Political Intelligence

INTERNEWS

Moldova

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1 OVERVIEW

The current independent state of Moldova was established in 1991. It has a population of 4.3 million people with a land mass of 33,800 square kilometres. The GNI per capita was 587 Euro in 2005, based on World Bank figures. Moldova is a parliamentary republic. The country consists of 32 districts, 3 municipalities and 2 semi-autonomous regions, one of which is the breakaway region of Transdniestria.

Efforts to build an effective information society in Moldova are built on numerous documents prepared in the last few years. These include the Declaration of Intent among the member states of Stability Pact for South- Eastern Europe of 2002 (which had a significant information society aspect) and the March 19, 2004, Presidential Decree no. 1743-III directing the Government to begin the process of preparing a National Strategy on Information Society Technologies for Development (ISTD). On June 8, 2004, the Government established the guiding principles for its National Strategy issuing Official Decision no. 632 on "Policies for building an information society in the Republic of Moldova." A National Committee on Building an Information Society has been created as a multi/stakeholder mechanism to monitor the implementation of related policies. Later in the same year a package of fiscal and other reforms aimed at ICT companies was approved by Parliament.

Further e-development measures are included in the EGPRSP,[1] the National e-Strategy, the EU-Moldova Action Plan and the e-Governance Concept. The National Strategy for Building of Information Society (2005-2010) was approved by the Government in March 2005.[2] More recently, measures to improve egovernance (in particular the "Building eGovernance in Moldova" project), bolstered by improvements in e-signature legislation, have been adopted. In addition, the Regulation on the Realisation Mechanism for the "Electronic Moldova" Action Plan was adopted in January 2006, as a framework for future development of the information society in Moldova.

1.1 Regulation of Electronic Communications

Moldova has comprehensive legislation in the electronic communications sector, overseen by the National Regulatory Authority (ANRTI).

Interconnection regulation is considered complete and in line with European legislation. The Interconnection Regulation also forms a basis for requiring LLU, although implementation has proven problematic.

Numbering is also governed by the NRA, with freephone, VoIP and SMS short codes all available.

[1] Economic Growth and Poverty Reduction Strategy Paper

[2] Government Decision nr.255 of March 9 2005, Monitorul Oficial nr. 46-50/336 of March 25 2005.

Legal requirements for non-discrimination are in place, although reports have been made about difficulties regarding the building of infrastructure and facilities sharing. ANRTI is currently addressing these concerns.

Tariff rebalancing has been completed for almost all sections of the market. Universal service needs are being addressed through legislation and pilot projects for public access in rural areas.

Leased lines are generally available nationwide, although there are problems with cost accounting. These problems should be addressed once more comprehensive rules on cost accounting are introduced. It is planned that cost accounting, based on long-run average incremental costs (LRAIC), is to be implemented in the course of 2007 after the adoption of the new Electronic Communications Law.

Legislation is in place on data protection, although there is no oversight body (although a body with some data protection powers is planned) and limited rules on the international transfer of personal data.

1.2 Regulation of Electronic Services

Moldova has a very comprehensive set of legislation on electronic services, which is generally in line with that of the European Union. The 2004 Law on E-Commerce and the 2004 Law on Electronic Documents and Electronic Signatures provide a firm basis for e-signatures.

ISPs are not obliged to actively monitor networks for potentially illegal activity. No major concerns have been cited by international organisations with regards to gaps in Moldovan legislation relating to online child abuse images or IPR legislation.

The general framework for online payments appears to be in place in Moldova, although low Internet penetration and purchasing power mean that online service provision has not yet reached its full potential.

E-government services are at an early stage of development. Government websites have a low level of interactivity. For example, tax forms may be downloaded from the Internet but cannot be submitted electronically for official purposes.

In October 2006, the Ministry of Economy and Trade initiated the development of a new normative act on electronic commerce to improve the legislative framework in the sector.

In order to help support the sector, software producers will be exempted from the payment of VAT for a period of five years through a simplified exemption procedure. The new measures will also reduce the bureaucracy surrounding the procedure for allocation of work permits for invited foreign software specialists as well as the procedure of recognition of foreign diplomas in Moldova.[3]

[3] 06.10.2006 - [DECA-press]

1.3 Use of Information and Communication Technologies

Competition has only recently been introduced to the fixed line market (where the penetration rate is at 28 percent[4]); whilst a high degree of competition has been a fixture of the mobile market for a number of years (the mobile penetration rate is 35.2 percent[5]). Figures collated in 2005 indicated that there were 10.27[6] computers per one hundred Moldovan inhabitants. This comparatively low level is unsurprising when one considers that a 420 Euro computer would cost 42 percent of the average annual wage.[7] However, 28.9 percent of the population have access to computers either at home, in their place of study, or at work, with 16 percent of the population regularly using the Internet.[8] Development of the use of ICT is broadly in line with the targets set by the government in the e-Moldova action plan.[9]

The provision of electronic services is developing slowly. Utilities companies have introduced remote payment via bank ATM machines, which should help consumers become more familiar with the concept of electronic payments.

An e-money system has recently been launched in Moldova, permitting low-cost online payments for goods and services (1-6 MDL (6 eurocents to 39 eurocents) for transactions up to 10,000 MDL (644 Euro). To avail of this service, individuals register at the site www.emoney.md, open an electronic account and make a bank transfer to the e-money service provider (Emoney-Prim Company) or add money to their account at a branch of Moliasbank, which is participating as a partner in the scheme. The organisers of the project expect to have 40,000 users by the end of the first year of operation.

[4] Data from ANRTI

[5] Data from ANRTI

[6] http://www.mdi.gov.md/stat10_md/stat10_3_md/

[7] Based on average wages in the period January-October 2005. Data from the National Bureau of Statistics of the Republic of Moldova

[8] Data from the Moldova e-Readiness Report 2004

[9] See http://www.mdi.gov.md/img/mejsotr/ActionPlanEUMeng.pdf , P 26 (last visited 15 March 2005)

2 GENERAL ENVIRONMENT

2.1 Influence of stakeholders on regulation and policy

The Union of the Communications Sector of Moldova has existed for some time. This organisation is powerful and has Moldtelecom, Radiocomunicatii, the Moldovan Postal Service (Posta Moldovei), the Inspectorate for Communications and private companies as members. The association is mainly oriented towards solving social problems for its members and is less concerned with promoting the industry's wider common interests. Only once, when the privatisation of Moldtelecom started, were any concerns addressed to the Government in relation to regulation of the communications sector.

Internet café owners have also attempted to organise themselves in an Internet Club Association to promote their interests and to fight against what they perceive to be excessive state control.

The new entrants in the telecommunications market organised themselves into a formal trade association: the Association of Patronage of Telecommunications and Informatics, APOTIM.[10] APOTIM consisted (it has never officially been closed, but is de facto no longer in existence) mainly of Internet Service Providers and VoIP providers. In the early stages of their activity, they tried to achieve targets such as non-discrimination and antidumping legislation by exerting vigorous pressure on the Government and ANRTI staff. For example, VoIP service providers in APOTIM (Mega-Dat S.R.L.,[11] Gill International, Arax-Impex,[12] Relsoft Communications[13] and Meganet[14]) addressed a complaint in August 2001 to ANRTI regarding an alleged violation by Moldtelecom of the legislation in force.

In 2004, ANRTI revoked the licence of Mega-dat.com, then the largest ISP in Moldova and a key APOTIM member, for licence condition violation. APOTIM has not played an active role since then.

The former Ministry of Transport and Communications, as a counterbalance to APOTIM and other possible private operators' organisations, has obliged all state-owned operators to organise themselves into a formal trade organisation - the National Confederation of Employees of Moldova. However, this organisation has yet to play a role in campaigning on any specific issue.

The Confederation's managers are nominated by the Minister, by the Board chaired by the Minister and ministry staff members. Therefore, they cannot feasibly fight against or express opposition to Ministry policy.

[10] http://www.apotim.md/md/

[11] http://www.megadat.com/en/

[12] http://www.araxinfo.com/

[13] http://www.relsoft.md/

[14] http://www.meganet.md/

In conclusion, Moldovan trade associations have not played any significant role in the regulatory process in the last 2-3 years.

At the ITU Seminar "European Regional Seminar Telecommunication Liberalization – Challenges and Opportunities for the CEE, CIS and Baltic States", held in Chisinau (Moldova), 20-22 June 2006, the intention to create a new association was expressed by private sector representatives. The new "Association of Private Operators" has since been established and was registered by the Registration Chamber in July 2006 to promote private companies' interests in negotiations with policy making bodies and the NRA on economic, technical and legal issues, promoting development of fair competition, participation in development of the legal and regulatory framework for the electronic communications sector and attracting investment in the development of new services. Among founders of the Association are the main private companies from the sector such as Sun Communication, Telemedia Group, Arax-Impex, Isabel, Sicres, Riscom and Telcom Technologies.

The Association submitted a proposal to the appropriate Parliamentary Committee regarding the new draft of Electronic Communications Law recently approved by the Government.

The Association proposes abolishing licensing obligations for communications services which do not require use of limited resources. It also argues for reform of the procedures for appointing individuals to the most senior roles in ANRTI in order to maximise transparency and competition.

2.2 National Development Plan

The Moldovan government published a National Strategy on Information Society Development (E-Moldova) in March 2005.[15] The Strategy covers a wide range of issues, both with regard to infrastructure development and the provision of government services.

The Strategy is divided into two broad categories: the legislative and procedural framework and the institutional and regulatory framework. These categories are sub-divided into short, medium and long–term tasks. In the short-term the Moldovan authorities have set the following goals:

- Privatisation of major state communications enterprises;
- Improving the attractiveness of the market for investors;
- Development of the law on Electronic Communication to bring it increasingly into line with the EU regulatory framework;
- Improving the monitoring of quality of service, including the establishment of certification centres;
- Creation of a Universal Service fund and roll-out of services to at least 40 percent of localities;
- Creation of a national data transfer network capable of supporting key targets for communications (28 percent penetration for fixed telephony, 30 percent mobile telephony penetration, 10 percent of households with Internet access);
- Implementation of transitional mobile services en route to the rollout of 3G;

[15] Available from http://gov.md/content/en/0000051.pdf.

- Launching of a Moldovan digital satellite TV service.

In the medium term (up to 2008-2010), the aim is to:

- Move towards next generation ICT networks;
- Achieve EU average figures for fixed and mobile telephone use, household Internet use and universal service;
- To launch terrestrial digital TV.

In the long term (post-2010), the aim is to continue developments to match EU ICT levels.

The Moldovan authorities also intend to continue expanding their e-Government programme, enhancing the legislative and procedural framework, the technological framework and the institutional framework.

The National Strategy also supports e-business, e-education, e-science, e-culture, e-science and e-health.

Two observations can be made regarding the implementation of the National Strategy: it appears that some of the targets have either been met already or will probably be met (such as mobile penetration and rollout of new mobile services); on the other hand, it seems that the privatisation of state-owned communications companies is somewhat less of a priority now than it was when the National Strategy was first prepared.

