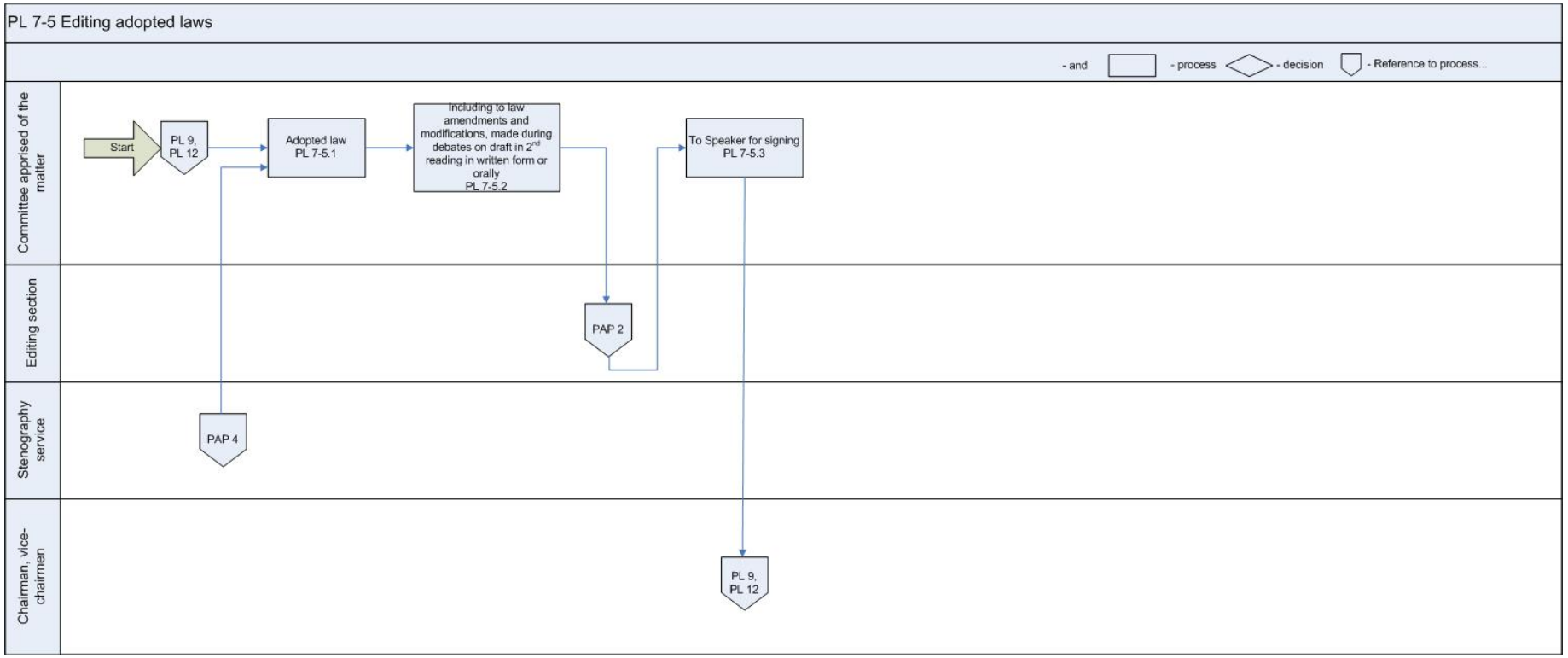
The typed document is sent back to the editing section to undergo the correction procedure.

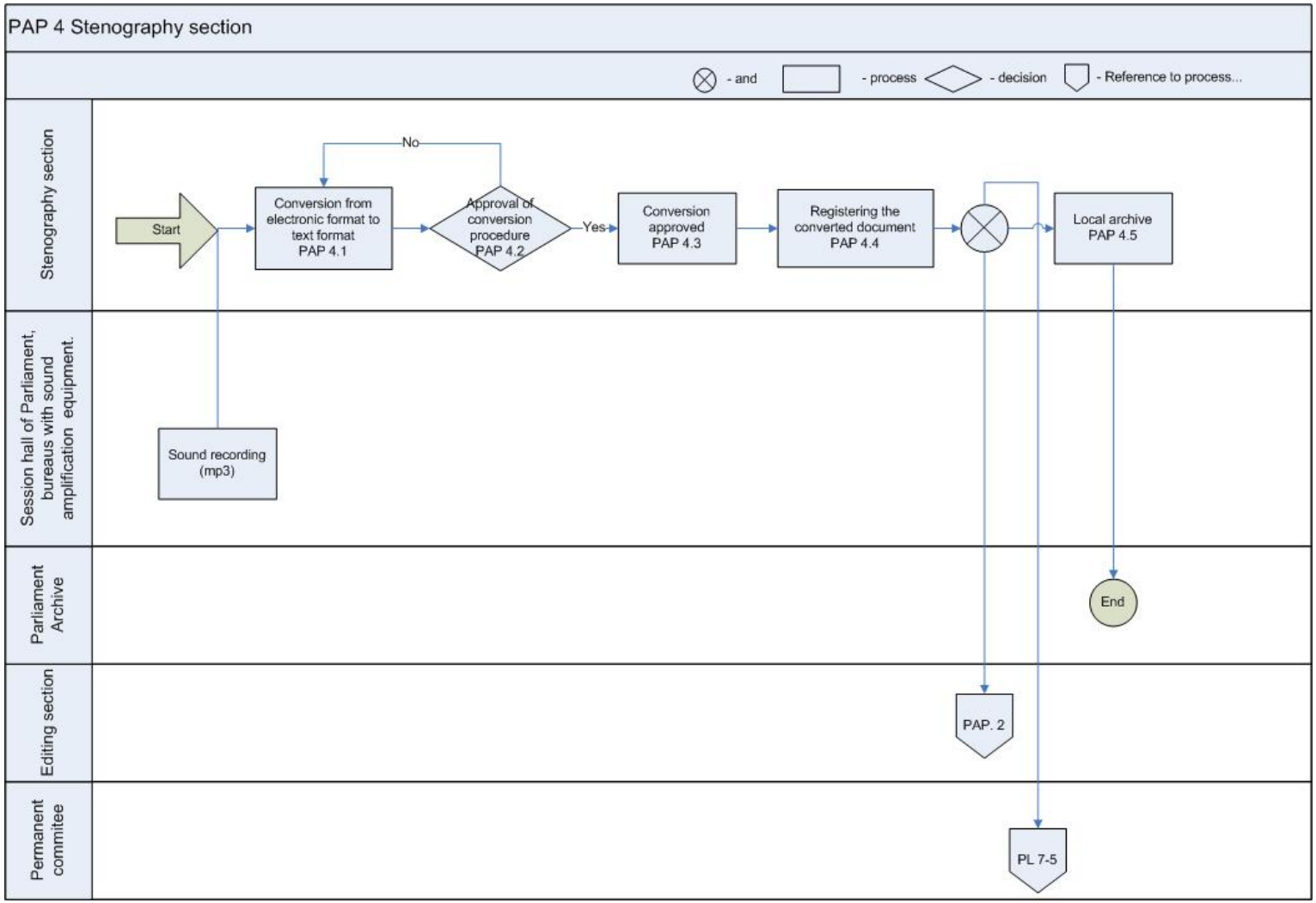
PAP 2.14

The last step of the editing procedure is the collation of document.

PAP 2.15 – PAP 2.17

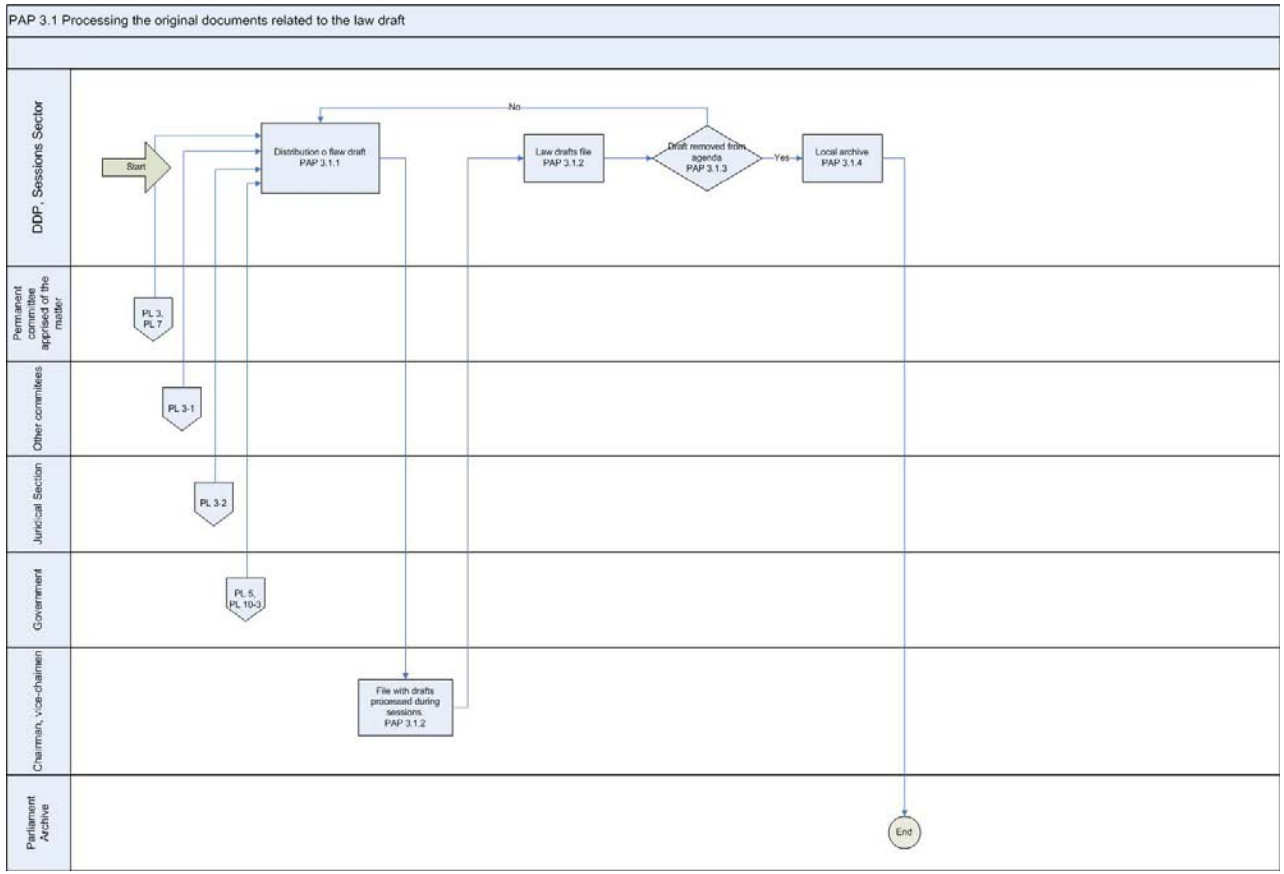
The final version of the collated document is approved by the head of editing section after which it is submitted to the requester (MPs, parliament committees, information-analysis and forecasting Service etc.).


PL 7-5 Editing adopted laws
- and
- process
- decision
- Reference to process...
Committee apprised of the matter
Editing section
Stenography service
Chairman, vice-chairmen
Start
PL 9, PL 12
Adopted law PL 7-5.1
Including to law amendments and modifications, made during debates on draft in 2nd reading in written form or orally PL 7-5.2
To Speaker for signing PL 7-5.3
PAP 2
PAP 4
PL 9, PL 12

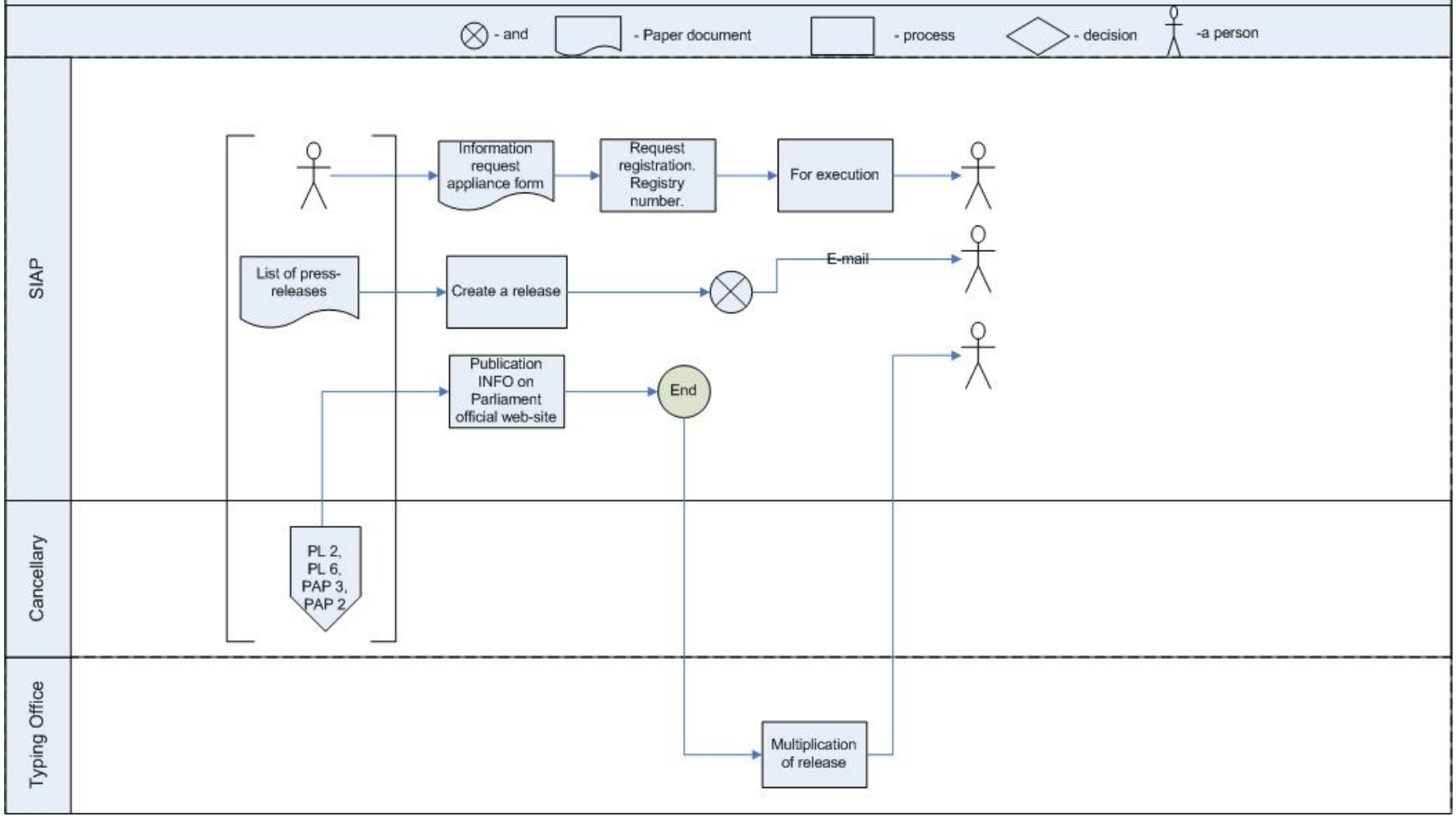

PAP 4 Stenography section
- and
- process
- decision
- Reference to process...
Stenography section
Session hall of Parliament, bureaus with sound amplification equipment.
Parliament Archive
Editing section
Permanent commitee
Start
Conversion from electronic format to text format PAP 4.1
No
Approval of conversion procedure PAP 4.2
Yes
Conversion approved PAP 4.3
Registering the converted document PAP 4.4
Local archive PAP 4.5
Sound recording (mp3)
End
PAP. 2
PL 7-5