In January 2006, the government adopted a Regulation on the implementation of the Electronic Moldova Action Plan covering mechanisms for the approval and financing of projects and the development of annual sectoral plans for local authorities.

The eGovernance Concept (developed with UNDP support) was approved by the Government in June 2006.[16] The Concept's main objective is to ensure access to official information, provision of services for citizens and business by electronic means, improving the quality of public services, raising the level of participation in the governance process, improving public administration and strengthening democracy and state institutions.

According to the Concept, the Centre for Electronic Governance was supposed to be established by the end of 2006. This will be responsible for coordination of all technical and technological implementation activities. Implementation will be performed based on annual plans developed by central and local public authorities coordinated by the Ministry of Information Development. Based on the central and local public authorities' proposals, the Ministry of Information Development will develop the annual financial plan for implementation of e-Governance.

2.3 Data Protection

Moldova is working towards ratification of the Council of Europe Convention on the Protection of Individuals with Regard to the Automated Processing of Personal Data. There

[16] Government Decision nr. 733 din 28.06.2006, Monitorul Oficial nr. 106-111/799 din 14.07.2006

is currently no special law in force on personal data protection or legislation broadly similar to the EU legal framework.

Data protection requirements are spread over a variety of Moldovan legislative instruments including the Constitution, the Law on Telecommunications (2001), the Law on Access to Information (2000) and the Law on Informatics (2000). The cross-border flow of data (data subject to automated processing, or those collected with the purpose of such processing) is allowed on condition that it does not infringe upon the private rights, freedoms and the duties of citizens, and does not affect the secrecy and confidentiality of the information.

The Law on Informatics requires that information products permit adequate consumer privacy. However, the study team has not been able to identify enforcement mechanisms to ensure that these rules are respected. According to the Law on Informatics, persons working with information systems and networks must ensure data security: no unauthorised access and connection to information systems and networks is allowed.

As in EU legislation, the Law on Informatics creates a category of sensitive data has also been created, where stricter rules apply.

In short, Moldovan legislation covers a great many of the provisions of EU data protection legislation, with the most notable absence being an independent national data protection authority and, therefore, enforcement of these provisions. The new draft Law on On Personal Data Processing was approved by the Government in 2005[17] is now being debated in Parliament, where it has passed its first reading. It is on schedule to be adopted in early January, at the latest.

According to the draft Law, a new body called the Centre for Human Rights Protection, will to be established with the basic functions of a supervisory authority. Parliament rejected the original proposal of having a body solely devoted to data protection.

The draft law was reviewed by the Council of Europe and received positive feedback, although with reservations concerning.the scope of the law and the independence of the (originally proposed) National Centre of Personal Data Protection. The Council of Europe also proposed amendments to a wide range of the provisions in the current draft.[18]

2.4 Cybercrime and Spam

Moldova has signed but not ratified the Council of Europe Cybercrime Convention and the Optional Protocol to the Convention on the Rights of the Child on the Sale of Children, Child Prostitution and Child Pornography.

The Administrative Violations Code (2001) contains provisions concerning the protection of "social morals." According to Article 171(4), the preparation, import, distribution or advertising of pornographic works, printing materials, pictures, or any other objects of

[17] http://www.parlament.md/lawprocess/drafts/2005/

[18] Council of Europe Document : PCRED/DGI/EXP(2006)38, Strasbourg, 17 August 2006 "Appraisal on the Draft Law on Personal Data Processing of the republic of Moldova"

pornographic nature, and the selling or storing with the purpose of selling is to be punished with various fines depending on whether the person is a private citizen or public official.

Government Decision 1400 of 17 December 2001 created the State Agency for the Protection of Morality to work together with the Ministry of Culture for the purpose of removing pornography, sadism and violence in works of literature and art, as well as in the media.

Possibly due to the comparatively low level of Internet penetration in Moldova, the focus of anti-piracy action in Moldova has been on physical media. IFPI claimed in 2004 that the level of music piracy in Moldova was at 69 percent.[19]

With regard to spam, Article 17 of the 2004 Law on Electronic Commerce prohibits the sending of commercial communications via electronic mail without prior consent.[20]

[19] International Intellectual Property Alliance, 2004 Special Report, Moldova.

[20] Law on electronic commerce nr.284-xv of 22.07.2004 monitorul oficial nr.138-146/741 of 13.08.2004

3 REGULATORY ENVIRONMENT FOR ELECTRONIC COMMUNICATIONS

A new draft Law on Electronic Communications to update the 1995 (amended in 2001) Telecommunications Law was discussed in the Government and submitted to the Parliament for approval.[21] The draft Law on Electronic Communications has attracting a wide range of criticism from operators. The Association of Private Operators recently addressed[22] its concerns to the Parliamentary Committee for Budget and Finance expressing the view that the draft would result in the competitive situation in the country deteriorating. One of the key concerns is the reduction in the powers of the NRA proposed by the current draft, in particular due to the continuation of dependence of ANRTI on the Government,

The following are thee main concerns expressed by the Association of Private Operators regarding new Law:

1. Licensing regime. The Law does not alter the current rules on licensing and does not expand the range of services requiring only authorisations.
2. ANRTI independence from the Government:

a) Nomination of ANRTI Board. The new draft stipulates nomination of the Board of directors by the Government, thereby making it heavily dependent on the Government
b) Annual budget approval by the Government
c) ANTRI must consult with SMP operators and government before tariffs are approved. The Association believes that this creates undue barriers to the development of a rebalanced, competitive market.

The Association and other new entrants in the market are also concerned with some definitions in the draft law and suggested reverting to those contained in the EU communications framework.

ANRTI has its own concerns about the new Law, in particular the proposal that the power for SMP designation would be given to the National Competition Authority. This, ANRTI believes, would make it practically impossible to insure fair competition. This has prompted ANRTI to prepare an alternative draft legislative package which was partially taken into consideration by the Government. In the revised Government proposal, SMP designation is to be within ANRTI's remit.

Meanwhile, competitive operators complain that ANRTI is not energetic enough in defending their interests under existing legislation.

3.1 Interconnection

Interconnection in Moldova is regulated by the Regulation on Interconnection (2002). The Regulation was developed in accordance with the Telecommunications Law and other applicable laws, taking into account the National Policy on Telecommunications (2001), the

[21] http://www.parlament.md/lawprocess/drafts/

[22] Source: Association of Private Operators

definitive list of basic telecommunications services, and the Reference Paper from the Republic of Moldova on the schedule of specific commitments (GATS/SC/134, 01-6451) within the Protocol of Accession of the Republic of Moldova to the World Trade Organisation.

The Regulation on Interconnection establishes:

- The rules and principles of network interconnection aimed at ensuring the interoperability of telecommunications and data networks and services offered through these networks, promoting competition between networks and services, and contributing to the development of new services in order to provide wide customer access to services;
- Rights and obligations of operators of public networks and services when establishing interconnection, and offering and obtaining access to the physical infrastructure; and
- Rights and obligations of the ANRTI (the NRA) in interconnection and access regulation.

The Regulation states that interconnection and access must be made available in an open, transparent and non-discriminatory manner, in order to:

- Implement the Telecommunications Law (last updated 2001);
- Encourage investment in telecommunications and data infrastructure to achieve the objectives of the National Policy on Telecommunications and the National Strategy on Information Society Development;
- Ensure the fulfilment of obligations by operators of public networks and services provided in the licence terms;
- Increase the efficiency of competition and the level of market development;
- Increase the efficiency of existing telecommunication facilities;
- Ensure access of subscribers of one network to the subscribers of another network at a reasonable cost and acceptable quality of service;
- Acknowledge that the business objectives of dominant operators are different from those of the new entrants; and
- Account for the convergence of service technologies that remove the traditional boundaries of market segments.

ANRTI's approach to interconnection is to permit free negotiation as much as possible and to intervene only in critical cases according to the available procedures.

The incumbent operator is required by the Interconnection Regulation to publish[23] a Reference Interconnection Offer (RIO) every year by December 31 (after acceptance by ANRTI). The first RIO was published in 2003. Up until 2006, the regulator always accepted the offer, after revision. However, the regulator has received significant complaints from other operators regarding the offer, especially relating to costs and the very long procedures for establishment of the interconnection. The most recent (2006) RIO has not been accepted by ANRTI, due to the lack of legal provisions governing SMP designation. Two alternative providers have told the study team that they have returned numbering resources to ANRTI as the competitive situation has been worsened by the new RIO to the extent that they no longer feel they will be able to use them. They feel that a perceived lack of political support

[23] http://www.anrti.md/en/Interconectare/ORI_2005.pdf

for ANRTI, together with the uncertain regulatory situation and the fact that the competition authority has not been established yet, together with the RIO problems make growth and investment difficult for them.

Call termination rates in Moldova

Type of call	Cost (US$)	Cost (Euro)
fixed to mobile	0.07	0.058
mobile to fixed	0.0319	0.0264 Euro
mobile to mobile:	0.07	0.058
international to Moldtelecom	0.09	0.073

Source: ANRTI

A wholesale price ceiling is fixed by ANRTI for settlements involving Moldtelecom and another fixed operator: rates charged by the incumbent are to be no more than 50 percent of their "Standard"[24] consumer pricing package.

Carrier pre-selection is not yet available and there are no clear plans or timescales for its implementation.

Moldtelecom still has a de facto monopoly on fixed services, although its legal monopoly has been ended and licences for fixed long distance/international services are available at a cost of one million US dollars (826,000 euro). There are 127 companies registered to provide international telephony services, although only 17 are currently active. IP telephony services only require an "informatics" licence, which costs 2500 MDL (161 Euro) for five years.[25]

Ninety-six interconnection agreements have been agreed between Moldtelecom and IP telephony and data transfer operators, the vast majority of which are still in operation. Moldtelecom has interconnection agreements with twelve fixed line operators and forty-nine international operators.

VoIP services have been legal since 1 January 2004. Due to the fact that the incumbent's tariffs are not yet fully rebalanced, the ANRTI imposed an Access Deficit Charge (ADC) on VoIP providers as compensation for the uncovered costs of the local network. The ADC is revised at each rebalancing step and was diminished from 2.48 MDL (0.15 Euro) per minute in 2001 to 0.39 MDL (0.025 Euro) per minute in 2005. As soon as tariffs are fully rebalanced the ADC will be withdrawn. Illegal termination of VoIP traffic on Moldtelecom's network has not been identified as a major problem.

Revenue sharing for per minute charges has been available for dial-up ISPs since 2002. The share of the per minute charge is Moldtelecom/ISP 0.032/0.016 MDL (0.002/0.001 Euro).[26]

There are four operators in the mobile market, Voxtel (GSM),[27] Moldcell (GSM),[28] Moldtelecom (CDMA) (recently licensed[29]) and Interdnestrcom.[30] The last company is a non-licensed CDMA operator in Transdniestria.

[24] See http://www.moldtelecom.md/services/telephony/

[25] Law on Licensing Articles.8,45 and 18, 1

[26] Data from ANRTI

[27] http://www.voxtel.md

[28] http://www.moldtel.md

[29] http://www.moldtelecom.md

3.2 Numbering

The National Numbering Plan (NNP) is developed by ANRTI and approved by the Ministry of Information Development (previously the Ministry of Transport and Communications). Based on the 2001 Telecommunications Law (Article 9g), ANRTI is responsible for developing and managing the National Numbering Plan as well as allocating and managing numbering resources. These tasks are to be carried out by ANRTI in a transparent manner, ensuring equal conditions and impartiality in number and code allocation. Freephone, premium rate and VoIP numbers as well as SMS short codes are all available and the fees paid by communications service providers for the allocation of numbering blocks are used to fund ANRTI.

The provisional procedure on number allocation was replaced in early 2006 by a Regulation on the Administration and Management of the National Numbering Plan. Management and allocation by ANRTI must be objective, proportionate and non-discriminatory.

About 90 applications in total were filed with ANRTI for numbering resources in 2005. 13 new fixed telephony companies were licensed in 2005, 8 of which were allocated numbering resources. Only 5 of 33 fixed operators licensed in 2006 were allocated numbering resources. Overall, fees for number allocation were reduced by between 20 percent and 40 percent in the course of 2005. Numbering fees vary according to the numbers being sought: for instance, short codes for transport services outside the capital cost 4,000 Lei (258 Euro); short codes for transport services within the capital cost 20,000 Lei (1,288 Euro); mobile and most fixed numbers cost 0.2 Lei (0.013 Euro); telephone network access codes 20,000 Lei (1,287 Euro); access codes for directory services 5,000 Lei (322 Euro); and access codes for IP telephony services 4,000 Lei (257 Euro). Number blocks normally consist of 1,000 numbers.

According to national rules, number blocks for telecommunications network operators are allocated to legal entities registered in Moldova that hold licences for offering telecommunication services. Recipients of short codes, identification codes and free phone service numbers are not permitted to re-allocate them to a third party.

The new NNP, approved by the Ministry of Transport and Communications on 8 April 2003,[31] was developed by ANRTI in conformity with ITU Recommendations and the CEPT Recommendation on Numbering.[32] The NNP and some amendments to the document were published in ITU Operational Bulletin number 785.[33]

In the latter half of 2005, Moldtelecom updated its systems to phase out the short codes 9, 9x and 9xxx, with a new system starting with the digit 1. The purpose of the update was to improve access to numbering resources for alternative operators and to offer additional number ranges for the provision of new services. The 112 emergency number is being

[30] http://www.idknet.com

[31] Published in the "Official Gazette of the Republic of Moldova" 76/104 of 22 April 2003.

[32] http://www.anrti.md/ro/acte/num.htm

[33] Number 785 of 15.09.2003, number 799 of 01.11.2003, and number 817 of 01.08.2004

phased in, gradually replacing the 901-fire, 902-police, 903-ambulance and 904-gas numbers.

Number portability is planned but is not currently available.

3.3 Rights of Way and Facilities Sharing/Collocation

The legal and regulatory framework in Moldova establishes a non-discrimination principle for granting rights of way and promotes facilities sharing where additional rights of way cannot be given because of applicable essential requirements, such as environmental protection and/or town and country planning objectives.

Difficulties and delays in obtaining rights of way and building permits for network infrastructure remain an important concern for operators in Moldova, particularly as regards the roll-out of fixed networks and obtaining interconnection. New entrants have identified a variety of problems with regard to rights of way, such as the granting of specific rights to the incumbent, lack of transparency in procedures and the unclear division of competences between the different levels of authority with responsibilities in this field. This has led to disadvantages for new entrants and significant delays in the deployment of new infrastructure. Mobile network operators, for instance, have reported persistent problems with regard to the granting of rights to install mobile masts and antennae, often due to health and environmental concerns.

National planning decisions are made by the Ministry of Information Development (formerly the Ministry of Transport and Communications) and by the head office of Moldtelecom.

The Government established a State Commission for the Regulation of Entrepreneurial Activities[34] in February 2005 to simplify official procedures, remove “red tape”, and to monitor the activity of Public Administration Authorities with regulatory responsibilities. The Commission’s recommendations for changes to the institutional framework or in response to perceived excessive regulation by public authorities have to be enforced by Government decisions.

Despite existing established procedures being in place for facilities sharing in the Interconnection Regulation, the incumbent reportedly draws out the process as long as possible. In addition, it is very difficult for new entrants to have access to the ducts of the incumbent to install fibre optic cables. Generally, new entrant company managers do not publicly criticise Moldtelecom for fear of possible negative consequences for their future relationship with the company. Therefore ANRTI is having individual discussions with every new entrant in order to understand the problems and to facilitate the establishment of interconnection.

The Interconnection Regulation also establishes non-discriminatory procedures for collocation. However, the incumbent operator argues that it is non-dominant in the market, that it has reasonable prices, and that it is a champion of state interests (underlining, for example, that Moldtelecom is a 100 percent state-owned Joint Stock Company). Before May

[34] Government Decision nr.132 of February 8, 2005, Monitorul Oficial nr. 24-25 of February 11, 2005

2005, collocation agreements had to be coordinated with the former Ministry of Transport and Communications and were not signed until the Minister accepted them.

Since May 2005 no such approval is necessary. Nevertheless, the Association of Private Operators representatives expressed the opinion that the situation with regard to collocation has deteriorated: the incumbent is not permitting collocation at all, basing its refusals on lack of free space for the additional equipment. ANRTI has extensive powers, under Article 9 of the Telecommunications Law, to check the veracity of any such claims. These powers include the right to have free access to premises and relevant documentation. The use of these powers is opposed by Moldtelecom.

The 2004 Regulations on the Delivery of Collocation Services by Moldtelecom S.A[35] provide an example of Moldtelecom's procedures for facility sharing. Enterprises that deliver telecommunications and data transport services and that construct networks can lease space within the telephone exchanges of Moldtelecom S.A. and place their own equipment there. The rental payment is set according to existing tariffs.

To lease the space it is necessary:

(1) To submit a written application to the General Director of Moldtelecom S.A. in order to receive the technical conditions for the placing of equipment in the leased area. The application should contain the following information:
- Type of equipment and placement conditions;
- Equipment size;
- Plan of communication layout; and
- Copies of activity licences and of licensing conditions.

(2) The appropriate branch of Moldtelecom S.A. will then provide the applicant, within 15 calendar days from the date the application is filed, with the plan of the room in order to develop the project.

(3) Moldtelecom S.A. will subsequently assess the equipment placement project within 15 calendar days from the submission date and, where the application is approved, will conclude the collocation contract.

ANRTI decisions and regulations which are deemed to contradict legislation can be appealed by an action filed in an administrative court.

3.4 Tariff Policy

In 2004, 75 million MDL (5 million Euro) from international call charges were used to subsidise local network costs, according to the national regulator.

The Moldova-European Union Action Plan (signed in 2005) foresees the implementation of effective liberalisation in the telecommunications market and tariff rebalancing is an important aspect of this. Since 2003, tariff rebalancing has been gradually implemented in Moldova in all relevant activities of Moldtelecom S.A. The rebalancing process has been completed for business and standard residential customers. However, there remain issues to

[35] Available from http://www.moldtelecom.md

be resolved with regard to the management of rebalancing for sections of the population considered by the government to be most vulnerable to the negative effects of rebalancing.

In March 2005, ANRTI prepared the next steps for rebalancing and submitted its proposal to the Government for consultation, as required by the relevant legislation. Because Telecommunication Law (Article 9.1.d) requires ANRTI to only approve tariffs for SMP operators "*after consulting with the Government,"* the rebalancing process is suspended until the Government agrees with the proposed tariffs.

3.5 Cost Accounting

In Moldova, interconnection regulation provides the following pricing principles for interconnection services and access:

- Prices for interconnection services and access must be cost-oriented, reasonable and provide adequate remuneration for operators.
- Prices shall be determined based on *the long run average incremental costs approach* (LRAIC), to be implemented in the future. On a provisional basis, until this approach is implemented and existing cost accounting capabilities are sufficiently developed, particularly with regard to fixed assets, interconnection prices shall be calculated based on current costs.
- Interconnection and related services and facilities shall be provided on a disaggregated basis.

Prices for interconnection or access to infrastructure and network facilities, including those for collocation, must reflect the cost of the network, infrastructure or service components used for these purposes. Prices must not include infrastructure or service components not used for interconnection or access.

Although the framework is in place, the level of implementation of cost accounting is low. However, ANRTI is working on improving the cost accounting models and cost orientation of charges and tariffs. Nevertheless, audits have revealed uncertainty regarding the cost figures used to determine prices as well as the transparency of the information used.

As regards accounting separation, i.e. the requirement to keep separate regulatory accounts for the purposes of cost transparency and to prevent possible anti-competitive practices, Moldtelecom is requested to have separate accounts for its different service offerings. Moreover, these separate accounts must be prepared in a comprehensive way, to include key elements such as transfers between business units.

ANRTI worked to improve its LRAIC methodology in 2005; with planned implementation in 2006. The National Program on the implementation of the European Union-Moldova Action Plan stipulates implementation of LRAIC in 2006. However, implementation did not take place in 2006 but this is expected to happen in 2007, after the adoption of the new Electronic Communications law. This indicates that Moldtelecom's accounting system is not yet sufficiently transparent and comprehensive. Moldtelecom does not agree with the need for the implementation of such cost accounting and consequently has not taken measures to ensure faster implementation.

3.6 Universal Service

Moldovan national legislative acts in force do not include any special provisions regarding universal service except the definition in the 2001 Law on Telecommunications. According to this Law, universal service is a minimum set of services of an established quality, available to all users, regardless of their geographical location, and according to specific national conditions.

The Development Strategy Paper on Telecommunications approved by Order 48 of the Ministry of Transport and Communications on 26 February 2003 provides the main guidelines for universal service. It states that universal service is designed to ensure access to voice telephony for all citizens at an accessible price, including economically unprofitable users. Examples of non-profitable users include those in rural or remote locations or subscribers with reduced income.

The regulator has received complaints from the incumbent and from new entrants regarding the method of procurement for universal service provision and the ownership of installed equipment for universal service obligations used within the 2005 pilot project on universal service.

The draft Electronic Communications Law contains a special chapter on "Universal Service", defining the term and establishing how it will be implemented. For example, art. 75(1), a) stipulates that the methodology for calculating the net costs of universal service obligations is to be developed by the Agency and approved by the Government. This involvement obviously further limits ANRTI's independence. Art. 76 (2) stipulates that a universal service fund shall be created by Government Decree and managed by the NRA. Art. 67 (2) art. 76 (4) and (5) assigns the Government the responsibility to designate the providers with universal service obligations, to approve and publish the amount of obligatory contributions to be paid into the fund for the following year, establish the procedures and terms for paying such contributions into the fund, as well as to publish the mechanisms of financing and/or compensate for the net costs.

EU universal service concepts such as calling line ID and competition in directory services are not currently managed under national law. Such provisions are included in the draft Electronic Communications Law, however. On the other hand, there are no measures to ensure services to disabled users, such as Braille bills for blind users.