10.1.19 Filing of original documents related to the draft law (PAP 3.1)

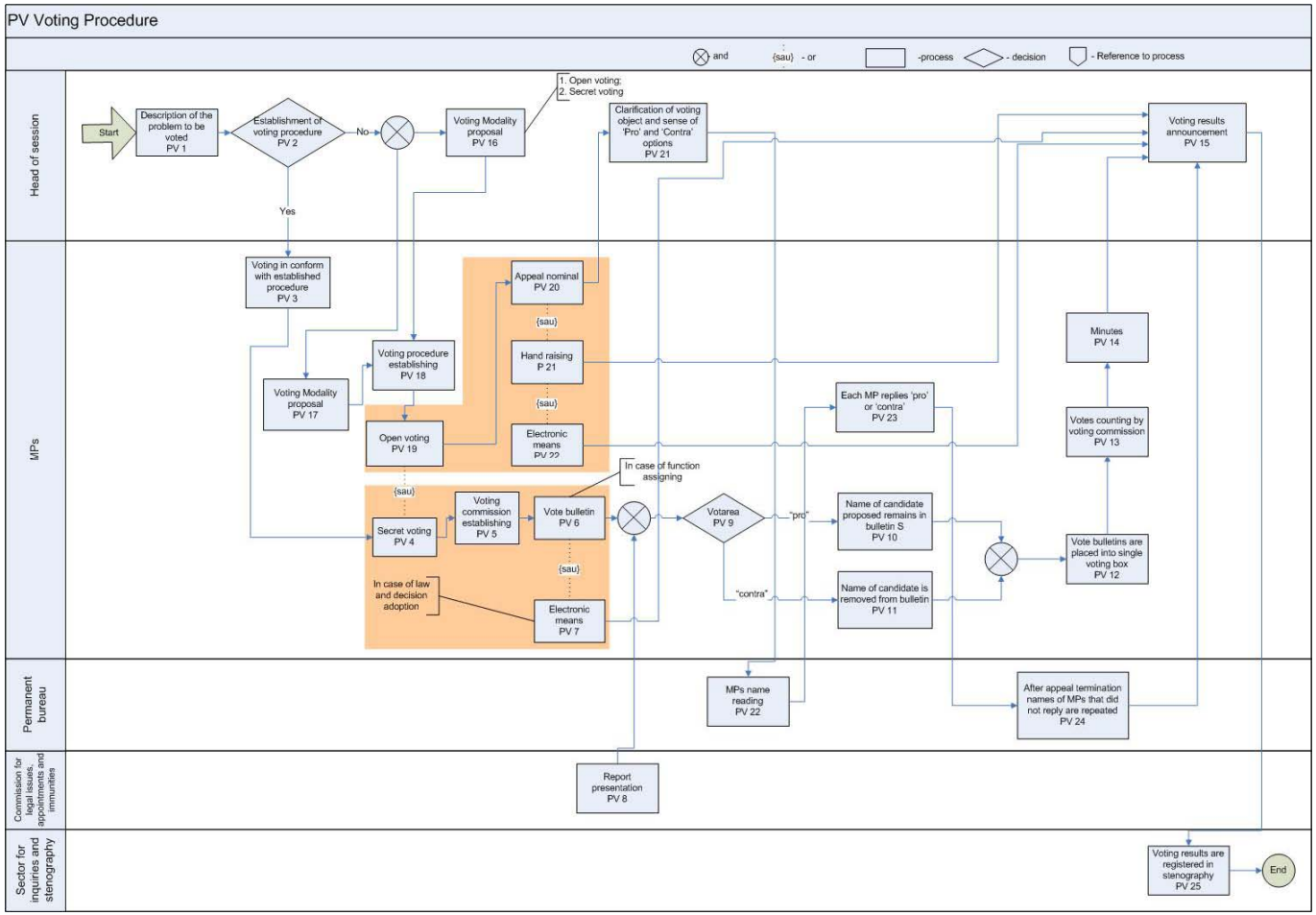
The original documents and materials distributed to the Members of Parliament are filed in the Sector for meeting arrangements up to their adoption in the Parliament, and after the expiry of one year, are filed in the Parliament's Archives.



PAP. 6 Process of Information Request. Information-analysis and forecasting Service of Parliament.
(See Regalement of SInformation-analysis and forecasting Service)



10.2 Annex 2. Voting Procedure (VP1)



VP 1

Before voting, the head of the session clearly formulates the subject that will be voted without commenting it.

VP 2 – VP 4

If the voting procedure is provided for in the Regulations, the secret vote procedure will be run.

VP 5

In case of secret voting, Parliament will create a voting committee that will work during the voting period.

VP 6

In case of appointing someone to a position, voting through ballots will be used. In case of voting through ballots, the ballot will indicate the name and surname of the candidate, the function he/she candidates for and the Parliament group he/she is part of.

VP 8

While developing the report, the committee will examine the candidates for selection or appointment, or proposals for assignment of state officials, having the right to call for hearing the respective persons.

VP 9 – VP 11

By voting “for” the deputy leaves the name and surname of the proposed candidate unmarked, by voting “against” he/she strikes his/her name out.

VP 12

Voting ballots are dropped in one ballot box.

VP 13 – VP 15

The voting committee will count the votes, will prepare the minutes of the voting that will be approved by the Parliament and will announce the results of the vote.

VP 7

When laws and decisions are being adopted, the secret vote will be carried out electronically.

VP 16 - VP 18

If the voting procedure was not established by the Regulations, the Parliament makes the decision, upon the proposal of the head of session, concerning the voting modality.

VP 19 - VP 22

The open vote is expressed by show-of-hand, through nominal appeal or electronically.

VP 20

The voting through nominal appeal is done in the following manner.

VP 21

The head of the session explains the object of voting and the sense of words “for” and “against”.

VP 22

One of the members of the Standing Bureau reads the name and surname of MPs.

VP 23

Every deputy answers “for” or “against”

VP 24

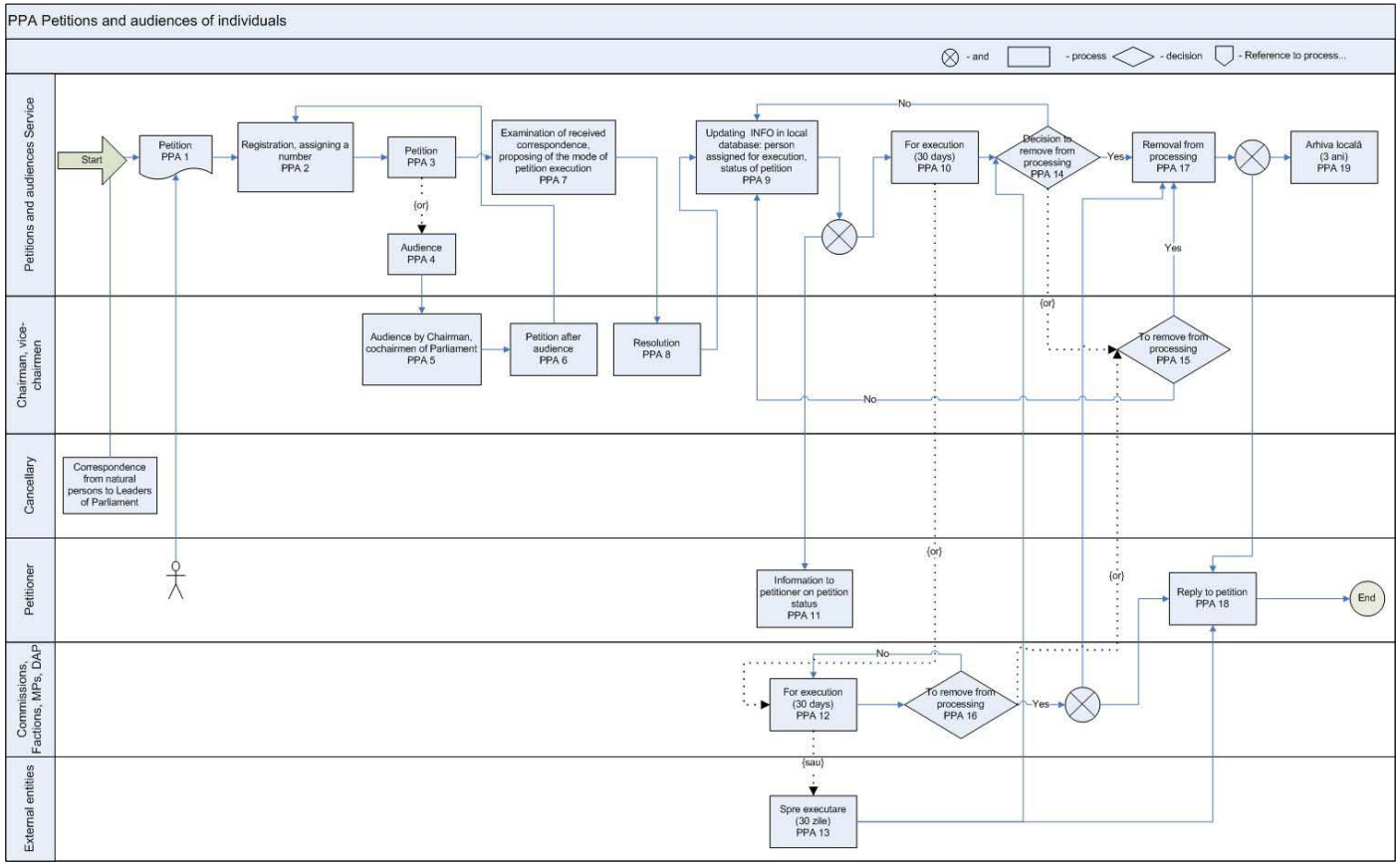
After the completion of the appeal, the names of MPs who did not answer are repeated.

VP 25

The results of the voting are clearly announced for the record.

10.3 Annex 3. Petitions and audiences of individuals (PPA)

(See the Guidelines for conducting secretarial activities relating to petitions of natural persons, legally established organizations, addressed to state bodies, enterprises, institutions and organizations of the Republic of Moldova.)



PPA 1

Petitions of the individuals addressed to the Parliament and its leadership are sent for registration to the Service for petitions and audience.

PPA 2

Received petitions, including those received during audiences, are registered by stamping, an incoming number is given and the date and hour of receipt indicated. The registration and recording of petitions is done automatically in the Lotus data base.

PPA 4 –PPA 6

The audience program of petitioners is coordinated with the leadership of the Parliament. During the audience, petitioners are offered specific explanations. If the issues discussed during the audience require a further examination, the petitioner is recommended to forward a petition. Petitions presented at the audience are examined in compliance with the Law on petitions.

PPA 7

Registered correspondence is examined and proposals regarding the execution method will be made.

PPA 8

Registered petitions are submitted for examination to the Parliament leadership the day they were received. Parliament leadership will make a resolution that will indicate the executor and the time of petition resolution.

PPA 9

The information from the control card is re-initialized, by indicating the executor, execution term and the change in the petition status.

PPA 10, PPA 12, PPA 13

Based on the resolution of Parliament leadership, petitions are submitted to executors in view of preparing an answer with a respective note in the file of record. Execution term of petition is 30 days but it can be prolonged depending upon the case by the Speaker/Deputy Speaker of Parliament.

PPA 11

In order to inform the petitioner on the stage of petition processing, he/she is informed through a letter on the status of petition and the term of answer receipt.

PPA 14, PPA 15, PPA 16, PPA 17

The decision to remove the petition belongs to Parliament leadership, head of committee, group or head of petitions service. The petition is considered solved if the issues indicated in it have been considered and specific action was taken on it or the petitioner received specific explanation.

If it is decided that the answer was incomplete or requires further action, the petition is sent to the executor for re-examination.

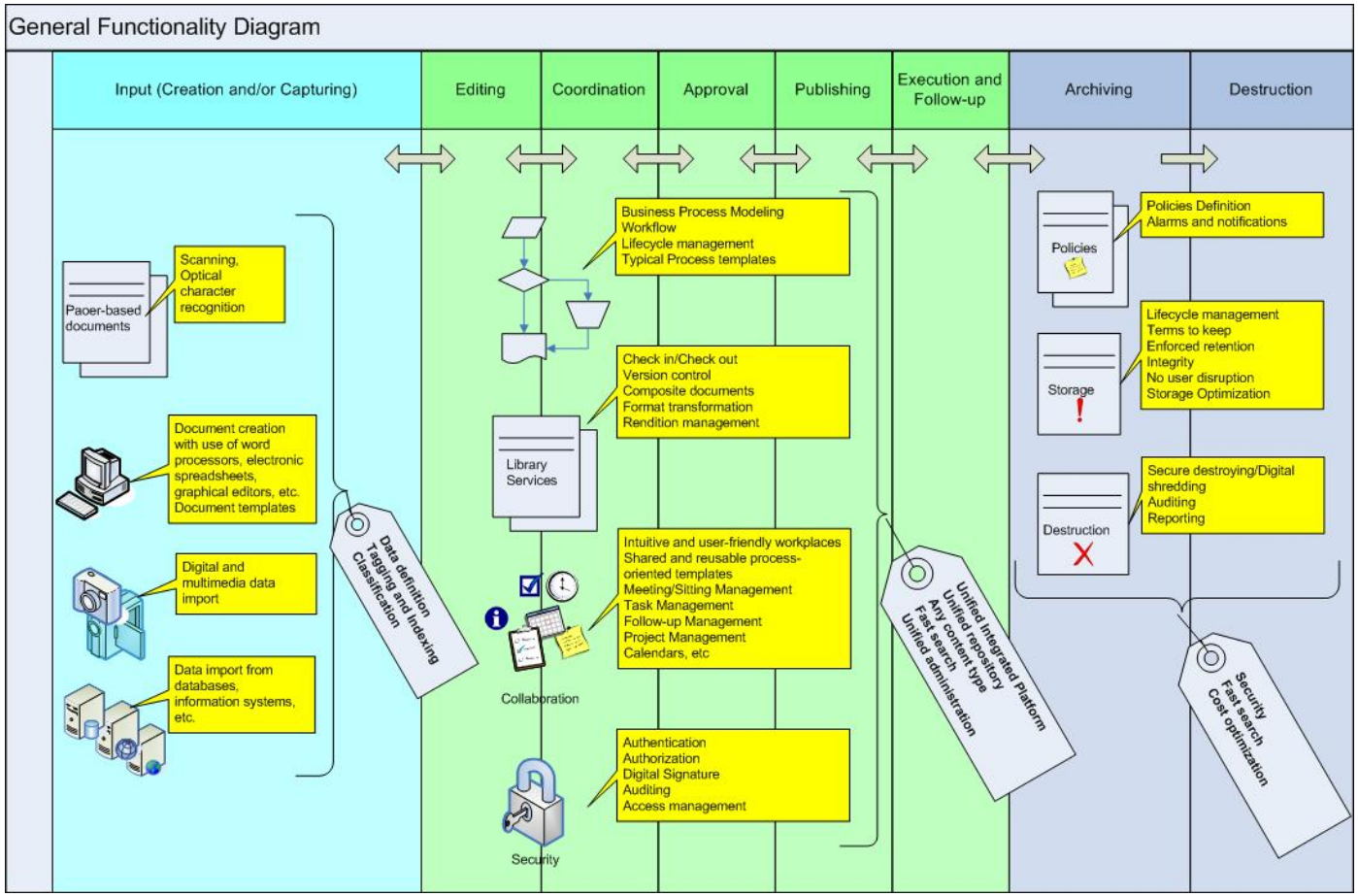
PPA 18

The answer is sent to the petitioner.

PPA 19

Following the examination, complete resolution and provision of answer to the petitioner, every petition will be marked “to folder”, signed by the person responsible for control and a folder is made according to the classified list of folders. The folder is submitted to the local archive and is kept for 3 years.

10.4 Annex 4. Recommended diagram for automation of the document flow



10.5 Annex 5. Personal Computers. Endowment with PCs of the Moldovan Parliament structures

Parliamentary Committees

Table 10-1 Standing Committees of the Moldovan Parliament

	MPs					Employees					Total				
	No. of persons	No. of PCs	QTY IND	QAUL IND	Q-Q IND	No. of persons	No. of PCs	QTY IND	QAUL IND	Q-Q IND	No. of persons	No. of PCs	QTY IND	QAUL IND	Q-Q IND
Committee for legal issues, appointments and immunities	11	8	0.73	3.13	2.27	8	4	0.5	3.5	1.75	19	12	0.63	3.25	2.05
Committee for economic policy, budget and finance	13	8	0.62	3.38	2.08	8	7	0.88	3.14	2.75	21	15	0.71	3.27	2.33
Committee for national security, defense and public order	12	7	0.58	3.57	2.08	4	4	1.00	2.25	2.25	16	11	0.69	3.09	2.13
Committee foreign policy and European integration	11	6	0.55	4.00	2.18	4	4	1.00	2.50	2.50	15	10	0.67	3.40	2.27
Committee for human rights	9	5	0.56	3.80	2.11	4	4	1.00	3.00	3.00	13	9	0.69	3.44	2.38
Committee for public administration, environmental protection and territory development	11	3	0.27	4.00	1.09	4	2	0.50	3.50	1.75	15	5	0.33	3.80	1.27
Committee for culture, science, education, youth, sports and mass media	11	4	0.36	3.25	1.18	5	5	1.00	2.80	2.80	16	9	0.56	3.00	1.69
Committee for agriculture and food industry	11	4	0.36	3.00	1.09	4	2	0.50	3.00	1.50	15	6	0.40	3.00	1.20
Committee for social protection, health and family	11	4	0.36	3.75	1.36	5	2	0.40	3.50	1.40	16	6	0.38	3.67	1.38

Figure 10.5-1 Parliamentary Committees: Quantitative indicator of provision with PCs

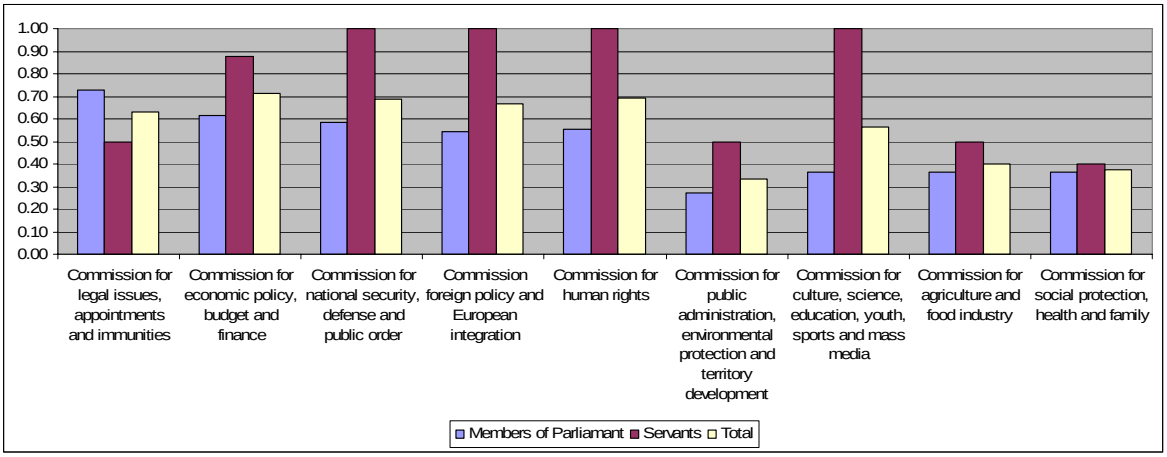


Figure 10.5-2 Parliamentary Committees: Qualitative indicator of provision with PCs

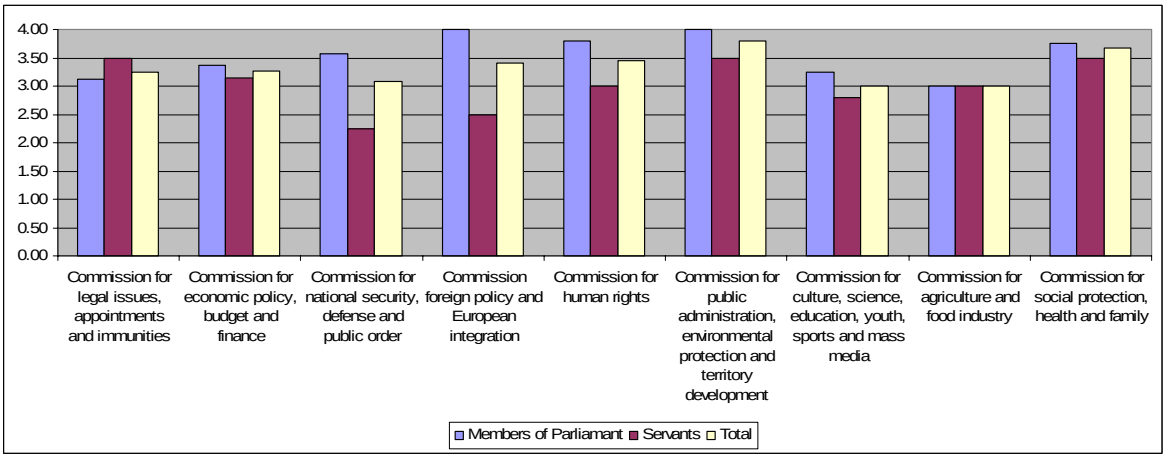
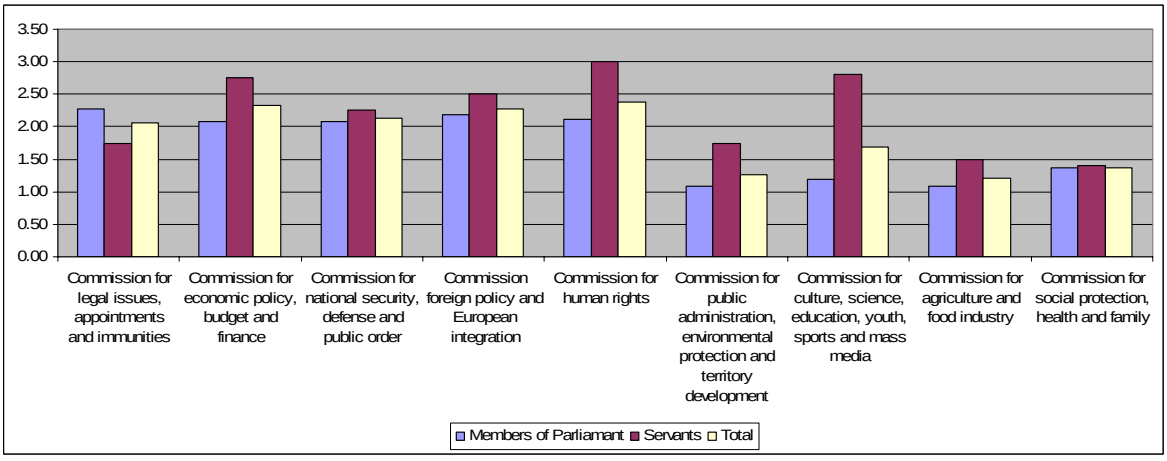


Figure 10.5-3 Parliamentary Committees: Qualitative-quantitative indicator of provision with PCs

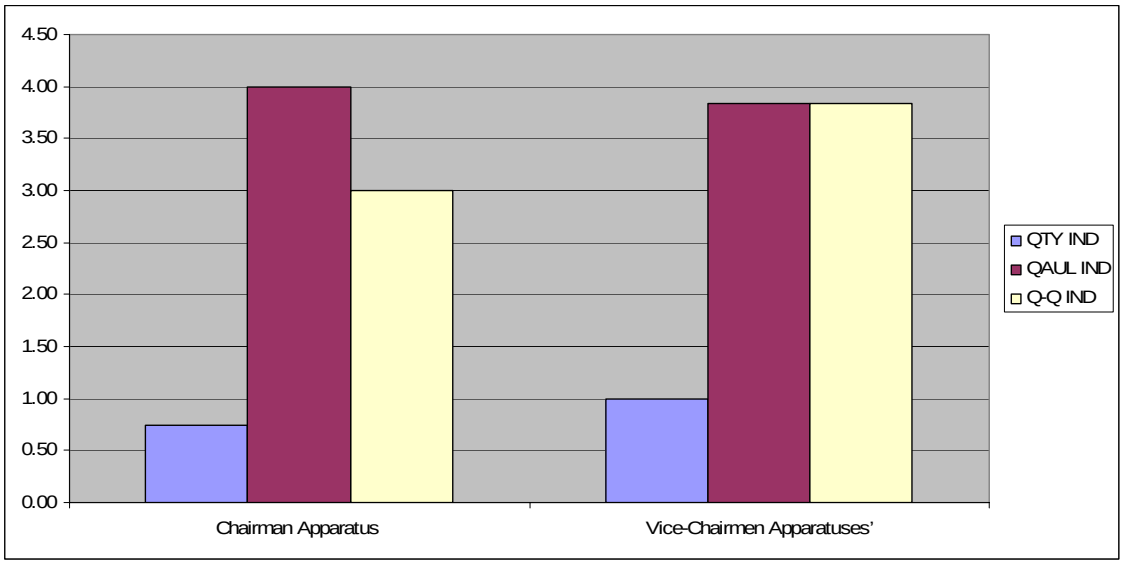


Secretariats of the Chairman and Vice-Chairmen of the Parliament

Table 10-2 Secretariats of the Chairman and Vice-Chairmen of the Parliament

	No. of persons	No. of PCs	QTY IND	QAUL IND	Q-Q IND
Secretariat of the Chairman	4	3	0.75	4.00	3.00
Secretariats of the Vice-Chairmen	6	6	1.00	3.83	3.83

Figure 10.5-4 Indicator of endowment with PCs of the staff of the Chairperson and Vice-Chairpersons

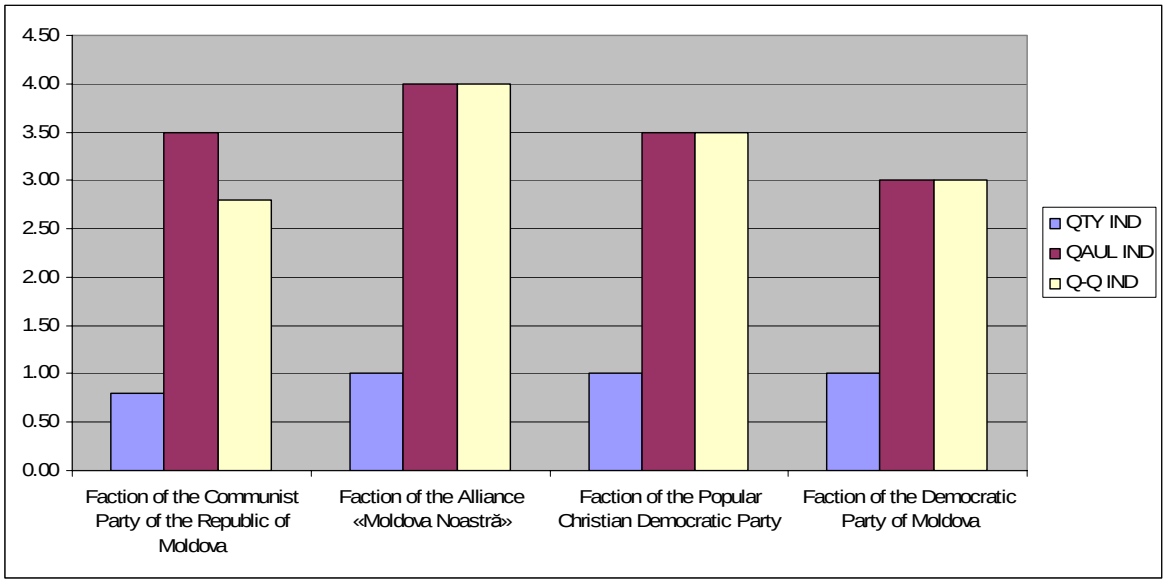


The secretariats of parliamentary factions

Table 10-3 The staff of parliamentary factions

	No. of persons	**No. of PCs**	**QTY IND**	**QAUL IND**	**Q-Q IND**
Faction of the Communist Party of the Republic of Moldova	5	4	0.80	3.50	2.80
Faction of the Alliance «Moldova Noastră»	3	3	1.00	4.00	4.00
Faction of the Popular Christian Democratic Party	2	2	1.00	3.50	3.50
Faction of the Democratic Party of Moldova	2	2	1.00	3.00	3.00

Figure 10.5-5 Indicator of endowment with PCs of the factions' staff

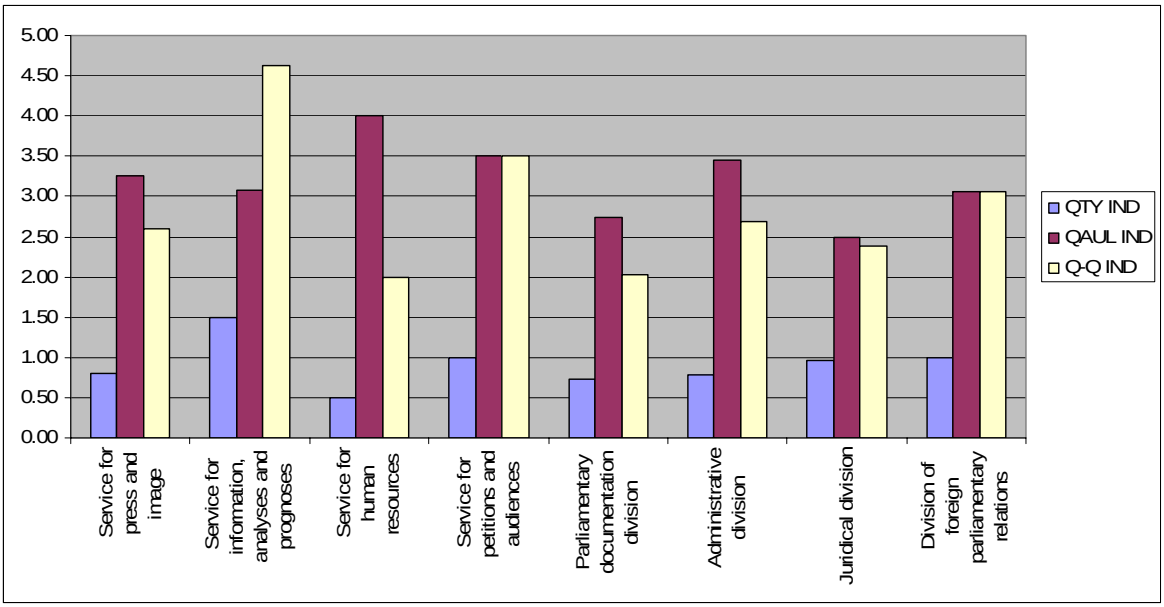


The Administration of the Parliament

Table 10-4 The Administration of the Parliament

	No. of persons	No. of PCs	QTY IND	QAUL IND	Q-Q IND
Service for press and image	5	4	0.80	3.25	2.60
Service for information, analyses and forecasts	8	12	1.50	3.08	4.63
Service for human resources	2	1	0.50	4.00	2.00
Service for petitions and audiences	6	6	1.00	3.50	3.50
Parliamentary documentation division	42	31	0.74	2.74	2.02
Administrative division	23	18	0.78	3.44	2.70
Legal division	23	22	0.96	2.50	2.39
Division of foreign parliamentary relations	15	15	1.00	3.07	3.07

Figure 10.5-6 Indicator of endowment with PCs of the Administration of the Parliament



Quantitative assessment

The value of indicator for the Parliament – 0.72.