In December 2005, new rules on access to number information were adopted by ANRTI under which telephony providers must provide directory enquiry services.

3.7 Local Loop Unbundling

In Moldova, the Telecommunications Law does not directly stipulate specific provisions for LLU. However, the Interconnection Regulation approved on 13 March 2002 provides a

regulatory basis for LLU. According to the Regulation, the dominant operator shall provide unbundled access to the local loop under non-discriminatory and transparent terms based on cost oriented prices. ANRTI reports that 5,701 lines have been unbundled – a rate of less than 0.6 percent.

Notified operators must publish a reference unbundling offer (RUO) suited to market needs; in other words, it must be sufficiently detailed to allow competitors to choose only the network elements and facilities they require. Notified operators must also meet reasonable requests for unbundling and apply transparent, fair and non-discriminatory conditions, meaning that they must provide other operators with facilities equivalent to those provided to themselves and their subsidiaries. The tariffs charged for unbundled access must be cost-oriented.

The issue of how to verify claims of lack of space in the exchanges has not yet been solved. Procedures for alternative, low-cost, adjacent or remote collocation services for new entrants are expected to be established when new Electronic Communications Law is adopted. Co-mingling is actively discouraged by the incumbent.

ANRTI has requested information from Moldtelecom regarding the use of its fibre-optic network to establish what possibilities exist for unbundling of network elements.

Moldtelecom collocation space prices

Locality	Unit	Amount, monthly
Chisinau	Lei/4m^2	1,000 / 64.38 Euro
Balti	Lei/4m^2	600 / 38.6 Euro
Other localities	Lei/4m^2	350 / 22.5 Euro

Alternative operators are complaining about new procedures on collocation which Moldtelecom claims are necessary to ensure the confidentiality of phone calls. There are also failures reported in the delivery of services for unbundled loops, which Moldtelecom blames on lack of technical capacity.

3.8 Leased Lines

The Telecommunications Law (2001) and Interconnection Regulation (2002) require transparency, non-discrimination and cost-orientation for the supply of all services, including leased lines and leased line part circuits. Moldtelecom is required to supply a minimum set of leased lines at every point in the national territory as per the special ANRTI Decision 28 of 6 October 2004 concerning the designation of S.A. Moldtelecom as the country's transit operator. However, there is not yet an established cost accounting scheme in place for the incumbent operator.

Despite the fact that regulatory obligations for transparency and cost orientation exist, new entrants often have to rely on retail tariffs with discounts or retail-minus pricing. Consequently, there are still segments where the cost-orientation of leased line tariffs is not fully ensured.

The pricing structure is very complex, with 32 different permutations of price, depending on the length of the line (prices change at 20 km increments) and for every increment of 64kbps in line speed (from 64kbps to 2048kbps). For example, a 64k leased line of 80km-100km costs 105 Euro per month; a 1024k line of the same length costs 235 Euro; and a 2048k line of that length costs 340 Euro.[36]

Installation times vary widely and Moldtelecom's services are significantly slower than other providers. Based on discussions with industry, repair times across the sector appear to be two to four hours.

Below is a brief overview of international leased line pricing in Moldova (all prices in Euro).[37]

International Leased Line Pricing in Moldova (Euro)

	EU (average)	Moldova	EU (average)	Moldova
	64 kbps		**2mbps**	
Near EU country	7,500	785	100,000	7,850
Distant EU country	10,000	1,160	130,000	11,600
USA	12,000	3,863	150,000	38,630

3.9 Mobile Services

There are two mobile 2G GSM 900 operators in Moldova, Voxtel[38] and Moldcell,[39] and there are no MVNO's currently in the market. In addition, Interdnestrcom[40] provides unlicensed CDMA services in the Transdniestria region. The third mobile licence was issued to the incumbent fixed line operator, Moldtelecom, in June 2006. In October 2006, the Government decided to pave the way for another GSM operator and the tender for awarding the licence was launched in November 2006.

The launch of 3G services is planned in the National Strategy on Building the Information Society in Moldova, although specific timetables have yet to be set.

According to the NRA, as of 1 July 2006, there were 1,194,500 mobile subscribers in Moldova, representing a penetration rate of 35.2 percent. In the first six months of 2006, again according to ANRTI, Voxtel increased the number of subscribers by 68.5 thousand and Moldcell by 36.2 thousand. The total revenue of the mobile market for the first 6 months of 2006 reached 826.8 million Lei (53.23 million Euro)

As of 1 July 2006, Voxtel had a 60.1 percent share of the mobile services market and Moldcell 39.9 percent.

[36] All figures from Moldtelecom S.A.(http://www.moldtelecom.md/docs/tarife_CrossNet_International_ro_2006.pdf)

[37] Sources: Brussels, 2.12.2004 Sec(2004)1535 Volume ii, Commission Staff Working Paper, Annex to the: European Electronic Communications Regulation and Markets 2004 (10th Report); Moldtelecom S.A.

[38] http://www.voxtel.md/

[39] http://www.moldcell.md/eng/

[40] http://www.idknet.com/english/

Prepaid cards are far more prevelant than other forms of payment, respresenting 84 percent of total number of users. There is a slow increase in the proportion of postpaid customers, which grew from 14.8 percent in 2005 to 16 percent in 2006.

Investment in mobile infrastructure in the first six months of 2006 reached 153.4 million Lei/9.877 million Euro: Voxtel spent 97 million Lei/6.24 million Euro and Moldcell invested 56.4 million Lei/3.63 million Euro.

EDGE services have started in Chisinau by Moldcell and, according to the Basa press agency, on 9 September 2005, 30.26 percent of the population was covered by these services. TeliaSonera, a major shareholder in Moldcell, has indicated that it intends to invest 60 million US$ (49.6 million Euro) over the coming five years for rollout of EDGE services.[41]

WAP services were used by 23,032 users in 2005.[42] The cost of using WAP services is 0.045 Eurocents/minute.[43]

ARPU per month was 121 Lei (7.79 Euro) in 2005. This represented a 9 percent increase in comparison with 2004.

On average, 25 SMS messages per subscriber are sent by mobile subscribers per month (October 2006 data).[44]

The standard service package for fixed line services costs 1.45 Euro per month.[45] In comparison, the average monthly mobile subscription for Moldcell's "Fantasy" package, for example, is 2.18 Euro.

3.9.1 VOXTEL

On 12 September 2005, the mobile operator Voxtel launched GPRS services. The new service package "Internet Mobil Online" was announced on 13 September together with a new Portal "My Voxtel". In the first 10 days after the launch, more than 6,000 subscribers connected to the IMO service. On October, 2006, Voxtel had over 200,000 GPRS subscribers. MMS messages cost 0.15 US$/0.12 Euro per message for post paid subscribers and 0.25 US$/0.21 for prepaid clients.[46]

Mobile Internet services for contract customers cost approximately 0.41 Euro per megabyte.

Voxtel reports an average of 15 SMS per month (9.2 SMS for prepaid customers) per subscriber.[47] 34.7% of population covered by EDGE services, 91.6% of the territory of Moldova and 95.2% of the population are covered by Voxtel mobile services. The company said it had 800,000 consumers at the end of October 2006.[48]

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[41] BASA-economic Chisinau-03.10.2005/15:12:09

[42] Information received from ANRTI

[43] Information received from Moldcell

[44] Based on Moldcell information

[45] Information received from Moldtelecom

[46] http://www.voxtel.md/imo/index.html?PHPSESSID=ddff34ac2bcf5d527802f5d8ba563def#4

[47] Voxtel information (September 2006)

[48] http://www.voxtel.md/ (18.10.2006)

As from October 2006, international tariffs have been decreased by 10%-40%.

3.9.2 MOLDCELL

As of September 2005, one third of the Moldovan population had access to Moldcell EDGE services, with 88 percent having access to its GPRS services. Moldcell also offers an "IPCell" service offering international VoIP services at comparatively low rates (2.39 Lei / 0.15 Euro per minute for European landlines, for example). Moldcell also offers Java game downloads.

As of October 2006, MOLDCELL's network is available to 89.44% of population on 90.70% of the territory of Moldova.[49]

Moldcell decreased the prices for WAP and Mobile Internet by 50%, with MMS being offered at the same price as SMS (August-November 2006). The tariffs for using the MMI service (WAP and Mobile Internet) for Moldcell (contract) subscribers is 0.3 MDL(0.02 Euro)/100 KB (VAT inclusive) and for ALOCARD (non-contract) users: 1 counter (costing from 1.9 lei to 0.44 lei or 0.12 to 0.03 Euro depending on the volume purchased)/200 KB.

In collaboration with the DNT Association,[50] Moldcell offers the possibility of being informed about every new e-mail message received by subscriber of the MAIL.MD service. For every new email message that is received, an SMS notification containing the sender's name, e-mail subject and date of email delivery is sent.The price for a received SMS notification is the same as the price of sending an ordinary SMS.

3.9.3 TRANSDNIESTRIA MOBILE MARKET

There are 2 companies providing services in the Transdniestria region: Transtelecom[51] for fixed services and Interdnestrcom (established in 1998) for fixed and mobile services in CDMA 850MHz and CDMA 450MHz bands. The CDMA 450MHz technology network was implemented in May 2005 and has almost 95 percent coverage of the territory. The number of mobile subscribers was 60,000 in 2005.

3.10 Satellite Services

Moldova is a small country with a relatively uncomplicated terrain for the rollout of communications networks. Satellite communications within the country are not economically feasible because the distances between villages and towns on average are not more than 5-10 kilometres.

Moldova installed two ground stations for international satellite communications in 1992 for connection with Europe (through Telecom Danmark), and with North America (through

[49] http://www.moldcell.md/Coverage/Moldova

[50] http://www.dnt.md

[51] http://www.transtelecom.md/

Teleglobe Canada). These ground stations created direct connections with European and overseas countries, bypassing Russia. Moldova also has ground stations ensuring interconnection with Russia and for overseas communications (Americas, Australia).

TELEPORT Chisinau is offering 155Mbps broadband Internet services to operators and corporate users via the Skyvision Global Networks Company.[52] There are residential satellite services in Moldova, and no geographic areas exist that need universal service to be provided by satellite.

The NREN RENAM[53] is supported by satellite.

3.11 Status of the National Regulatory Authority (NRA)

The national telecommunications regulatory body in Moldova is the National Regulatory Agency in Telecommunications and Informatics (ANRTI). There are some ambiguities in the division of functions between the different relevant state bodies (Ministry of Information Development, State Communications Inspectorate, Ministry of Economy and ANRTI) in the licensing process and definition of significant market power.

The dominant operator, Moldtelecom S.A., after four attempts at privatisation, remains a Joint Stock Company with 100 percent state ownership. This creates some tension between ANRTI and the Ministry of Economy and Trade, which is responsible for the incumbent as state property and the Ministry of Information Development, responsible for policy in the sector.

ANRTI possesses basic financial resources to enable it to fulfil its tasks. However, concerns have been raised regarding both the level of expertise and general staffing of the agency.