Structures with the lowest values of the indicator:

Director General of the Parliament's Administration – 0.00

Committee for public administration, environmental protection and territory development – 0.33

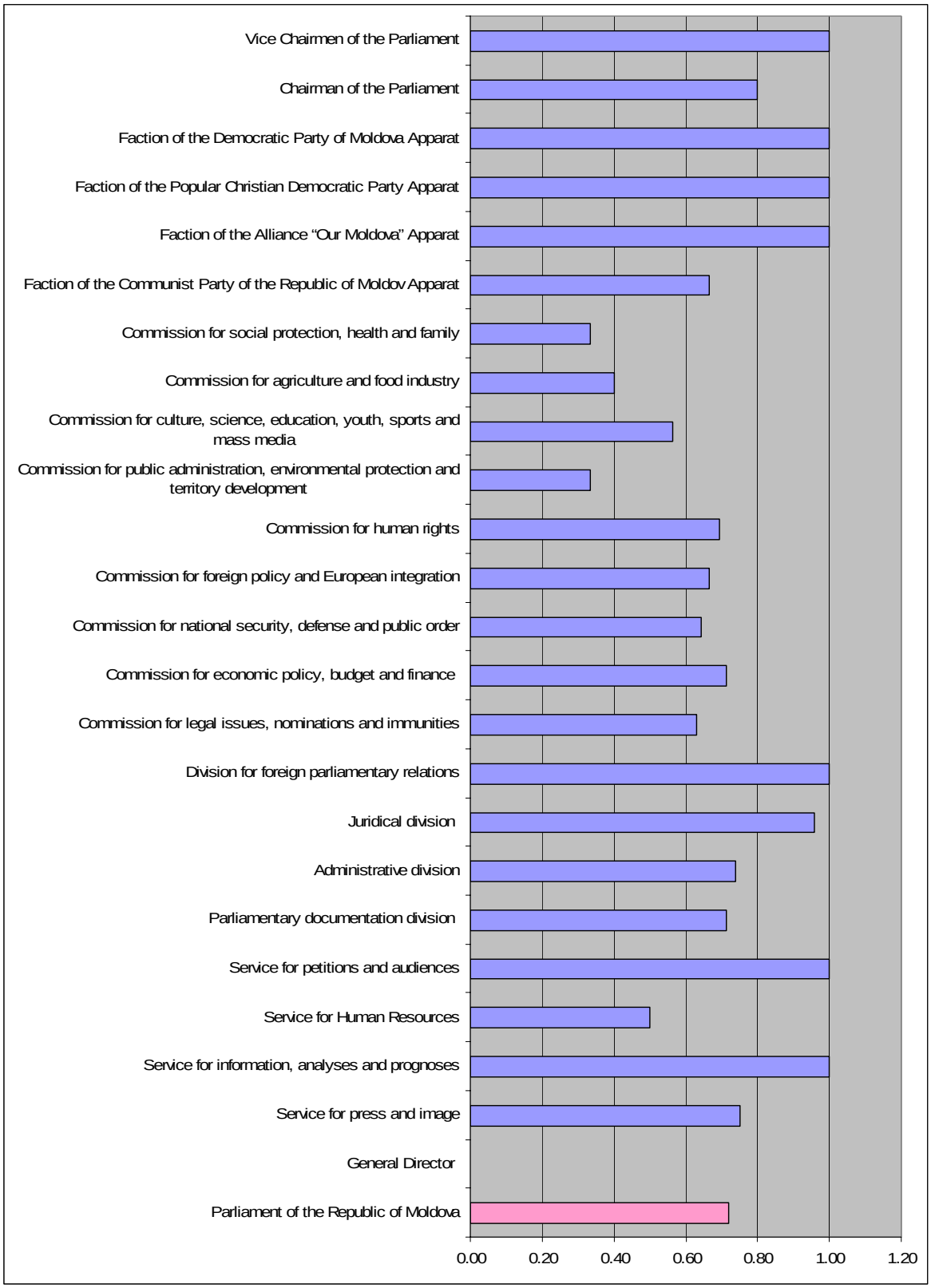
Committee for social protection, health and family – 0.33

Table 10-5 The value of quantitative indicator for the Parliament's structures

Structure	Qty_Ind
Director General	0.00
Service for press and image	0.75
Service for information, analyses and forecasts	1.00
Library	1.00
Service for human resources	0.50
Service for petitions and audiences	1.00
Parliamentary documentation division	0.71
Administrative division	0.74
Legal division	0.96
Division of foreign parliamentary relations	1.00
Committee for legal issues, appointments and immunities	0.63
Committee for economic policy, budget and finance	0.71
Committee for national security, defense and public order	0.64
Committee foreign policy and European integration	0.67
Committee for human rights	0.69
Committee for public administration, environmental protection and territory development	0.33
Committee for culture, science, education, youth, sports and mass media	0.56
Committee for agriculture and food industry	0.40
Committee for social protection, health and family	0.33

Faction of the Communist Party of the Republic of Moldova	0.67
Faction of the Alliance «Moldova Noastră»	1.00
Faction of the Popular Christian Democratic Party	1.00
Faction of the Democratic Party of Moldova	1.00
Staff of the Parliament's Chairperson	0.75
Staff of the Parliament's Vice-Chairpersons	1.00

Figure 10.5-7 The value of quantitative indicator for the Parliament structures



Qualitative assessment of personal computers

The value of indicator for the Parliament – 3.16

Structures with the lowest values of the indicator:

Legal division – 2.50

Table 10-6 The value of qualitative indicator for the Parliament structures

Structure	
Director General	n/a
Service for press and image	3.00
Service for information, analyses and forecasts	3.13
Library	3.00
Service for human resources	4.00
Service for petitions and audiences	3.50
Parliamentary documentation division	2.73
Administrative division	3.41
Legal division	2.50
Division of foreign parliamentary relations	3.00
Committee for legal issues, appointments and immunities	3.25
Committee for economic policy, budget and finance	3.27
Committee for national security, defense and public order	2.89
Committee foreign policy and European integration	3.25
Committee for human rights	3.44
Committee for public administration, environmental protection and territory development	3.80
Committee for culture, science, education, youth, sports and mass media	3.00
Committee for agriculture and food industry	3.00
Committee for social protection, health and family	3.60
Faction of the Communist Party of the Republic of Moldova	3.50

Faction of the Alliance «Moldova Noastră»	4.00
Faction of the Popular Christian Democratic Party	3.67
Faction of the Democratic Party of Moldova	3.33
Speaker of Parliament	4.00
Deputy Speakers of Parliament	3.88

Figure 10.5-8 The value of qualitative indicator for the Parliament structures

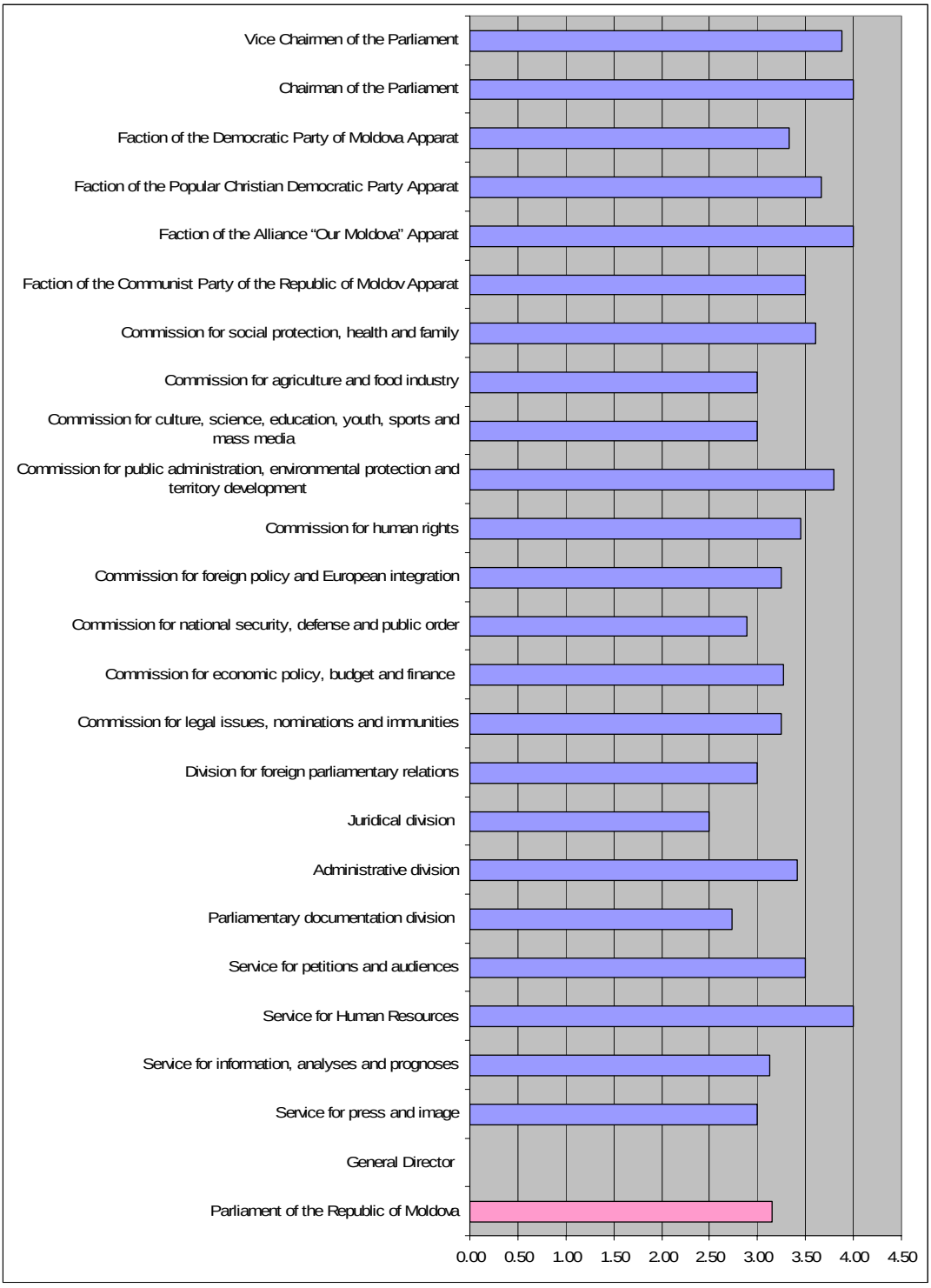
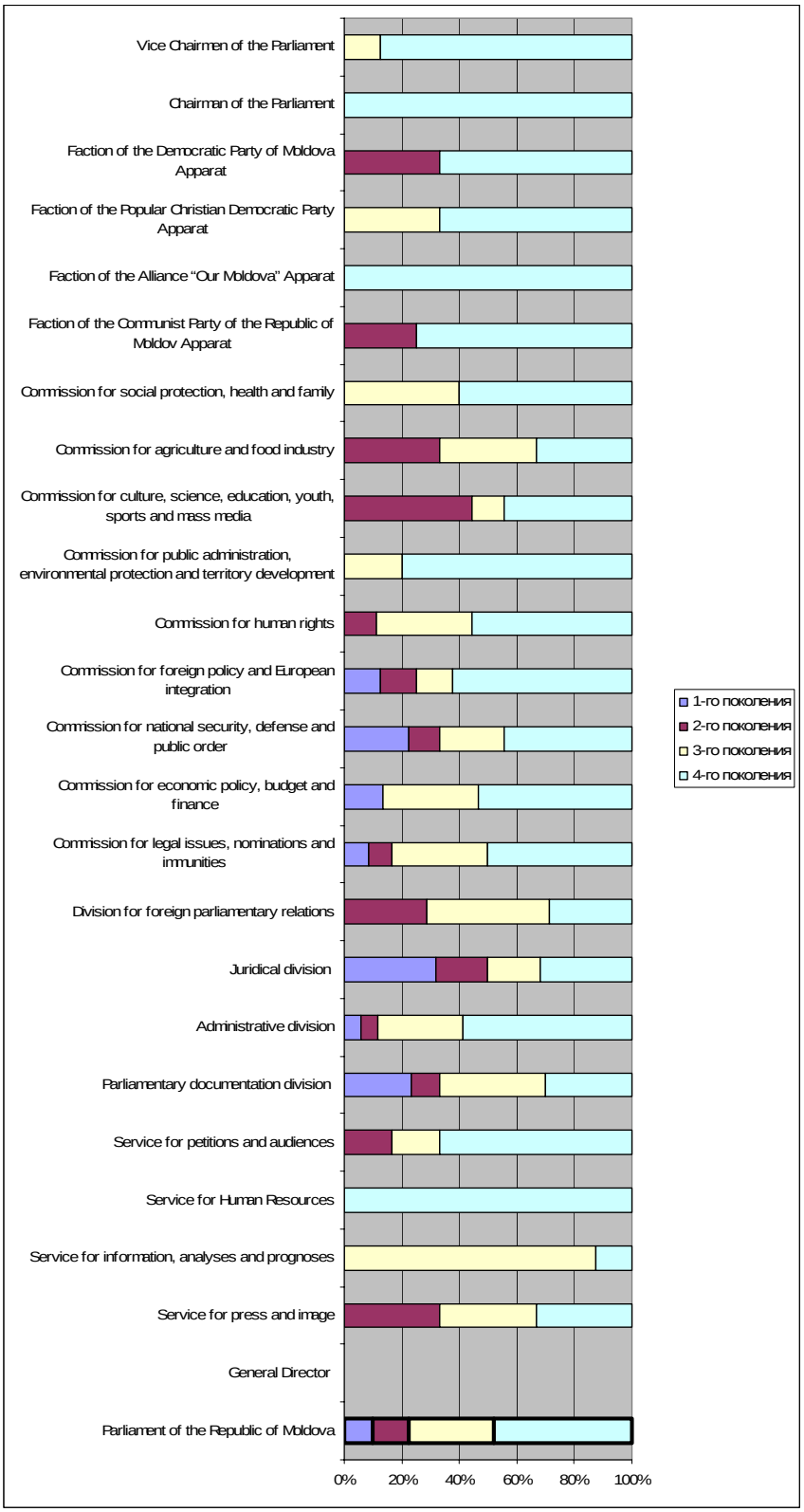


Figure 10.5-9 PCs in the Parliament structures by generation



Share of the 4th generation PCs in the Parliament – 47.87%

The Service for information, analyses and forecasts has the lowest value of the indicator– 12.5%

The Division of foreign parliamentary relations – 28.57%

The Parliamentary documentation division – 30%

Table 10-7 PCs in the Parliament's structures by generation

Structure	Share of PCs, by generation			
	1st	2nd	3rd	4th
Director General				
Service for press and image	0.00%	33.33%	33.33%	33.33%
Service for information, analyses and forecasts	0.00%	0.00%	87.50%	12.50%
Service for human resources	0.00%	0.00%	0.00%	100.00%
Service for petitions and audiences	0.00%	16.67%	16.67%	66.67%
Parliamentary documentation division	23.33%	10.00%	36.67%	30.00%
Administrative division	5.88%	5.88%	29.41%	58.82%
Legal division	31.82%	18.18%	18.18%	31.82%
Division of foreign parliamentary relations	0.00%	28.57%	42.86%	28.57%
Committee for legal issues, appointments and immunities	8.33%	8.33%	33.33%	50.00%
Committee for economic policy, budget and finance	13.33%	0.00%	33.33%	53.33%
Committee for national security, defense and public order	22.22%	11.11%	22.22%	44.44%
Committee foreign policy and European integration	12.50%	12.50%	12.50%	62.50%
Committee for human rights	0.00%	11.11%	33.33%	55.56%
Committee for public administration, environmental protection and territory development	0.00%	0.00%	20.00%	80.00%
Committee for culture, science, education, youth, sports and mass media	0.00%	44.44%	11.11%	44.44%
Committee for agriculture and food industry	0.00%	33.33%	33.33%	33.33%
Committee for social protection, health and family	0.00%	0.00%	40.00%	60.00%
Faction of the Communist Party of the Republic of Moldova	0.00%	25.00%	0.00%	75.00%

Faction of the Alliance «Moldova Noastră»	0.00%	0.00%	0.00%	100.00%
Faction of the Popular Christian Democratic Party	0.00%	0.00%	33.33%	66.67%
Faction of the Democratic Party of Moldova	0.00%	33.33%	0.00%	66.67%
Speaker of Parliament	0.00%	0.00%	0.00%	100.00%
Deputy Speakers of Parliament	0.00%	0.00%	12.50%	87.50%

Qualitative-quantitative assessment of endowment of work places with PCs

The average score for the Parliament is 2.27

The lowest score (1.20) was computed for the Committee for agriculture and food industry and the Committee for social protection, health and family.

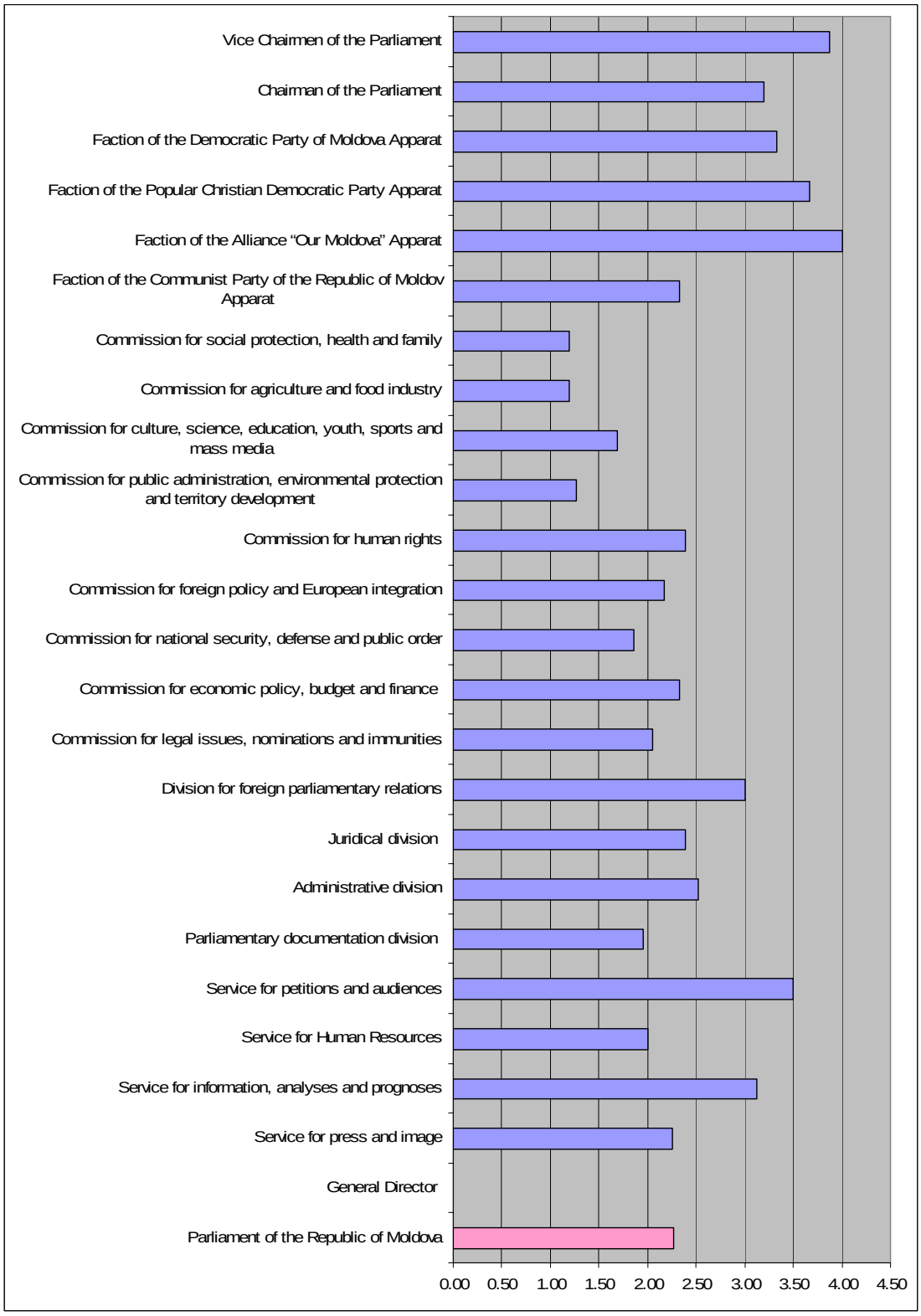
The highest lowest score (4.00) was computed for the Faction of the Alliance «Moldova Noastră».