The range of regulations that is overseen by ANRTI includes the following:

- Overseeing regulation and technical standards in the ICT sector;
- Licensing, monitoring and combating anti-competitive behaviour;
- Approval of tariffs for public ICT services, when the operator holds a dominant position on the market for these services;
- Management of the ccTLD ".md";
- Establishment of principles and rules of interconnection;
- Ensuring equal conditions of access to ICT networks for all users, as well as guaranteeing free access to data transfer through public networks, regardless of the type of ownership;
- Monitoring and inspection of licence conditions;
- Application of sanctions, including fines, within its competence and in conformity with the provisions of the law.

Competence overlaps in the transitional phase between the Ministry of Transport and Communications (responsible for policy until May 2005) and the new Department of Information Development has resulted in ineffective or late regulatory interventions.

[52] http://www.sky-vision.net/easternEurope.asp

[53] http://www.renam.md/

The Competition Protection Authority that was to be created under the provisions of the Competition Law (2000) has yet to be set up. As ANRTI does not, it appears, politically able to designate Moldtelecom as holding SMP, this makes imposition of effective regulatory measures significantly more difficult.

On 19 October, 2005, the Government adopted a Decision on the establishment of the National Agency for the Protection of Competition.[54] The Parliamentary Committee for Economic Policy, Budget and Finances adopted amendments to the Law on Competition Protection in its first reading on 2 November 2005 (a second reading is still required)[55] to take account of changes in circumstances since that law was drafted in 2000. The amendments stipulate, inter alia, that some important decisions regarding compensation and damages will be taken at the Competition Protection Authority's initiative and through the courts. The proposals also support the creation of a National Agency for the Protection of Competition that is independent from the Government.

There are established guidelines and timetables regarding how quickly the NRA has to deal with disputes in the Regulation on Dispute Resolution between Operators, and between Operators and Users by the National Regulatory Agency for Telecommunications and Informatics. The Regulation establishes the following timetable:

- Within five working days of receipt of a request for dispute settlement, the [Legal Office] of ANRTI will determine whether the application is complete and meets the requirements of Section 2(c) and notify the parties of its decision.
- If the petition is accepted, the respondent will have seven working days in which to submit a reply to the observations and documents in the complaint. The reply should also state the name and contact information of the person whom ANRTI should contact to discuss the details of the dispute. If the name of the contact person changes, the respondent must inform ANRTI of the new information.
- The complainant may submit a response to the respondent's reply within five working days of receipt of the reply. The respondent will then have five working days to submit, if need be, a second reply.
- The request for dispute settlement and all written pleadings will be submitted within 22 working days, or approximately one calendar month from the initial complaint.
- All documents and any other material filed by any party must be delivered by hand to ANRTI and the other party to the proceeding. Ten copies of all pleadings should be filed with ANRTI.
- ANRTI will have four months from the time it receives the respondent's initial response to reach a decision. ANRTI may extend this period to six months if it is necessary to obtain an expert's opinion.

ANRTI has evidence that systematic appeals are being used by the incumbent operator as a method of delaying the implementation of NRA decisions in favour of new entrants.

ANRTI publishes draft documents on its web page[56] for public consultation and conducts public hearings.[57] The consultation processes of ANRTI appear to be sufficiently transparent

[54] Info-Prim Neo News Agency, 20 October 2006

[55] Chisinau-02.11.2005/12:32:50/(BASA-business)

[56] http://www.anrti.md

[57] http://www.anrti.md

and major market players consider them adequate. However, avoiding undue lobbying pressure by service operators, such as the incumbent, remains a problem for ANRTI because of the level of state ownership. Any regulatory intervention for accelerating the liberalisation process can be interpreted as negatively affecting the interests of the state.

The European Union-Moldova Action Plan stipulates the need to: "*[e]nsure the independence, increase the powers and improve the efficiency of the National Agency for Regulation in Telecommunications and Informatics (ANRTI) by providing additional human and financial resources and increasing enforcement powers.*" Increased focus on the independence, powers and efficiency of ANRTI should serve to significantly improve its effectiveness in ensuring transparency and competition in the Moldovan electronic communications sector.

There are 3 main provisions in the existing Telecommunications Law which undermine ANRTI's ability to act independently of Government:

- Nomination of the Directors by the Government
- Consultation with the Government (before approval) of tariffs for dominant operators
- Annual budget approval by the Government

The level of administrative problems in ANRTI can be shown by the fact that the organisation has not had a chairman since December 2005 and one of the two deputy chairman posts has been vacant since June 2006. The one deputy director in office is not in a position to take executive decisions on his own, effectively paralysing the decision-making powers of the authority. These problems would not be solved by the current draft of the new Electronic Communications law.

In 2005, the Moldovan government proposed a merger of ANRTI with the National Agency for Energy Regulation. The draft Law was approved by Government Decree 692 of 13 July 2005 and submitted to the Parliament. The Parliament has postponed its examination of the proposal due to an alleged lack of clear justification for the move.[58] Various international organisations such as the World Bank and IMF[59] have expressed concern about the proposal. The study team has not found, and is not aware of, any clarification being available from the Moldovan government as to why it wishes to take this step.

ANRTI is funded by by a levy of up to 0.3 percent (in 2006 this figure was 0.2 percent) of revenue generated from communications service provision. In 2006, this equated to 7,280,000 Lei or approximately 468,000 Euro.

3.12 Licensing and Authorisation

Licensing procedures for the telecommunications and informatics sector are laid down in the Law on Telecommunications (1995, amended 2001) and the Regulation on Licensing in Telecommunications and Informatics Sectors (2002). Additionally, Articles 5, 8, 9(1), 18, 22(6-8) and 23 of the Law on Licensing Certain Types of Activities 451-XV of 30 July 2001

[58] Basa Press 28.09.2005-Basa-Economic.

[59] Copies of correspondence between various international organisations and the Moldovan authorities have been seen by the study team.

apply to the telecommunications sector. The National Regulatory Agency in Telecommunications and Informatics is responsible for licensing in the telecommunications and informatics sector in Moldova.

On the basis of Article 8 of the Law on Licensing Certain Types of Activity, ANRTI can issue licences for the following types of activity:

- Fixed international, local and/or long-distance telephony service provision;
- Cellular mobile and/or satellite telephony service provision;
- Informatics service provision; and
- Construction, maintenance and/or operation of radio and television stations and cable television networks.

Licences issued by ANRTI are classified in two categories:

- Individual licences: licences for the use of scarce resources (radio frequencies, numbering resources, etc.) and/or licences of special state interest.
- General licences: licences that do not provide for the use of limited resources and/or are not of special state interest.

The Commission must adopt a decision regarding licence issuance or application rejection within 15 days for general licences and 30 days for individual licences from the day the applicant filed the complete set of necessary documents. If the licence is issued on the basis of a tender, the period of tender proceedings will not be included in the licence issuance period.

The following can serve as grounds for rejecting an application:

- The applicant did not submit the complete set of documents necessary for obtaining a licence;
- Erroneous data in the documents submitted by the applicant;
- Unavailability of resources (frequencies or numbering resources); or
- Request for a type of activity that is under the control of the state monopoly or is not included in the Licensing Regulation.

The licence fees for telecommunications and informatics services (including VoIP) are stipulated in the Law on Licensing and in the Licensing Regulation and are as follows:

- The fee for a licence to provide mobile cellular services or interurban and international fixed telephony services must not be less than the equivalent of 1 million US$ (826,446 Euro). Government Decision 296 of 18 March 2005 set the price for a cellular mobile CDMA 2000 450MHz licence at 8 million US$ (6,661,570 Euro). Decisions regarding the issuance of the various licences must be published in the Official Monitor of the Republic of Moldova.
- The fee for all other licences is 2,500 Lei (161 Euro)
- The fee for re-registering a licence is 10 percent of the total cost, while issuing a duplicate of a licence is 50 percent of the total cost.
- The licence fee is transferred to the state and to the local budget, as appropriate.

In a general effort at reducing bureaucracy, the Government approved by Decision 920 of 30 August 2005, the List of Authorisations, Permissions, and Certificates to be issued by central

public authorities for legal and natural persons for entrepreneurial activities."[60] According to this document, the authorities are obliged to issue the requested certificate or authorisation included in the List within ten days from when the request is submitted. Several certificates are issued without payment. This serves to simplify procedures and reduce costs for market players.

Although licensing procedures have been simplified over the past few years, ANRTI has recognised that the lack of involvement of the smaller market players in the consultation process with regards the simplification of procedures undertaken under the "Guillotine Law"[61] meant that not as much progress was made on improving licensing procedures as could otherwise have been the case.

IT companies consider that there is a contradiction between ANRTI Regulation on Licensing and the legislation in force, specifically that the law provides that IT companies should not need licences for their activities on development of IT systems and software.[62]

3.12.1 CDMA Mobile Licence

The CDMA 450MHz licence initially issued by ANRTI to Interdnestrcom and withdrawn in the same month (in 2004) based on the Constitutional Court Decision, was finally awarded to Moldtelecom (21 June 2006).[63] The licence was awarded directly and the national operator paid fee of 8 million US$ (6.61 million Euro). Moldtelecom intends to launch a mobile telephony service by the end of 2006.

The leading mobile operator, Voxtel, expressed its concern about the allegedly non-transparent procedure used to award this licence and requested that ANRTI take the measures necessary to prevent cross-subsidising of Moldtelecom services and that it develop measures to ensure such opaque licence-allocation procedures not being used in the future.[64]
Mobile licences are published on the ANRTI website: http://www.anrti.md

3.12.2 CDMA WLL Licensing

On 23 September 2005, ANRTI issued Decision number 15 On Regulating Local Fixed Telephone Networks That Use Radio Access WLL based on CDMA Technology.[65] The Document was issued in view of the installation by Moldtelecom of a CDMA 2000 network in the 450MHz band under the provisions of its fixed telephony Licence.

Under the Decision, a fixed network licence holder must:

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[60] Government Decision nr. 920 of 30.08.2005 "Concerning Classified List of Authorisations, Permissions and Certificates Issued by Central Administration Authorities and Their Subordinated Bodies for Natural and Legal Persons for Entrepreneurial Activity" Official Gazette nr. 126-128 of 23.09.2005.

[61] A law which establishes a process whereby legislation that is considered counterproductive is repealed or "guillotined". For other examples, see http://www.kafka.be and http://www.bulldozer.ba

[62] Source: Endava srl

[63] http://www.anrti.md/ro/licen/Cond%20lic.htm

[64] Voxtel press release 1.07.2006 http:// www.voxtel.md

[65] Official Journal of the Republic of Moldova nr.129-131 (1728-1730) din 30.09.2005

- limit the mobility of the terminal equipment connected to a terminal point of the fixed telephone network;[66]
- prevent automatic call handover between sectors and base stations;
- install only fixed CDMA terminal equipment without R-UIM cards, at the premises of local fixed telephony subscribers connected to the local fixed telephony network via WLL;
- use specific geographic numbering blocks;
- inform subscribers of the terms of use of the WLL service.

The Decision was considered necessary to avoid a situation where Moldtelecom could provide mobile services without the relevant licence.