Table 10-8 Quantitative-qualitative indicator of provision of workplaces with PCs

Structure	
Director General	0.00
Service for press and image	2.25
Service for information, analyses and forecasts	3.13
Library	3.00
Service for human resources	2.00
Service for petitions and audiences	3.50
Parliamentary documentation division	1.95
Administrative division	2.52
Legal division	2.39
Division of foreign parliamentary relations	3.00
Committee for legal issues, appointments and immunities	2.05
Committee for economic policy, budget and finance	2.33
Committee for national security, defense and public order	1.86
Committee foreign policy and European integration	2.17
Committee for human rights	2.38
Committee for public administration, environmental protection and territory development	1.27
Committee for culture, science, education, youth, sports and mass media	1.69
Committee for agriculture and food industry	1.20
Committee for social protection, health and family	1.20
Faction of the Communist Party of the Republic of Moldova	2.33

Faction of the Alliance «Moldova Noastră»	4.00
Faction of the Popular Christian Democratic Party	3.67
Faction of the Democratic Party of Moldova	3.33
Speaker of Parliament	3.20
Deputy Speakers of Parliament	3.88

Figure 10.5-10 Quantitative-qualitative indicator of endowment of work places with PCs



Assessment of endowment of the work places in sub-structures with PCs

Structure: Parliamentary documentation division

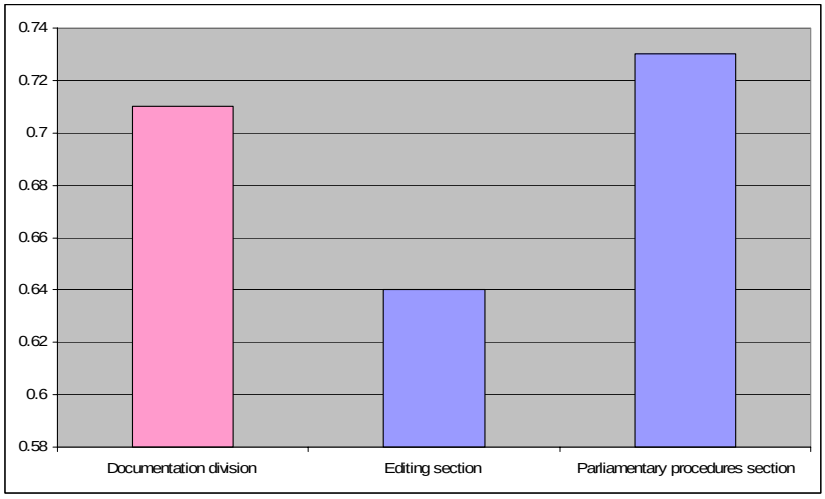
Quantitative assessment

The value of indicator for Parliamentary documentation division – 0.71

Table 10-9 The value of quantitative indicator for sub-structures, Parliamentary documentation division

Structure	
Editing section	0.64
Parliamentary procedures section	0.73

Figure 10.5-11 The value of quantitative indicator for sub-structures, Parliamentary documentation division



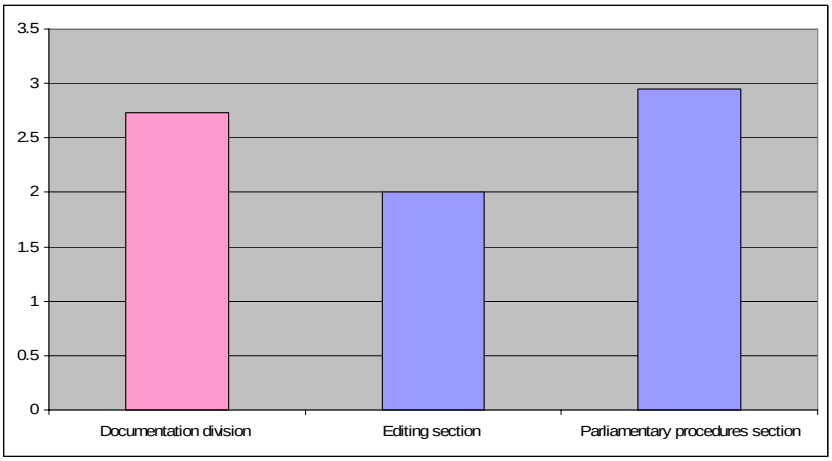
Qualitative assessment of PCs

The value of indicator for Parliamentary documentation division – 2.73

Table 10-10 The value of qualitative indicator for sub-structures, Parliamentary documentation division

Structure	
Editing section	2.00
Parliamentary procedures section	2.95

Figure 10.5-12 The value of qualitative indicator for sub-structures, Parliamentary documentation division



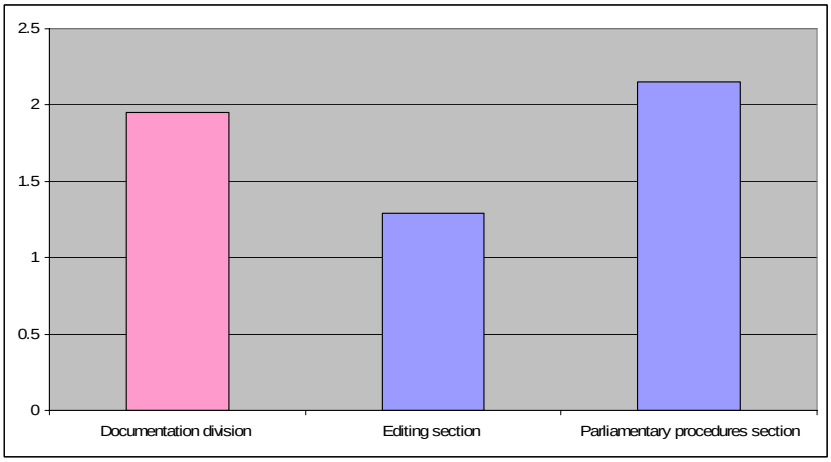
Parliamentary documentation division, editing section, Parliamentary procedures section

The value of indicator for Parliamentary documentation division – 1.95

Table 10-11 The value of quantitative-qualitative indicator for sub-structures, Parliamentary documentation division

Structure	
Editing section	1.29
Parliamentary procedures section	2.15

Figure 10.5-13 The value of quantitative-qualitative indicator for sub-structures, Parliamentary documentation division



Structure: Parliamentary documentation division, Parliamentary procedures section

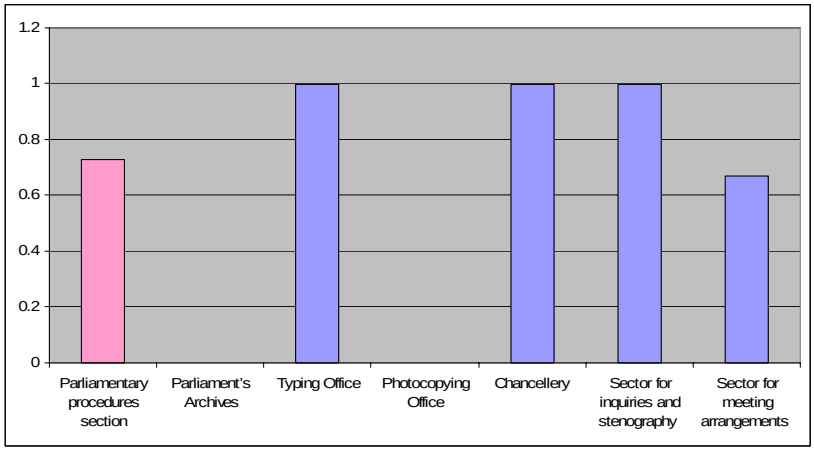
Quantitative assessment

The value of indicator for Parliamentary procedures section – 0.73

Table 10-12 The value of quantitative indicator for sub-structures, Parliamentary procedures section

Structure	
Parliament's Archives	0.00
Typing Office	1.00
Photocopying Office	0.00
Chancellery	1.00
Sector for inquiries and stenography	1.00
Sector for meeting arrangements	0.67

Figure 10.5-14 The value of quantitative indicator for sub-structures, Parliamentary procedures section



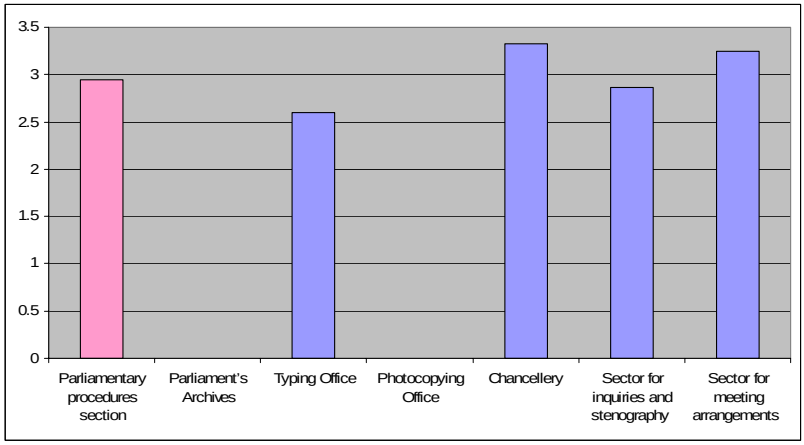
Qualitative assessment of PCs

The value of indicator for Parliamentary documentation division – 2.95

Table 10-13 The value of qualitative indicator for sub-structures, Parliamentary procedures section

Structure	
Parliament's Archives	n/a
Typing Office	2.60
Photocopying Office	n/a
Chancellery	3.33
Sector for inquiries and stenography	2.86
Sector for meeting arrangements	3.25

Figure 10.5-15 The value of qualitative indicator for sub-structures, Parliamentary procedures section



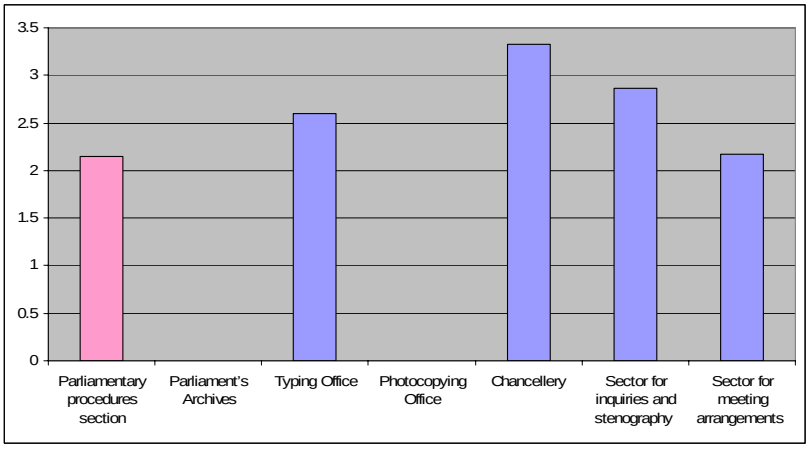
Qualitative-quantitative assessment of provision of workplaces with PCs

The value of indicator for Parliamentary documentation division – 2.15

Table 10-14 The value of qualitative-quantitative indicator for sub-structures, Parliamentary procedures section

Structure	
Parliament's Archives	0.00
Typing Office	2.60
Photocopying Office	0.00
Chancellery	3.33
Sector for inquiries and stenography	2.86
Sector for meeting arrangements	2.17

Figure 10.5-16 The value of qualitative-quantitative indicator for sub-structures, Parliamentary procedures section



Structure: Administrative division

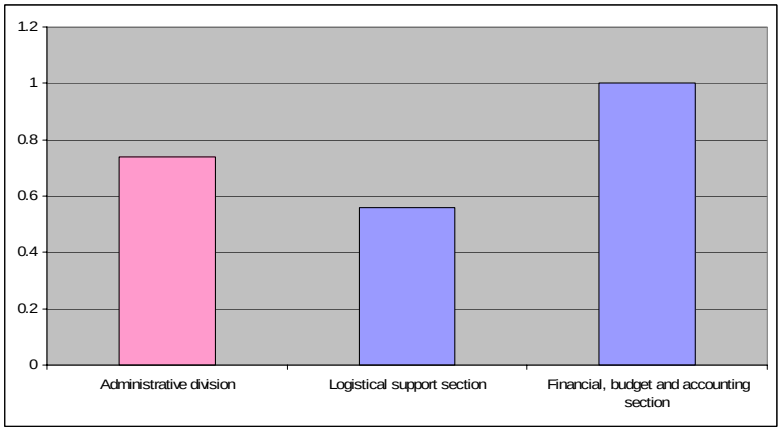
Quantitative assessment

The value of indicator for Administrative division – 0.74

Table 10-15 The value of quantitative indicator for sub-structures, Administrative division

Structure	
Logistical support section	0.56
Finance, budget and accounting section	1.00

Figure 10.5-17 The value of quantitative indicator for sub-structures, Parliamentary procedures section



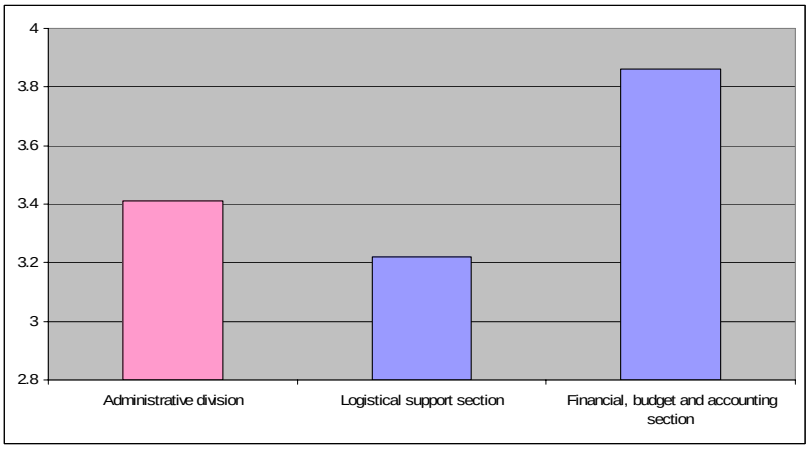
Qualitative assessment of PCs

The value of indicator for Administrative division – 3.41

Table 10-16 The value of qualitative indicator for sub-structures, Administrative division

Structure	
Logistical support section	3.22
Finance, budget and accounting section	3.86

Figure 10.5-18 The value of qualitative indicator for sub-structures, Administrative division