3.12.3 3rd GSM Licence

In October 2006, the Government announced its decision to permit a third GSM 900/1800 mobile telephony operator to enter the market and established an 8 million dollar (6.61 million Euro) fee for this licence. ANRTI will now organise a contest for the selection of the future operator.

The winning bidder will pay half of the fee within 30 days after receiving the licence and the remainder after two years.

The first two GSM operators, Voxtel and Moldcell companies cautiously welcomed the decision. They called for the development of the mobile telephony market in Moldova, but under equal and transparent conditions. They consider that, in spite of the dynamic development of mobile telephony market, there is little spare capacity in this market and it may be difficult for four mobile telephony companies to attract enough revenue to ensure adequate investment.[67]

3.12.4 3G Licence

Although the National Strategy "e-Moldova" foresees the issuing of a 3G licence, the government does not yet seem to have a view with regard to when and under what conditions this would happen.

3.13 Spectrum

Considerable progress has been made in Moldova in recent years towards greater consistency in the management of radio frequencies. There is now a published National Frequency Plan and an authority (SCRF – see below) designated as responsible for

[66] "Terminal point of the fixed telephony network": a physical point where the subscriber is offered access to a public fixed telephone network, in which routing or switching is used; this terminal point is identified by a fixed address of the network that can be associated with the number assigned to the subscriber

[67] Basa press, 06.10.2006 / 09:14 / EEN0959

frequency management. The State Communications Inspectorate, SCI, regulates spectrum use in Moldova. No major outstanding problems regarding general frequency management have been reported.

Article 32 of the Moldovan Telecom Law states that "*spectrum is a national resource*." The State Commission for Radio Frequencies (SCRF), under the responsibility of the Government, administers national spectrum in Moldova. The SCRF acts pursuant to regulations approved by the Government. The SCRF drafts and implements state policy on allocation and use of radio frequencies spectrum and the positions of geo-stationary orbits. The SCRF approves the National Table of Radio Frequencies (NTRF) for public use, protection and security. The table was first published in 2000, in line with the European Table of Frequency Allocation, and was last amended in 2005. The SCRF is also responsible for the procedure of allocation of radio frequencies for general use. Frequencies are allocated to licence holders (for GSM, CDMA, radio-broadcasting) or are authorised for use by legal persons for other radio services.

The Ministry of Information Development (former Ministry of Transport and Communications) allocates radio frequencies for public purposes. Payment for allocated radio frequencies is made to the SCI in accordance with the effective tariffs, approved by the Ministry (as amended by Law 842-XIV of 25 February 2000).

The State Communications Inspectorate (SCI) is given responsibility for assisting in the planning and allocation of radio frequencies by Article 38 of the 1995 Law on Telecommunication. The SCI conducts the following activities: planning and coordination on a regional and national level, management and monitoring of radio frequencies intended for civil purposes, and coordinating the installation and monitoring of electromagnetic wave emitting equipment designed for civil purposes in Moldova.

As the World Bank ICT Diagnostic Report says: "*in the area of frequency monitoring, Moldova is lagging in ensuring objective, transparent and non-discriminatory procedures insofar as the State Communications Inspectorate (SCI), the frequency regulator, is involved in decisions on allocation and use of frequencies, should be subject to the same regulatory controls as ANRTI*.[68] Therefore, while there are no major problems to report to date, some procedural difficulties have been identified.

Wi-Fi is permitted without a licence, although an authorisation is required.

[68] See, § 6 of the WTO Reference Paper dealing with Scarce Resources, Annex 2

4 REGULATORY ENVIRONMENT FOR ONLINE SERVICES

4.1 Digital Signatures

In July 2004, two key laws were adopted: the Law On e-Commerce[69] and the Law On Electronic Documents and Digital Signatures.[70] These laws establish the legal framework for electronic documents and digital signatures. These were followed in 2005 by the Regulation Regarding the Modality of Creation and Organisation of the Activities of Public Key Certification.

The laws give electronic documents the same legal power and effect as paper documents. The laws also provide definitions for terms such as: electronic document, digital signature, certification, certification centres and liabilities. The liabilities of all participants, including certification centres, involved in the development of electronic signatures are also specified.

The laws stipulate that the Government regulates the certification procedure and that certification centres will be licensed under the Licensing Law. However, digital signature certification centres for public authorities and for corporate use do not require a licence. There will be one top-level Certification Centre and others of a lower level.

The state Information and Security Service has been designated as the supervisory authority for digital signature procedures. The procedures for licensing, the legal and technical recognition of digital signatures, and authorisations for certification service providers are in the process of being established.

The laws appear to permit the functioning of an electronic document system and to contain the necessary minimal conditions listed in EU Directive 1999/93/EC on a Community Framework for Electronic Signatures.

Three further important regulatory documents were approved in April 2006. These were the Regulation of the Centre for Certification of High Level Public Keys,[71] the Regulation Regarding the Procedure of Registration of the Centres for Certification of Public Keys,[72] and the Special Conditions for the Activity of Centres for Certification of Public Keys.[73]

On September 14, 2006, the first Pubic Key Certification Centre was opened in Chisinau by the Centre for Special Telecommunications (CST). It issues keys for public servants working in public administrative institutions.[74] The Centre is preparing tariffs for providing services to

[69] The Law on Electronic Commerce Nr.284-XV of 22 August 2004. Official Gazette of the Republic of Moldova nr.138-146/741 of 13.08.2004

[70] The Law On Electronic Document and Digital Signature Nr.264-XV from 15 August 2004, Official Gazette of the Republic of Moldova nr.132-137/710, 06.08.2004

[71] http://www.sis.md/data/laws/ro1144695654REGULAMENTUL_CA_rom.pdf

[72] http://www.sis.md/data/laws/ro1144696159REGULAMENTUL_procedura_rom.pdf

[73] http://www.sis.md/data/laws/ro1144696227Conditiile_speciale_rom.pdf

[74] http://gov.md/index.php?a=snews&n=741&lng=ro

the general public, which are likely to be approved by the Ministry of Finance before the end of 2006.

4.2 Payment Systems

The 2005 e-Commerce Law establishes that goods and services must be paid for in accordance with international payment systems and Moldovan legislation. Integration into the international banking system has helped bring about the use of electronic payment systems. To ensure a procedural framework for the use of electronic payment systems, the National Bank of Moldova (NBM) approved Regulations 58/11-02 of 25 May 1997 regarding the organisation of bank card payments by commercial banks in the Republic of Moldova, and Regulation 404 of 25 December 1998 on the numbering of cards issued by the banks authorised by the NBM.

The NBM is the owner and the manager of an interbank payment system, which makes transfers of electronic credits both on behalf of participant banks and on behalf of their clients. With regard to card payment systems, the NBM has taken on the role of general regulator of the development and supervision of consumer rights. To implement this role, the NBM creates regulations, analyses risks and trends, and performs spot audits regarding the application of procedures.

The NBM has one more important function: it uses its interbank payment system to make all daily closing transfers of amounts collected by the commercial banks from card transactions.

A Regulation from the Administrative Council of the NMB was adopted in February 2005 and entered into force on 30 June 2005 (Official Gazette nr.98-100 of 22 July 2005). This Regulation provides Moldovan Banks with clear rules on bank card operations. It defines the rights and obligations of the issuing bank in organising the card payment system and in accepting and using cards, as well as rules for monitoring and reporting. It also details the rights and obligations of all actors in the banking cards payment system.

A new Regulation Regarding Automated System of Inter-bank Payments was approved by the National Bank of Moldova on March 2, 2006,[75] entering into force on 21 April 2006. This establishes rules and procedures for inter-bank payments through a new automated system on the territory of the country.[76]

On March 23 2006, Moldcell launched a service for clients who also are Eurocredit bank account holders. This service allows them to use on-line banking services (utility and other bill payments, balance information, etc) through the WAP site Telebank.[77]

[75] The Official Monitor of The Republic of Moldova nr.39-42/144 of March 10 2006

[76] http://www.bnm.md/romanian/docs/pr/71_4825.pdf

[77] http://www.moldcell.md/eng/news/view/228

5 USE OF ELECTRONIC COMMUNICATIONS SERVICES

The European Union Moldova Action Plan, signed in February 2005, indicates a commitment of the Government of Moldova to undertake effective measures to build a comprehensive Information Society. Introducing legislation and a regulatory framework in line with the new EU electronic communications framework is one of the main initiatives of the Plan. The Government has requested that all its institutions implement provisions of the Plan under monitoring from the Prime Minister's Office.

5.1 Fixed Telephony Penetration

According to ANRTI, the fixed telephony penetration rate rose from 19 percent in 2002 to 21 percent in 2003, to 25.5 percent in 2004, to 27.3 percent by the end of 2005, and to 28 percent in mid 2006. There is a significant urban-rural split, with urban penetration going up from 32.9 percent (2002) to 34.9 percent (2003) to 41.3 percent (2004) and 43.5 percent (2005) in the same period and rural penetration lagging at 10.7 percent (2002), 12.7 percent (2003), 15.6 percent (2004) and 16.4 percent (2005) respectively.

Practical efforts have been made to bridge the urban-rural divide. For example, a universal service pilot project launched in the Nisporeni district has created public access centres that are open around the clock and provide access to public fixed local, interurban and international telephony services, access to emergency services and access to the Internet.

Virtually 100 percent of businesses are connected to the fixed telephone network.

Under the National Strategy for the Building of the Information Society,[78] Moldova aims to reach the average level of fixed telephony penetration of Central Europe (i.e. 35 percent[79]) by 2010. Additionally, the Moldovan Village Programme aims to close the existing urban-rural gap.

From 2000 to 2006, there was an increasing trend of extending the digitalisation of fixed telephony networks, which was considered an important contribution to the improvement of services. Although the capacity of installed digital lines reached 59 percent in 2004, passed the 60 percent barrier in 2005, and stood at 67% in the first half of 2006, it still remains relatively low, and is much lower than in other Central European and EU countries, where the digitalisation of fixed telephony networks is almost complete.

The incumbent fixed-line operator, Moldtelecom, continues to dominate the ICT market in Moldova. Moldtelecom has heavily invested in the building of a CDMA2000 450MHz telecommunications network. It has invested a total of 680.9 million Lei (43.5 million Euro). Most investments were used to extend the capacity of exchanges, to connect new

[78] The National Strategy for the Building of the Information Society was approved by Government Decision 255 of 9 March 2005.

[79] See Telecommunications Year 2006, Telecom 2006, Bucarest 13 June 2006

subscribers, to modernise, develop and construct exchanges in district centres, and to develop and modernise exchanges and local loops in rural areas.

Moldtelecom has also invested heavily in a state-of-the-art fibre optic network that connects all of Moldova's urban centres. This CrossNet Network (an overlay network making it possible to provide leased lines over the whole territory of the country), which is now fully operational, made Moldtelecom the first telecoms company in the CIS to possess such a network. In 2001, Moldtelecom launched a video telephone service for videoconferences, of which the Government is the main user.

Moldtelecom's revenue from its fixed network in Moldova in 2005 was 1,968.5 million lei (128 million Euro) The market share of fixed telephony was 51.56% of total telecom market. In the first half of 2006 this revenue was 959,920 million lei (61,805 million Euro).