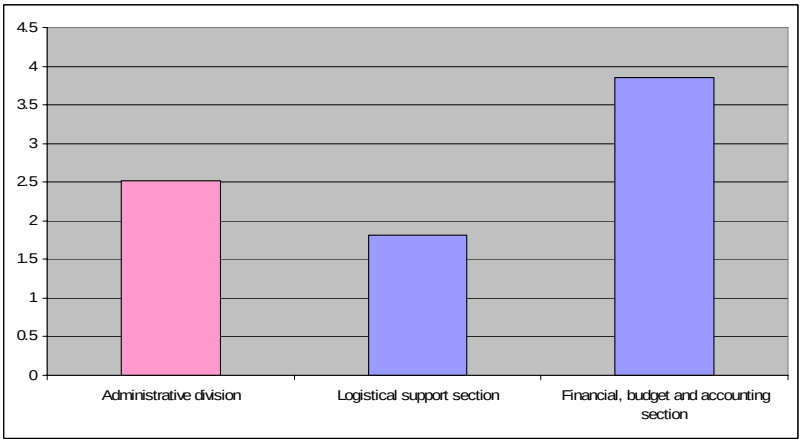
Qualitative-quantitative assessment of provision of workplaces with PCs

The value of indicator for Administrative division - 2.52

Table 10-17 The value of qualitative-quantitative indicator for sub-structures, Administrative division

Structure	
Logistical support section	1.81
Finance, budget and accounting section	3.86

Figure 10.5-19 The value of qualitative-quantitative indicator for sub-structures, Administrative division



Structure: Administrative division, Logistical support section

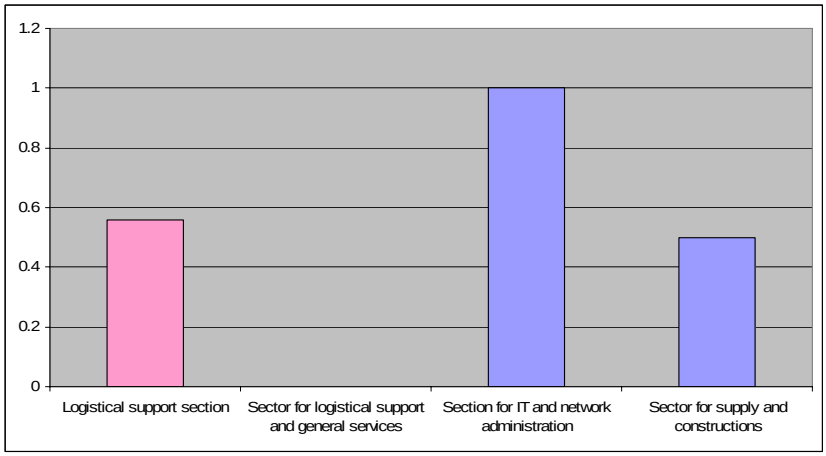
Quantitative assessment

The value of indicator for Logistical support section – 0.56

Table 10-18 The value of quantitative indicator for sub-structures, Logistical support section

Structure	
Sector for logistical support and general services	0.00
Section for IT and network administration	1.00
Sector for supplies and constructions	0.50

Figure 10.5-20 The value of quantitative indicator for sub-structures, Logistical support section



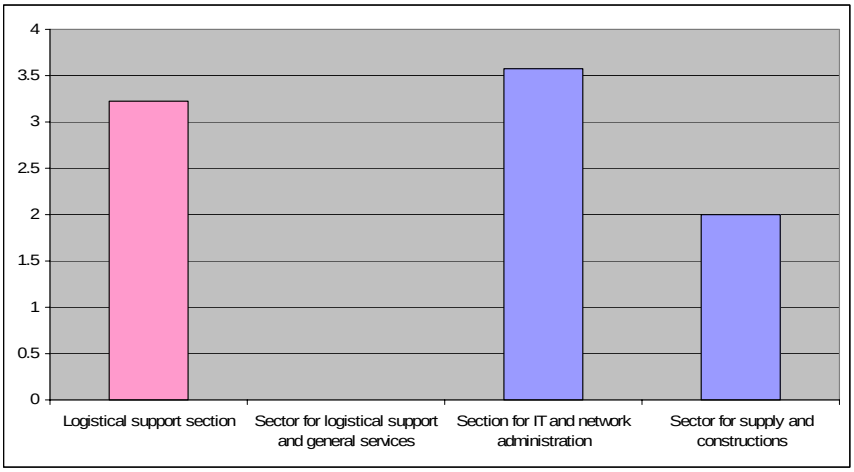
Qualitative assessment of PCs

The value of indicator for Logistical support section – 3.22

Table 10-19 The value of qualitative indicator for sub-structures, Logistical support section

Structure	
Sector for logistical support and general services	
Section for IT and network administration	3.57
Sector for supplies and constructions	2.00

Figure 10.5-21 The value of qualitative indicator for sub-structures, Logistical support section



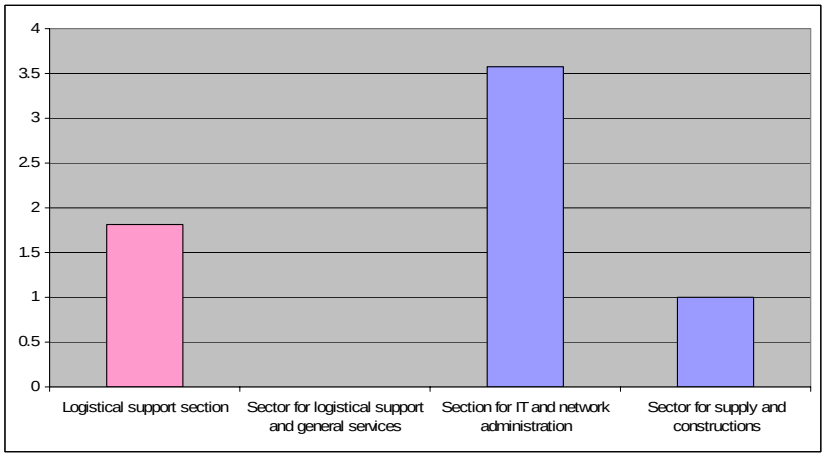
Qualitative-quantitative assessment of provision of workplaces with PCs

The value of indicator for Logistical support section – 1.81

Table 10-20 The value of qualitative-quantitative indicator for sub-structures, Logistical support section

Structure	
Sector for logistical support and general services	0.00
Section for IT and network administration	3.57
Sector for supplies and constructions	1.00

Figure 10.5-22 The value of qualitative-quantitative indicator for sub-structures, Logistical support section



Structure: Legal division

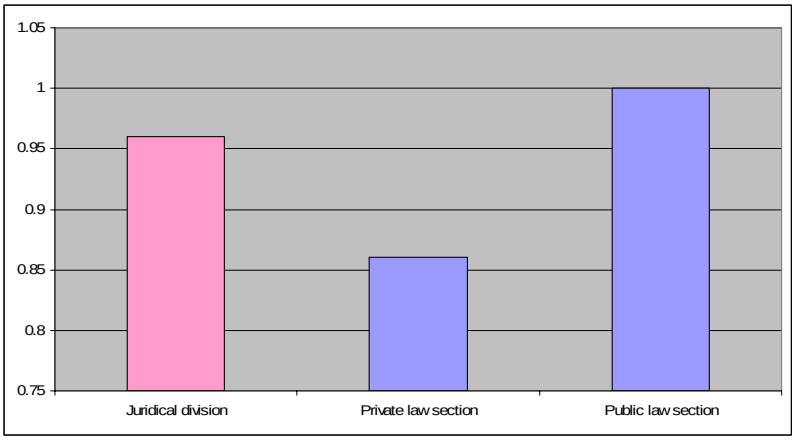
Quantitative assessment

The value of indicator for Legal division – 0.96

Table 10-21 The value of quantitative indicator for sub-structures, Legal division

Structure	
Private law section	0.86
Public law section	1.00

Figure 10.5-23 The value of quantitative indicator for sub-structures, Legal division



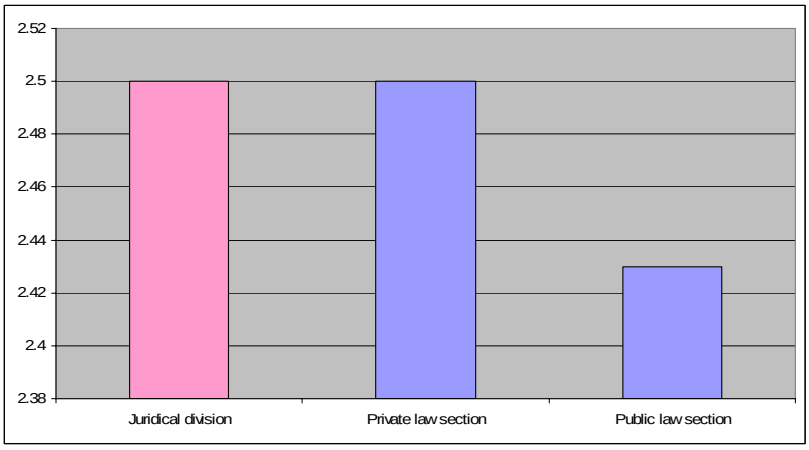
Qualitative assessment of PCs

The value of indicator for Legal division – 2.50

Table 10-22 The value of qualitative indicator for sub-structures, Legal division

Structure	
Private law section	2.50
Public law section	2.43

Figure 10.5-24 The value of qualitative indicator for sub-structures, Legal division



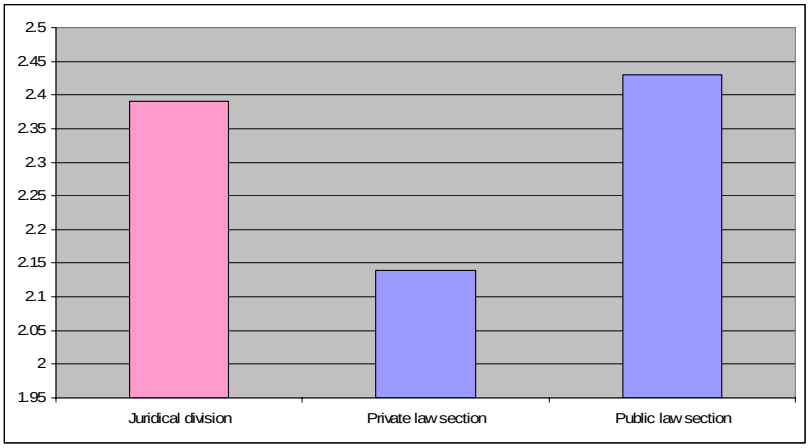
Qualitative-quantitative assessment of endowment of work places with PCs

The value of indicator for Legal division – 2.39

Table 10-23 The value of qualitative-quantitative indicator for sub-structures, Legal division

Structure	
Private law section	2.14
Public law section	2.43

Figure 10.5-25 The value of qualitative-quantitative indicator for sub-structures, Legal division



Structure: Legal division, Private law section

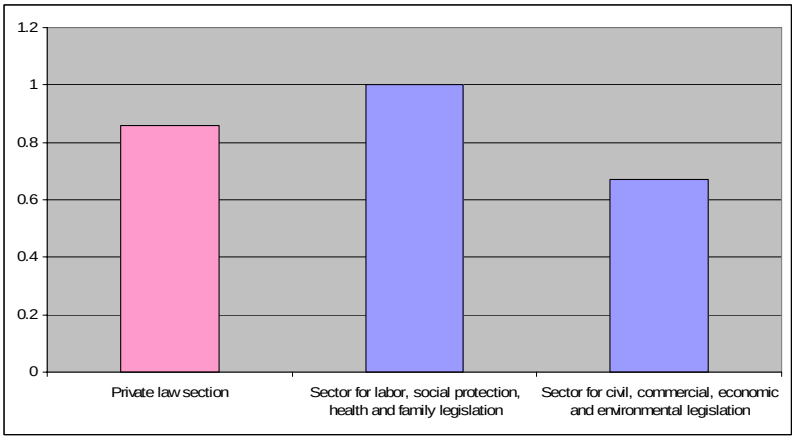
Quantitative assessment

The value of indicator for Private law section – 0.86

Table 10-24 The value of quantitative indicator for sub-structures, Private law section

Structure	
Sector for legislation on labor, social protection, health and family	1.00
Sector for civil, commercial, economic and environmental legislation	0.67

Figure 10.5-26 The value of quantitative indicator for sub-structures, Private law section



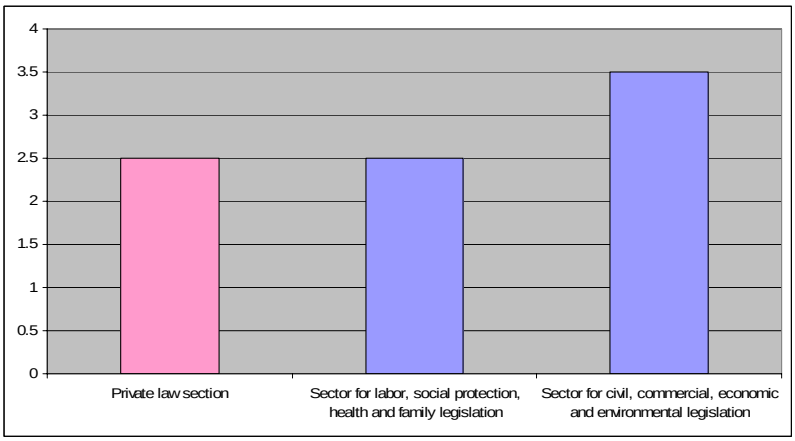
Qualitative assessment of PCs

The value of indicator for Private law section – 2.50

Table 10-25 The value of qualitative indicator for sub-structures, Private law section

Structure	
Sector for legislation on labor, social protection, health and family	2.50
Sector for civil, commercial, economic and environmental legislation	3.50

Figure 10.5-27 The value of qualitative indicator for sub-structures, Private law section



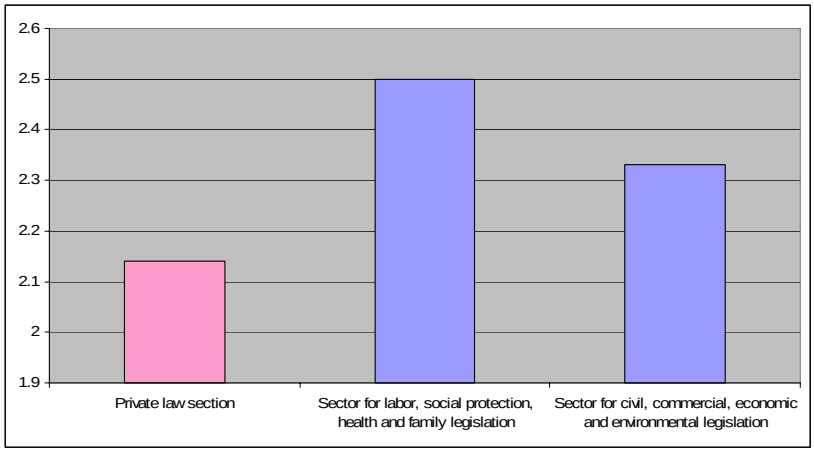
Qualitative-quantitative assessment of endowment of work places with PCs

The value of indicator for Private law section - 2.14

Table 10-26 The value of qualitative-quantitative indicator for sub-structures, Private law section

Structure	
Sector for legislation on labor, social protection, health and family	2.50
Sector for civil, commercial, economic and environmental legislation	2.33

Figure 10.5-28 The value of qualitative-quantitative indicator for sub-structures, Private law section



Structure: Legal division, Public law section

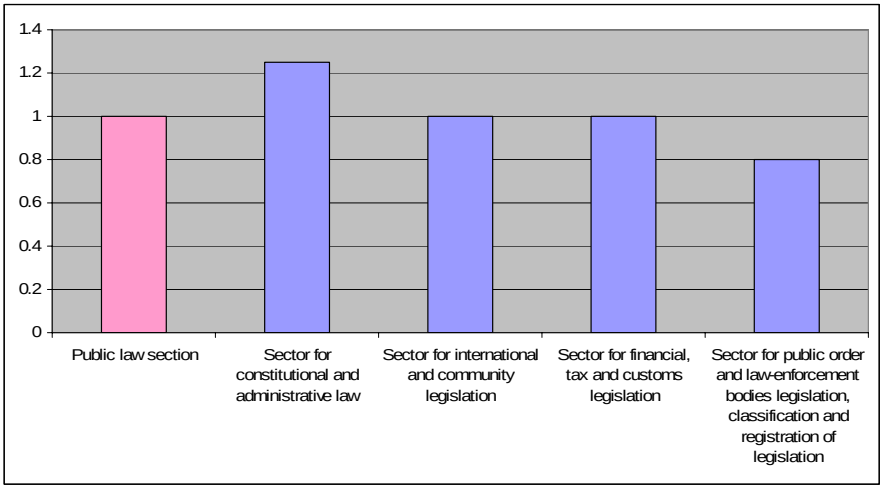
Quantitative assessment

The value of indicator for Public law section – 1.00

Table 10-27 The value of quantitative indicator for sub-structures, Public law section

Structure	
Sector for constitutional and administrative law	1.25
Sector for international and community legislation	1.00
Sector for financial, tax and customs legislation	1.00
Sector for legislation on public order and law-enforcement bodies, classification and registration of legislation	0.80

Figure 10.5-29 The value of quantitative indicator for sub-structures, Public law section



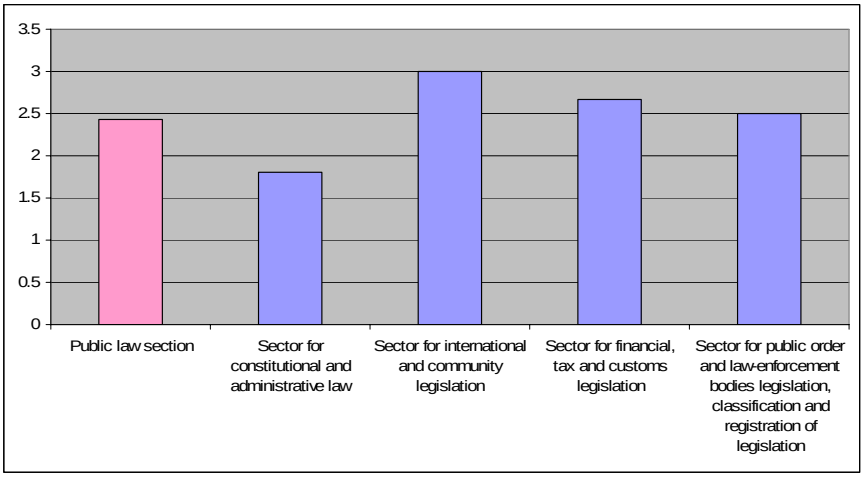
Qualitative assessment of PCs

The value of indicator for Private law section – 2.43

Table 10-28 The value of qualitative indicator for sub-structures, Public law section

Structure	
Sector for constitutional and administrative law	1.80
Sector for international and community legislation	3.00
Sector for financial, tax and customs legislation	2.67
Sector for legislation on public order and law-enforcement bodies, classification and registration of legislation	2.50

Figure 10.5-30 The value of qualitative indicator for sub-structures, Public law section



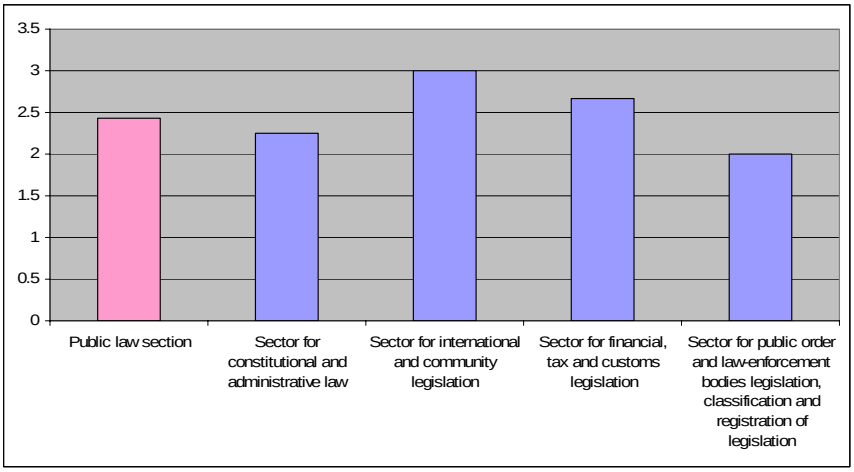
Qualitative-quantitative assessment of endowment of work places with PCs

The value of indicator for Public law section – 2.43

Table 10-29 The value of qualitative-quantitative indicator for sub-structures, Public law section

Structure	
Sector for constitutional and administrative law	2.25
Sector for international and community legislation	3.00
Sector for financial, tax and customs legislation	2.67
Sector for legislation on public order and law-enforcement bodies, classification and registration of legislation	2.00

Figure 10.5-31 The value of qualitative-quantitative indicator for sub-structures, Private law section



Structure: Division for foreign parliamentary relations

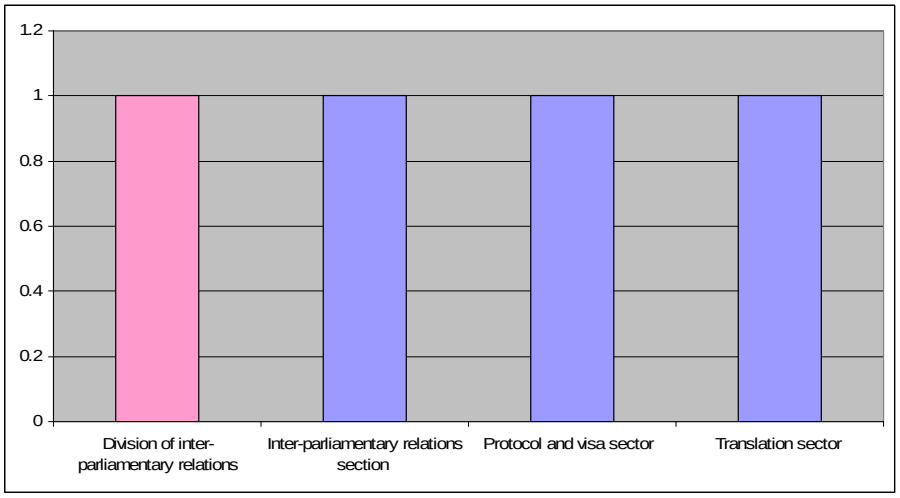
Quantitative assessment

The value of indicator for Division of foreign parliamentary relations – 1.00

Table 10-30 The value of quantitative indicator for sub-structures, Division for foreign parliamentary relations

Structure	
Inter-parliamentary relations section	1.00
Protocol and visa sector	1.00
Translations sector	1.00

Figure 10.5-32 The value of quantitative indicator for sub-structures, Division for foreign parliamentary relations



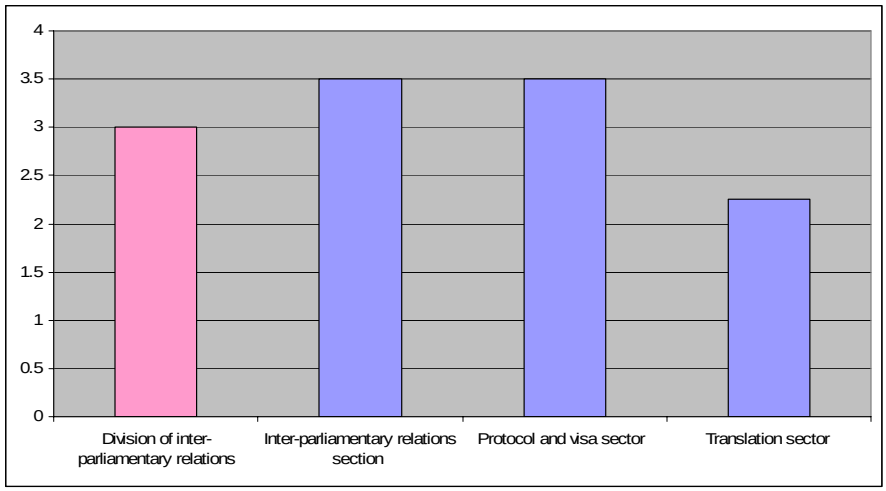
Qualitative assessment of PCs

The value of indicator for Division for foreign parliamentary relations – 3.00

Table 10-31 The value of qualitative indicator for sub-structures, Division for foreign parliamentary relations

Structure	
Inter-parliamentary relations section	3.50
Protocol and visa sector	3.50
Translations sector	2.25

Figure 10.5-33 The value of qualitative indicator for sub-structures, Division for foreign parliamentary relations



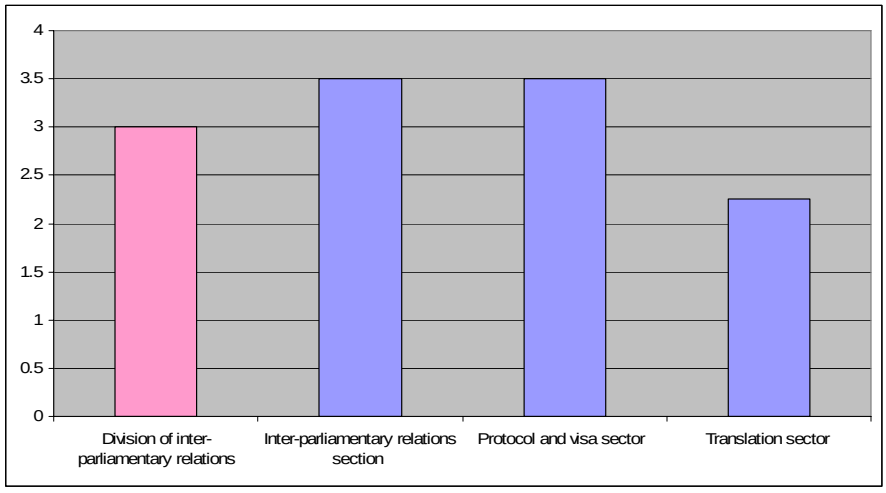
Qualitative-quantitative assessment of endowment of work places with PCs

The value of indicator for Division for foreign parliamentary relations – 3.00

Table 10-32 The value of qualitative-quantitative indicator for sub-structures, Division for foreign parliamentary relations

Structure	
Inter-parliamentary relations section	3.50
Protocol and visa sector	3.50
Translations sector	2.25

Figure 10.5-34 The value of qualitative-quantitative indicator for sub-structures, Division for foreign parliamentary relations



Tabular data

Table 4.1 Indicators of endowment of the work places in the Parliament with PCs

	No. of employees	No. of PCs					Quantitative-qualitative indicator of endowment with PCs	Qualitative indicator of endowment with PCs	Quantitative indicator of endowment with PCs
		Total	1st generation	2nd generation	3rd generation	4th generation			
Moldovan Parliament	**293**	**211**	**21**	**26**	**63**	**101**	**2.27**	**3.16**	**0.72**
1 Director General	2	0	0	0	0	0	0.00		0.00
2 Service for press and image	4	3	0	1	1	1	2.25	3.00	0.75
3 Service for information, analyses and forecasts	8	8	0	0	7	1	3.13	3.13	1.00

3.1 Library	2	2	0	0	2	0	3.00	3.00	1.00
4 Service for human resources	2	1	0	0	0	1	2.00	4.00	0.50
5 Service for petitions and audiences	6	6	0	1	1	4	3.50	3.50	1.00
6 Parliamentary documentation division	42	30	7	3	11	9	1.95	2.73	0.71
6.1 Editing section	14	9	5	1	1	2	1.29	2.00	0.64
6.2 Parliamentary procedures section	26	19	2	2	10	5	2.15	2.95	0.73
6.2.1 Parliament's Archives	2	0	0	0	0	0	0.00		0.00
6.2.2 Typing Office	5	5	1	0	4	0	2.60	2.60	1.00
6.2.3 Photocopying Office	2	0	0	0	0	0	0.00		0.00
6.2.4 Chancellery	3	3	0	1	0	2	3.33	3.33	1.00
6.2.5 Sector for inquiries and stenography	7	7	1	0	5	1	2.86	2.86	1.00
6.2.6 Sector for meeting arrangements	6	4	0	1	1	2	2.17	3.25	0.67
7 Administrative division	23	17	1	1	5	10	2.52	3.41	0.74

7.1 Logistical support section	16	9	1	0	4	4	1.81	3.22	0.56
7.1.1 Sector for logistical support and general services	4	0	0	0	0	0	0.00	#DIV/0!	0.00
7.1.2 Section for IT and network administration	7	7	0	0	3	4	3.57	3.57	1.00
7.1.3 Sector for supplies and constructions	4	2	1	0	1	0	1.00	2.00	0.50
7.2 Finance, budget and accounting section	7	7	0	0	1	6	3.86	3.86	1.00
8 Legal division	23	22	7	4	4	7	2.39	2.50	0.96
8.1 Private law section	7	6	2	1	1	2	2.14	2.50	0.86
8.1.1 Sector for legislation on labor, social protection, health and family	2	2	1	0	0	1	2.50	2.50	1.00
8.1.2 Sector for civil, commercial, economic and environmental legislation	3	2	0	0	1	1	2.33	3.50	0.67
8.2 Public law section	14	14	5	2	3	4	2.43	2.43	1.00
8.2.1 Sector for constitutional and administrative law	4	5	3	1	0	1	2.25	1.80	1.25
8.2.2 Sector for international and community legislation	1	1	0	0	1	0	3.00	3.00	1.00
8.2.3 Sector for financial, tax and customs legislation	3	3	1	0	1	1	2.67	2.67	1.00
8.2.4 Sector for legislation on public order and law-enforcement bodies, classification and registration of legislation	5	4	1	1	1	1	2.00	2.50	0.80
9 Division for foreign parliamentary relations	14	14	0	4	6	4	3.00	3.00	1.00

9.1 Inter-parliamentary relations section	6	6	0	0	3	3	3.50	3.50	1.00
9.2 Protocol and visa sector	2	2	0	0	1	1	3.50	3.50	1.00
9.3 Translations sector	4	4	0	3	1	0	2.25	2.25	1.00
10 Committee for legal issues, appointments and immunities	19	12	1	1	4	6	2.05	3.25	0.63
11 Committee for economic policy, budget and finance	21	15	2	0	5	8	2.33	3.27	0.71
12 Committee for national security, defense and public order	14	9	2	1	2	4	1.86	2.89	0.64
13 Committee foreign policy and European integration	12	8	1	1	1	5	2.17	3.25	0.67
14 Committee for human rights	13	9	0	1	3	5	2.38	3.44	0.69
15 Committee for public administration, environmental protection and territory development	15	5	0	0	1	4	1.27	3.80	0.33

16	Committee for culture, science, education, youth, sports and mass media	16	9	0	4	1	4	1.69	3.00	0.56
17	Committee for agriculture and food industry	15	6	0	2	2	2	1.20	3.00	0.40
18	Committee for social protection, health and family	15	5	0	0	2	3	1.20	3.60	0.33
19	Faction of the Communist Party of the Republic of Moldova	6	4	0	1	0	3	2.33	3.50	0.67
20	Faction of the Alliance «Moldova Noastră»	4	4	0	0	0	4	4.00	4.00	1.00
21	Faction of the Popular Christian Democratic Party	3	3	0	0	1	2	3.67	3.67	1.00
22	Faction of the Democratic Party of Moldova	3	3	0	1	0	2	3.33	3.33	1.00
23	Speaker of the Parliament	5	4	0	0	0	4	3.20	4.00	0.80
24	Deputy Speakers of the Parliament	8	8	0	0	1	7	3.88	3.88	1.00

10.6 Annex 6. Printers. Accessibility.

Apart from assessing printers' capacity to execute users' commands in terms of technical characteristics, it also important to assess users' access to printers.

Users without printers in their offices and without permanent access to offices with printers will not be able to send printing commands in a proper way, irrespective of technical capacity of printers located in the Parliament.

The following table shows a list of offices endowed with PCs, without printers. Offices were not divided by sections (e.g., offices №№ 400a, 400b, 400c were regarded as a single office, №400).