ARPU of fixed lines operators was 168,24 lei/month (10.8 Euro) for the first semester of 2006.

According to ANRTI, the market share in fixed market by revenues was as follows (2005):

- S.A.Moldtelecom – 99.58 percent
- Î.S.Calea ferată din Moldova (Moldovan Railways)– 0.0511 percent
- S.A.Riscom[80] – 0.0181 percent
- S.A.Arax Impex[81] – 0.3453 percent
- Sicres[82] – 0.004 percent

Investment in fixed telephony networks in the first half of 2006 increased by 47% compared with the same period in 2005, amounting to a total of 283.8 million lei (18.27 million Euro). The number of fixed subscribers increased by 21.5 thousand and reached 950,900, representing a penetration rate of 28%. Moldtelecom connected 17,600 new subscribers to its network, with alternative operators adding a further 3,900.

On July 1 2006, 42 fixed telephony licence holders were registered, although only six of them were actually providing services: SA "MOLDTELECOM, ÎS Calea ferată a Moldovei, RISCOM, ARAX-IMPEX, SICRES and Telcom Tehnologies.[83]

5.2 Mobile Usage

Mobile telephony is developing rapidly, and the user base continues to grow. Indeed, mobile penetration overtook fixed line penetration for the first time in 2005. The number of mobile subscribers increased from 787,000 in 2004 to 1,090,000 by the end of 2005 and 1,194,500 in mid 2006. This represents a penetration rate of 35.2 percent.

[80] http://www.riscom.net/

[81] http://www.arax.md/

[82] http://www.sicres.md/en/

[83] ANRTI press-release , September 14, 2006, http://www.anrti.md

According to ANRTI, over the course of 2004, Voxtel increased its number of subscribers by 31.4 percent and Moldcell by 22 percent. Voxtel had 60.5 percent market share and Moldcell 39.5 percent. In mid 2006, Voxtel had 60.9% and Moldcell 39.1%.of the market share.[84]

According to the ANRTI report 2005, revenues from mobile telephony services rose by 52.4 percent to 1,362 million Lei (87.7 million Euro). The revenues for the first half year 2006 were 826,800 million Lei (53.23 million Euro) and investment stood at 153,400 million Lei (9.876 million Euro).

Investment in mobile infrastructure in 2005 reached 449.3 million Lei/28.9 million Euro (Voxtel: 274 million Lei/17.64 million Euro; Moldcell: 175 million Lei/11.26 million Euro), an increase of about 40 percent year on year. The ARPU of Voxtel was at almost 142 Lei (9.14 Euro), while that of Moldcell stood at around 90 Lei (5.79 Euro).

Voxtel's geographic coverage stands at 91.6 percent while that of Moldcell services has reached 89.44 percent. The population coverage rates are 95.2 and 90.70 percent respectively.

Moldcell launched GPRS/EDGE services for use with computers at the end of 2005, at prices ranging from 84 Lei to 184 Lei per month (5.40 Euro to 11.84 Euro respectively) with traffic limits of 16 mb and 40 mb respectively.

5.3 Cable Services

The percentage of private households connected to cable networks is 48.5 percent,[85] with 27.6 percent actively subscribing to cable services.[86]

In the Chisinau area, there is some redundancy in cable networks, for example, in some areas there are 2 to 3 networks in one building.

5.4 Computer Availability

The percentage of households with personal computers is 10.2 percent, with a major difference between urban (80 percent of computers nationally) and rural households; while 28 percent of the population has access to a computer.[87] According to the Moldovan Statistics Agency, in 2005 the average monthly wage (January to November) in Moldova was approximately 1,285 Lei (about 83 Euro), which is approximately one quarter of the cost

[84] ANRTI press-release , September 05, 2006, www.anrti.md

[85] These data are from the ANRTI Annual Report 2004.

[86] Use of Information and Communication Technologies by the population of the Republic of Moldova PREPARED BY: Centre of Sociological, Politological and Psychological Analysis and Investigations CIVIS, for the UNDP-Moldova, Programme "Building e-Governance in Moldova" Chisinau 2005

[87] idem

of a new computer.[88] The number of personal computers in Moldova totalled 347,991 units in 2005.[89]

9.9% of employees use computers with an Internet connection at work. Of the companies that responded to the 2005 Business Survey questionnaire, there were 5.8 employees per computer. Between 2002 and 2004, the number of computers in business rose from 41,066 to 52,540, with the number of networked computers rising from 25,656 to 42,385 over the same period.[90]

5.5 Internet Access

The total revenue of leased lines and Internet access services in 2005 was 130.5 million lei (8.4 million Euro), or 3.59% of total telecommunications market, an increase of 35.23% over 2004. The total number of Internet connections increased by 340 percent and reached 223,224 compared with 65,743 in 2004.

The number of dial-up Internet connections in 2005 was 50,664, increasing by 26.9% from 2004. According to ANRTI, broadband access connections increased substantially. The number of broadband connections increased by 370 percent and the number of xDSL connections by 480 percent compared with 2004. In July 2006, the number of dial-up connections used in the course of the previous six months was 330,300.

However, the dial-up figures do not include non-subscription services (i.e. pay-as-you-go), such as provided by Internet Total[91] and Telemedia Home.[92] Dial-up providers typically offer connections at approximately 0.07 Lei (0.004 Euro) per minute in urban areas and 0.084 (0.05 Euro) elsewhere.

The average installation cost for a broadband connection decreased from 60 US$ to 25 US$ (49.5 Euro to 20.66 Euro) and the average monthly cost decreased from 27 US$ to 20 US$ (22.3 Euro to 16.5 Euro) for a downstream speed of 256 Kbps**.**

ADSL is the predominant broadband Internet technology. Other Internet access services available in Moldova are Wi-Fi, cable and GPRS. As of July 1 2006, the number of GPRS/EDGE connections exceed 344,600. According to ANRTI, 16 providers were offering broadband services in Moldova on 31 December 2005. Moldtelecom controlled just 6.2 percent of the ADSL market at the end of 2005, with its main competitors being Sun Communications[93] (30.3 percent - 1,345 connections), Starnet[94] (34.1 percent - 1,515 connections) and Globnet[95] (15.3 percent - 680 connections).

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[88] These statistics can be accessed at http://www.statistica.md/dates.php?lang=en&ct=22

[89] Based on Ministry of Information Development figure 10.27% PC penetration rate.

[90] Use of Information and Communication Technologies by the population of the Republic of Moldova

PREPARED BY: Centre of Sociological, Politological and Psychological Analysis and Investigations CIVIS, FOR: UNDP Moldova, Programme „Building e-Governance in Moldova" Chisinau 2005

[91] http://www.moldtelecom.md/services/internet/total/en.html

[92] http://www.telemedia.md/internet_home.html

[93] http://www.suncommunications.md/en.html

Moldtelecom announced free connection to its MaxDSL services between 13th April 2006 and 1st June 2006 for all legal and natural persons without any usage limitations. As result of the campaign, on July 1 Moldtelecom reported 5,220 ADSL connections and other operators reported 5,701 ADSL connections. These figures represent a rapid increase of the number of Moldtelecom ADSL connections and its share of the market. The total international capacity of Moldtelecom is 465 Mbs to Frankfurt and Vienna via optical cable.

Overall, there has been a significant increase in the number of Internet access providers: In 2004, there were 48 ISPs overall, with 15 providing services in rural areas compared with 68 overall and 35 in rural areas in 2005.[96] In addition, 336 companies were registered, as of 1 September 2006, to provide Internet access services in public places (such as in town halls), 53 of them were active in rural areas[97].

Total investments in data transport services in 2005 stood at 68.9 million Lei (4.436 million Euro) compared with 24.2 million lei (1.6 million Euro) in 2004 . Of this figure, 70 percent were made by state owned companies: Moldtelecom (68 percent) and Molddata (32 percent). The largest investment made a by private company was 4.2 million Lei (0.27 million Euro) invested by Starnet.

In the first half of 2006, revenue from data transport totalled 87,37 million Lei (5.62 million Euro).

On 1 September 2006, 680 companies were authorised to offer information technology services. In 2004, 159 companies held authorisations to offer information society services, including 72 that were authorised to offer data transfer services via land networks and/or VSAT, and 50 more to offer IP-telephony services.

The growth in investment and expansion of the data transfer and Internet access sector has resulted in a rapid increase in the number of Internet users. This number grew from 0.3 to 17.4 users per 100 inhabitants over the period of 1997 to 2004. However, the Internet penetration rate is still low in Moldova compared with the EU average.[98]

Internet Access Cost (month)

Internet access : Starnet[99]	Price
ADSL "Home Unlimited" o Daytime Speed 256kbps (8am to 8pm) 256kbps o Night time Speed 400kbps (8pm to 8am) 400kbps	
• Connection Fee	49 Euro
• Monthly Fee	20 Euro
• Additional price/mb	0.40 Euro
Dial-up	

[94] http://www.starnet.md/

[95] http://www.globnet.md/

[96] Data provided by ANRTI on 7 July 2005

[97] ANRTI press release of September 20, 2006

[98] These data are from various sources: the Statistical Department, the UN- Millennium Indicators Data Base (ITU estimations), and the e-Readiness Report Moldova (2004).

[99] Starnet was chosen as a random example. Prices on Starnet's website (http://www.starnet.md) are in Euro.

• Moldtelecom - Dial Internet Unlimited	$10.0 (8.26 Euro)
• Moldtelecom - Dial Internet (night) Unlimited	$5 (4.13 Euro)

Sources: Moldtelecom and Starnet websites

According to a survey conducted under the National Strategy on Information Society Development, the number of Internet users, accessing the Internet regularly (minimum once a week), reached 406,000 in 2004. This represents an increase of 118,000 since 2003. This growth was based on the introduction of new data transport service providers on the market, and the opening of new public Internet access centres, as well as by active connections of schools to the Internet through the Presidential program "Salt."[100]

5.6 Public Internet Access Points

There were 426 Internet cafés by the end of September 2006. In addition, about 102 PIAPs were established in rural areas and 82 libraries were equipped with computers with Soros Foundation support.

In addition, there were 57 telecentres in the country.

5.7 Wireless Internet Access

There are no licensing restrictions on Wi-Fi in Moldova. There are currently eight Wi-Fi service providers in the country.

[100] Salt (Moldovan for "jump") is a programme to equip schools with IT equipment and access to the Internet

6 AVAILABILITY OF ONLINE SERVICES

The 2005 business survey, showed that 64.9 percent of enterprises used computers in their operations, and 35.5 percent planned to purchase computer equipment.[101] On average, 13.3 percent of individual employee work spaces are equipped with computers. Of the businesses with computers, 76.5 percent use local networks and 29.4 percent use teleworking services via the Internet.

48.8 percent of all companies have access to the Internet, and 82.7 percent of them use the Internet daily. The survey reveals that the number of employees that use computers connected to the Internet is limited to an average of 9 people in the majority of medium-sized companies (from 50 to 249 employees). Several people normally use one (the same) computer with Internet access; therefore the rate of computers connected to Internet in relation to the number of employees is only 6 percent.