Table 10-1 Offices without printers

	Office No.	No. of PCs		Office No.	No. of PCs
1.	203	1	2.	704	2
3.	220	1	4.	705	1
5.	405	3	6.	712	2
7.	410	3	8.	713	1
9.	416	1	10.	717	1
11.	504	1	12.	802	1
13.	510	1	14.	805	1
15.	511	1	16.	811	1
17.	516	2	18.	815	2
19.	520	1	20.	820	1
21.	523	1	22.	821	1
23.	601	2	24.	823	1
25.	603	1	26.	827	1
27.	604	1	28.	901	1
29.	607	1	30.	903	1
31.	608	1	32.	907	2
33.	610	1	34.	909	1
35.	615	1	36.	910	1

37.	616	1	38.	918	1
39.	617	1	40.	919	1
41.	622	1	42.	922	1
43.	625	1	44.	924	1
45.	702	1	46.	Dep.	1

Table 1-2 Printers by offices

Office No.	Relative assessment		Office No.	Relative assessment		Office No.	Relative assessment		Office No.	Relative assessment
103	without PCs		415	1.00		414	0.67		815	0.00
104	0.50		416	0.00		619	without PCs		816	without PCs
105	without PCs		502	without PCs		620	without PCs		817	without PCs
115	without PCs		504	0.00		621	without PCs		818	without PCs
116	without PCs		505	without PCs		622	0.00		819	without PCs
201	without PCs		506	without PCs		623	without PCs		820	0.00
202	3.00		507	without PCs		624	without PCs		821	0.00
203	0.00		508	without PCs		625	0.00		822	without PCs
204	2.00		509	without PCs		701	2.00		823	0.00
205	2.00		510	0.00		702	0.00		824	without PCs
206	2.00		511	0.00		703	without PCs		825	without PCs

207	1.00		512	without PCs		704	0.00		826	without PCs
208	1.25		513	without PCs		705	0.00		827	0.00
209	3.00		514	without PCs		706	without PCs		901	0.00
210	1.00		515	without PCs		707	without PCs		902	0.50
212	2.00		516	0.00		708	1.00		903	0.00
213	1.00		517	1.29		709	without PCs		904	1.00
214	1.00		518	2.00		710	0.67		905	1.00
215	1.00		519	without PCs		711	without PCs		906	1.00
216	1.67		520	0.00		712	0.00		907	0.00
217	2.00		521	without PCs		713	0.00		908	without PCs
218	2.00		522	1.00		714	without PCs		909	0.00
219	2.00		523	0.00		715	1.00		910	0.00
220	0.00		524	1.00		716	2.00		911	0.50
221	2.00		525	0.67		717	0.00		912	2.00
301	without PCs		525b	2.00		718	without PCs		913	2.00
302	1.00		601	0.00		719	without PCs		914	7.00
303	2.00		602	1.00		720	without PCs		915	1.00
304	1.00		603	0.00		721	1.00		916	without PCs
305	2.00		604	0.00		801	1.50		917	1.00
401	without PCs		605	1.00		802	0.00		918	0.00
402	2.00		606	without PCs		803	without PCs		919	0.00

403	without PCs		607	0.00		804	without PCs		920	0.50
404	0.44		608	0.00		805	0.00		921	without PCs
405	0.00		609	1.50		806	without PCs		922	0.00
406	1.00		610	0.00		807	without PCs		923	1.00
407	3.17		611	without PCs		808	1.00		924	0.00
408	7.00		612	0.33		809	without PCs		925	0.50
409	1.00		613	0.67		810	0.33		Dep.	0.00
410	0.00		614	without PCs		811	0.00		st	0.83
411	1.00		615	0.00		812	without PCs		subs.	without PCs
412	2.00		616	0.00		813	without PCs			
413	1.00		617	0.00		814	without PCs			

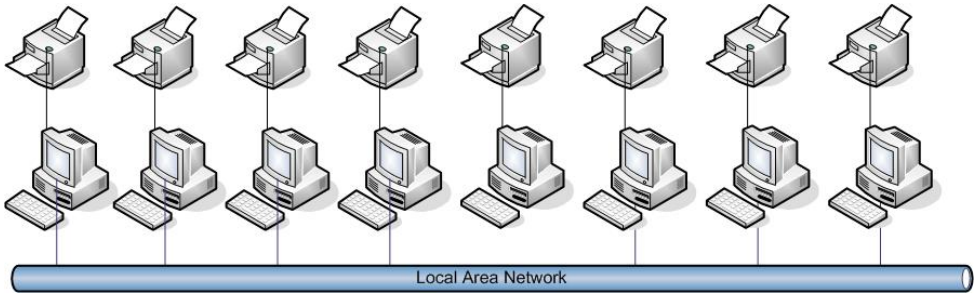
Table 10-3 Number of users of PCs and printers in offices

Number of users of PCs in offices	No. of offices	No. of printers	Shortage/Excess	Offices No.
0	65	0	0	
1	101	46	-55	202, 203, 204, 205, 206, 209, 210a, 210b, 212a, 212b, 214, 217, 218, 219, 220, 221, 303, 402, 407, 407b, 408a, 408b, 409b, 410a, 412, 414b, 415, 416, 504, 510, 511, 518a, 518c, 520, 522b, 522c 523, 525, 525b, 602, 603, 604, 605a, 605b, 607, 608, 609b, 609c 610, 613a, 613b, 613c, 615, 616, 617, 622, 625, 701, 702, 705, 708, 710a, 710b, 710c, 712, 712b, 713, 715b, 715c, 716a, 716c, 717, 721, 802, 805, 808, 810a, 810b, 810c, 811, 815b, 815c, 820 821, 823, 827, 901, 903, 904, 905, 906b, 906c, 909, 910, 913 918, 919, 922, 924, Dep., Sfatul Tarii
2	32	38	6	104, 207, 213, 215, 302, 304, 305, 406, 407a, 407c, 410, 413, 414a, 516, 517b, 517c, 518b, 518b, 524, 525a, 601, 704, 716b, 801, 902, 907, 911, 914, 915, 917, 920, 923, 925
3	5	7	2	216, 405, 411, 517a, 612c
4	1	3	2	208
5	1	4	3	Sfatul Tarii
6	1	1	0	912
9	1	2	1	404
	207	**102**	**-40**	

10.7 Annex 7. Printers. Rationality of using shared printers.

There are two basic approaches to the endowment of IT users with printers.

1) **Local printers**. The PC of each user is connected to a printer. Usually, this is an inexpensive device, with low productivity; depending on the specific activity of each separate user. It can be a black-and-white or color printer; laser, matrix or inkjet; supporting various paper formats. However, the number of printers may vary from tens to hundreds, depending on the size of an institution. The main advantage of this approach is user-friendliness: the printer is located next to the user and performs the tasks sent by one user only. Yet, there are many more disadvantages than advantages:
    a. Because of the great number of printers, their maintenance is difficult; the support staff has to monitor the status of all printers, to perform their preventive maintenance, to replace consumables on time. Given that printers are located in separate, isolated, and usually hardly-accessible rooms, it is next to impossible to maintain the printers in an efficient way.
    b. The tantamount of models (usually, local printers have various models and are produced by various manufacturers) involves the storage of various consumables and spare parts.
    c. It is impossible or difficult to ensure the rational use of printers by the employees.

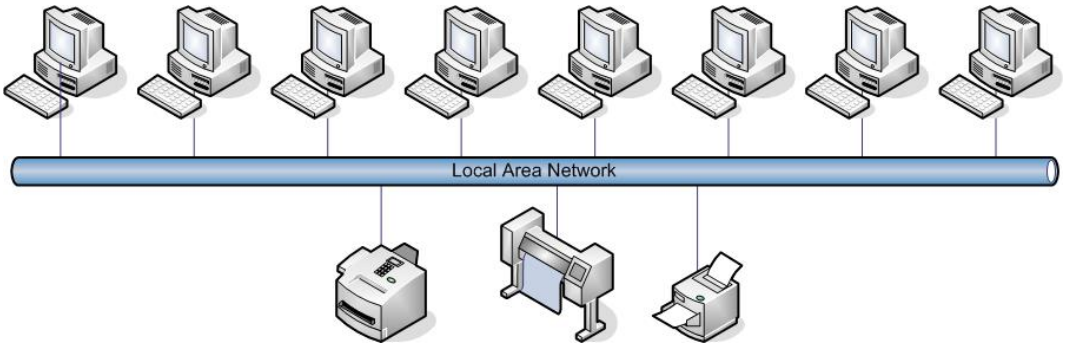


2) **Shared printers**. This approach involves the use of high-speed and high-capacity printers (printer manufacturers usually measure them by the number of printed pages per month). However, the number of such printers may be relatively small. Printers are installed in shared places: corridor or separate room with unlimited access. A group of users have the option of sending jobs to the printer. Disadvantages of such a system are as follows:
    a. This approach is less user-friendly, due to the fact that in order to receive the printout, the user has to move from his workplace to the printer.
    b. Such printers may be more expensive than a considerable part of personal printers.
    c. The failure of one printer will affect the work of a group of users.

    However, this approach has a lot of advantages:

    a. A large printer may replace a number of personal printers. Consequently, the support staff should monitor and support the working capacity of one device instead of a group of devices. The fact that printers are installed in shared locations also contributes to improving the performance of the technical staff.

b. A number of printers with various functional features (color or black-and-white, those printing for various paper formats, etc.) can be made available to the staff in order to be shared. The staff can use different types of printers for each separate task, depending on its peculiarities.
c. There is no need to store and buy various consumables.
d. The cost of one page processed by a large printer is much cheaper than that of pages processed by a personal printer.
e. There are administration tools for such printers. One can always find out the number of pages printed by various users.



Since each approach to the provision of users with printers has both advantages and disadvantages, it is impossible to identify in advance the optimal solution. A number of factors should be considered: users' location, availability of a shared location for the printer, peculiarities of activities of various users. The most representative, in our opinion, is to identify the cost-effectiveness of using shared printers. In other words, it is the option for which the company will spend less money to print documents.

Let us try to make some estimates to identify the way for a full endowment of the IT infrastructure of the Parliament with printers. Estimates will be made for HP printer models. Prices for printers and consumables were taken from the HP web-site and may differ from prices valid for the Republic of Moldova.

An estimation sample.

At this stage 40 PC users have no access to printers. A possible solution to this problem would be to purchase 40 HP LaserJet 1020 personal printers.

HP LaserJet 1020 Specifications

Print speed, ppm	15
Recommended monthly volume, pages	5000
Input capacity, sheets	150
Output capacity, sheets	100
Two-sided printing	n/a
Interface	USB
Cartridge life expectancy, pages	2000

Printer price: 179.00$

Cartridge price: 69.99$

Information about product specifications and prices was taken from the Hewlett-Packard web site, http://h10010.www1.hp.com/wwpc/us/en/sm/WF05a/18972-236251-236263-14638-f51-439423.html; date: 15 March 2006.

On average, there are 20 offices on each floor of the Moldovan Parliament's building. Thus, 40 printers will be sufficient to endow 2 floors with printers.

Currently, HP offers the following «high-volume printing» models:

HP LaserJet 9040, HP LaserJet 8150, HP LaserJet 4250, HP LaserJet 4350. The multifunctional device HP LaserJet 4345mfp was also considered.

HP LaserJet 4250n Specifications

Print speed, ppm	45
Recommended monthly volume, pages	200000
Input capacity, sheets	1100-3100

Output capacity, sheets	Up to 800
Two-sided printing	Optional
Interface	USB, LPT, LAN
Cartridge life expectancy, pages	10000

Printer price: 1249.00$

Cartridge price: 239.99$

HP LaserJet 4350n Specifications

Print speed, ppm	55
Recommended monthly volume, pages	250000
Input capacity, sheets	1100-3100
Output capacity, sheets	Up to 800
Two-sided printing	Optional
Interface	USB, LPT, LAN
Cartridge life expectancy, pages	10000

Printer price: 1649.00$

Cartridge price: 239.99$

HP LaserJet 8150n Specifications

Print speed, ppm	32
Recommended monthly volume, pages	150000
Input capacity, sheets	1100-3100
Output capacity, sheets	Up to 600
Two-sided printing	Optional
Interface	USB, LPT, LAN

Cartridge life expectancy, pages	20000

Printer price: 2449.00$

Cartridge price: 199.99$

HP LaserJet 9040n Specifications

Print speed, ppm	40
Recommended monthly volume, pages	300000
Input capacity, sheets	1100-3100
Output capacity, sheets	Up to 600
Two-sided printing	Optional
Interface	USB, LPT, LAN
Cartridge life expectancy, pages	10000

Printer price: 2849.00$

Cartridge price: 269.99$

Let us suppose that 2 printers will be located on each floor. Thus, we will need 4 printers for 2 floors.

Printer Model	Printer Price, $	Q-ty	Total price for printers, $	Cartridge price, $	Cartridge life expectancy, pages	Price per printed page, $
HP LaserJet 1020	179	40	7160	69.99	2000	0.035
HP LaserJet 4250n	1249	4	4996	239.99	20000	0.012
HP LaserJet 4350n	1649	4	6596	239.99	20000	0.012
HP LaserJet 8150n	2449	4	9796	199.99	20000	0.01
HP LaserJet 9040n	2899	4	11596	269.99	30000	0.009
HP LaserJet 4345mfp	2599	4	10396	239.99	20000	0.012

Model	Price for 4 printers	Difference in purchase price from 40 HP LaserJet 1020	Difference in price per printed page from HP LaserJet 1020	No. of printed pages, for which the higher cost is compensated
HP LaserJet 4250n	4996	-2164	0.023	
HP LaserJet 4350n	6596	-564	0.023	
HP LaserJet 8150n	9796	2636	0.025	105440
HP LaserJet 9040n	11596	4436	0.026	170615
HP LaserJet 4345mfp	10396	3236	0.023	140700

Therefore, it is obvious that personal printers are considerably cheaper upon purchase, while large printers are considerably cheaper during maintenance.

To assess the rationality of choosing a printer, one should estimate the volume of documents printed in a certain period of time (e.g., one month). After that, it will be possible to calculate the period of time during which the difference between purchase prices will be compensated due to lower maintenance costs. For instance, if 40 persons print 5000 pages per month, then additional costs will be compensated during 28 months of maintenance of printers (140700/5000).

The multifunctional printer HP LaserJet 4345mfp was designed on the basis of HP LaserJet 4350, and provides users with additional features:

- Copying
- Scanning and sending documents by e-mail, fax
- Distribution of print jobs in a number of output trays
- Stapling documents with up to 30 sheets
- Two-sided printing

10.8 Annex 8. Outline of the questionnaire for web-site assessment

1. Contents
A. Coverage
Are all legal documents produced by the entity published?
For each type of documents, are all the documents published or just a part of them?
Are only current materials presented, or also those for previous years?
Are the Rules and Procedures of the organization presented?
Is the current information about the organization's activity published?
Are the records of the legislative body published?
Is there multimedia (audio, video) information available?
Are all the documents published in spoken languages?
Are all the documents published in a foreign language?
B. Text
Are the documents published on the web site complete or only quotations, extracts or summaries?
Is the document size shown?
Is it mentioned that the document has a large size and the download time will be long?
Are there spelling or grammar errors?
C. Format
Which format is used for presenting legal documents? (ASCII, HTML, PDF, DOC)
Does the web-site have links to other web sites where document reading/viewing software may be downloaded?
Is the document format shown on the web site?
D. Context
Are there explanatory notes published for each document?

E. Status
Is the date of adoption, publication, entry into force shown for each document?
F. References
Can each document be distinguished by a quotation or location?
Does each document have an identifier so that it may be found again later?
Are these indicators easily-determined in the document?
G. Stability
Does the web site contain old, archived or historical documents?
Are the documents presented through persistent or standing links (URL)?
H. Disclaimers
Does the web site contain disclaimers?
Is the web site deemed to be authoritative (disclaimers not needed)?
Are only official versions of documents presented?
I. Sources
Are authors or sources of materials easily identifiable?
Is the information about author presented or are there hyperlinks?
Is it easy to contact the web-site author of the focal point for questions or comments?
J. Scope
Is the scope of the web-site easily identifiable?
Is the audience easily identifiable?
K. Copyright and user right
Is the web-site content protected by copyright?
Are the rights to use the published information mentioned?
Are contact persons for the use of web content indicated?
L. Services

Which services are available?
Is there a tool for subscription to news by e-mail?
2. Organization
A. Identification
Can documents be easily identified by type of page?
Are legal documents organized or grouped by types?
Is there only one access point to the legal information?
B. Layout
Are documents organized in chronological order?
Are documents organized by a number of criteria (chronological, by chapters, other)?
For modified documents, is the last modification date shown on the same page?
C. Search
Are there information search tools on the web site?
Is there a description of how to use search tools?
Are there examples of using search tools?
Is there a site map available?
Is there a table index or a subject list?
3. Browsing and Use
A. Hyperlinks
If documents contain references to other documents on the same page, are these documents connected by hyperlinks?
B. Use

Are tables of contents used in large documents?
Can users browse easily through various parts of documents?
If the document format allows the use of a table of contents, can users browse through the document using the table of contents?
Is the table of contents organized as a tree?
Are there references to help pages or pages with frequently asked questions?
Is browsing easy and intuitive?
4. Accessibility
A. Compliance (accessibility standards)
Is the web site compliant with the W3C recommendations?
(World Wide Web Consortium's Web Content Accessibility Guidelines, www.w3.org/TR/WAI-WEBCONTENT/)?
Is there an only-text version for persons with impaired vision or other impairment or an option to see or browse only textual information?
B. Compatibility
Can the web site be navigated using a number of web-browsers?
Can the web site be navigated using a modern web browser or also using older versions?
C. Contact details
Is there a reference to an e-mail in order to report any problems?
Are the contact details of a person or department responsible for the web site available?