The Internet in business is primarily used to look for business-related information (market news, offers, prices, clients, and partners) and as a means of communication (e-mail), and in large enterprises (with more than 250 employees).

The level of Internet use also depends on the type of activity of a business. The percentage of employees using the Internet is higher in high-tech-related sectors (88.2 percent), mass media (100 percent), telecommunication services (92.9 percent), tourism (100 percent), and business services (84 percent).

The most common way to connect to the Internet in the business sector is by dial-up. 52.6 percent of companies (or 39.4 percent of companies connected to the Internet) use dial-up, whereas 11.7 percent and 21.7 percent of companies use ISDN and ADSL respectively. 39.7 percent of companies are connected via broadband.[102]

As for the circulation of electronic documents, the survey revealed that:

- 30.1 percent of respondents have received orders via the Internet;
- 36.5 percent have accessed public agencies' websites;
- 40 percent of companies that use Internet have their own web page;
- 23.1 percent have obtained information in electronic form.

Other types of interaction with public agencies via the Internet are seldom used.

[101] *Use of Information Society Technologies in Business of the Republic of Moldova* . Prepared by the: Centre of Sociological, Politological and Psychological Analysis and Investigations CIVIS, FOR: UNDP Moldova, Programme „Building e-Governance in Moldova" Chisinau 2005

[102] *Use of Information Society Technologies in Business of the Republic of Moldova* PREPARED BY: Centre of Sociological, Politological and Psychological Analysis and Investigations CIVIS, FOR: UNDP Moldova, Programme „Building e-Governance in Moldova" Chisinau 2005

6.1 E-Commerce

The Ministry of Economy and Trade (MET) has started preparation of a new normative act on electronic commerce. MET specialists affirmed that future normative act will exempt companies from requirements to submit a large number of documents to fiscal bodies and will considerably simplify a range of other bureaucratic procedures.[103]

As e-commerce is still in the early phases of development in Moldova, there is very little data available as yet with regards its growth. There are no statistics regarding the approximate turnover of e-commerce divided between B2B and B2C. However, as an indication of growth, the Ournet[104] portal, which is very popular and indexes almost all Moldovan websites, currently lists over 3,370 websites and has registered approximately 20 percent growth per year over the past five years. 52 percent of sites are available only in Romanian and 21 percent offer some or all of their information in Romanian, Russian and English.

A key enabler of e-commerce is the availability of electronic payment mechanisms. The number of payments made with bankcards in 2006 constituted 3 percent of all retail sales and paid services in Moldova. As of 1 July 2006, the total number of cards in use was 493,487 of which 13,362 (2.7 percent) were local cards.[105]

FinComBank[106] launched an online municipal services payment system on 15th June 2005 for users of MasterCard and Visa credit cards.[107]

Moldcell also recently launched a WAP banking service for clients of Telebank.[108]

Ecentru-com[109] S.A. is developing Internet retail outlets in partnership with Ritlabs and S&T Mold companies. One of the main information partners of Ecentru-com is Zingan.com with its portal www.allmoldova.com. In partnership, they have created a range of Internet shop windows such us Bosch (housekeeping equipment), RevelComputers (computers), Sanin (polymer tape), Uniflux-line (data transport technology), AccentTehno (computers, housekeeping equipment), AGEPI (industrial rights protection), FedEx (express mail services), and Infotag (news agency).[110]

According to the .md registry, 470 new domain names were registered in .md as of 1st March 2005, when the price for domain name registration was reduced by 10 US$. The price for domain name registration now stands at 49 US$ (40.50 Euro) per year or 39.95 US$ (33 Euro) per year for a 10 year subscription. For domains “com.md”, “co.md”, “org.md” and “info.md” the price is 24 US$ (19.83 Euro) per annum. The total number of .md ccTLD

[103] Chişinău, 3 oct./MOLDPRES/

[104] http://www.ournet.md/

[105] Raport:Indicii activitatii in cadrul sistemului de plati cu carduri bancare din Republica Moldova pe semestrul I 2006, http://www.bnm.md/md/docs/cs/89_5249.pdf (Report: Indicators of the activities in the banking cards payment system in the Republic of Moldova for semester 1 2006)

[106] http://www.fincombank.md/homee/

[107] http://www.fincompay.com

[108] http://www.moldcell.md/eng/Services/Payments/Wapbanking

[109] Telematic service provider, http://www.e-centru.md/e-centru/Main.aspx

[110] Sergey Moiseev, http://www.cominfo.md

registrations as of November 2006 was 10,400 according to Molddata, the national ccTLD registrar.

The majority of websites in Moldova present information in the official state language, Romanian. The Government institutions' sites also make 70 percent of information available in Russian and 30 percent in English. As a rule, the written mass media, radio and TV companies present information on their websites in the language in which they broadcast (or write in the case of newspapers). More than half (55 percent) of the news agencies publish information on their pages in 3 languages: Romanian, Russian and English. 90 percent of the information by the news agencies Reporter.md,[111] Basa Press[112] and Infotag[113] is translated into Russian and English. The agency Noutati Moldova[114] presents information in Romanian and in Russian. The news agencies GP Flux[115] and Deca-Press[116] present information only in Romanian (as at February 2006).

A perceived lack of local language content is holding back growth in Internet use. Besides local news, which is readily available, other local content, such as analytical articles, scientific materials and e-learning content, with a few exceptions, is scarce. The Technical University of Moldova[117] is now in the process of posting all professors' lectures on the University Departments' web pages.

However, the same language is used in Moldova and Romania, which opens the possibility to access Romanian web resources. Also, the second spoken language, Russian, creates an opportunity to access Russian web resources. Young people in Moldova can generally also speak English and French, which again opens the door to additional web resources.

6.2 E-Government

67 percent[118] of public institutions offer online information regarding their services, role and activities. Information regarding the legal framework is also available.

The UNDP, with finance from the Soros Foundation and the Government of Japan, is developing an e-government project – Building eGovernance in Moldova – in cooperation with the Ministry of Information Development. This involves an assessment of the current situation (Technical Audit of Public Administration Offices Information Systems (Central and Local)), an analysis of ICT usage in the decision making process, training of civil servants (in cooperation with the e-Government Academy of Estonia) and the development of an overall concept for the development of e-government.

[111] http://www.reporter.md

[112] http://www.basa.md/

[113] http://www.infotag.md/news_ro_2/

[114] http://newsmoldova.md/

[115] http://flux.press.md/

[116] http://www.deca-press.net/

[117] http://www.utm.md/en/

[118] Presence and content of websites in the Republic of Moldova, prepared by the Centre of Sociological, Politological and Psychological Analysis and Investigations – CIVIS - in collaboration with Association DNT, for the UNDP-Moldova, Programme "Building e-Governance in Moldova," Chisinau 2005

Within this project, the following initiatives had been completed by November 2006:
A. Policy Support:
1. A Technical Audit Report and Feasibility Study on use of ICT in Public Administration,
2. Four Surveys on ICT use: Household Survey, Business Survey, Web Presence Survey Internet Users Survey.
3. An e-Governance Concept[119] and e-Governance Portal Concept

B. Training
1. The Vision on Training of public servants in ICT (concept paper on how ICT training should be organised and the content of curricula for training courses)
2. An analysis of legislation and proposals for changing current laws
3. National Certificate on Computer Operation manual (textbooks and software for evaluating ICT expertise among public servants).
4. Methodological Norms on training and certification of Public Servants including a curriculum for training of public servants in ICT

C. Electronic Services
1. The tender for choosing the company that will built the e-Tax Declaration Portal & Information System,
2. Technical Requirements for development of the Central eGovernance Portal,
3. Technical Requirements for the eGovernance Gateway,
4. Standard Requirements regarding official web-pages of Public Administration Authorities on the Internet[120],
5. A draft Regulation on Interoperability of Public Authorities in the Process of Providing of Electronic Services,
6. E-governance Visibility Strategy "Acces@m Moldova".

The findings of the Technical Audit are listed in the table below[121]:

E-Government Site Activity in Moldova

Name of institution	Average number of visitors per day
Official Page of the Republic of Moldova	500
Ministry of Information Development	259
State Fiscal Service	130
Agroindustrial Agency "Moldova-Vin"	117
National Bureau for Statistics	80
Ministry of Energy	55
Agency for Material Reserves, Public Acquisitions and Humanitarian Aid	54
Official Page of the Government	50

[119] Government Decision No. 733 of 28 June 2006 regarding eGovernance Concept; Monitorul Oficial of the Republic of Moldova nr.106-111/799 of 14.07.2006

[120] Minister of Information Development Order nr. 99 of 08.08.2006 (http://www.mdi.gov.md)

[121] Technical Audit of Public Administration Information Systems (Central and Local) and the analyses of ICT usage in decision making process in the Public Administration undertaken by S&T Mold within the UNDP Project "Building of eGovernance in Moldova", Chisinau 2006

Moldova's Ministry of Defence	50

The Technical Audit showed a big gap in ICT/Internet access and use between urban and rural public administrations.

The Technical Audit also showed that 36.5 percent of enterprises with access to the Internet access government websites. At the same time, only 23.1 percent of enterprises with access to the Internet download forms from government websites, and only 20.1 percent use the Internet to deliver fiscal reports and bills to state bodies.[122]

Various measures have already been taken to boost e-government deployment, including the launch of a new government portal,[123] increased use of video-conferencing by government, the increased computerisation of government, increased connectivity (using fibre-optic connections) between government bodies, and the use of cryptography for secure connections between government offices. The 1994 law on the publication of official acts was updated in March 2006 to include obligations to have relevant documents published on the government website. In line with new domain name registration rules in Moldova, the Ministry for Information Development has moved to www.mdi.gov.md.

Further developments include an advanced customs informatisation system for monitoring imports and exports (part of an 8-country project and in line with EU policy). The project is being financed by the World Bank.

A pilot project for a "one-stop shop" for business permits was launched in the Cahul rayon (district) permitting low cost, efficient, transparent and rapid provision of permits. A second similar service in Hincesti rayon for planning authorisations has reduced the time taken for requests to be processed from over one year to less than one month. It is expected that there will be at least another ten such systems up and running by the end of 2006.

The website www.justice.md was launched in February 2006 as a central online resource for Moldovan legislation.

The Ministry of Information Development will develop an action plan to create a centralised database which will include information on all state registers of the state institutions of the country.[124]

The Central Commission for Elections approved a Concept on e-Voting. According to the Concept, citizens will be able to vote from everywhere in the world. The system will be implemented gradually until 2013.[125]

[122] Use of Information and Communication Technologies by the population of the Republic of Moldova prepared by: Centre of Sociological, Politological and Psychological Analysis and Investigations CIVIS, FOR: UNDP Moldova, Programme „Building e-Governance in Moldova" Chisinau 2005

[123] http://www.gov.md

[124] http://www.cominfo.md/rom/itnews/3067/

[125] http://www.moldova-suverana.md/index.php?subaction=showfull&id=1160062899&archive=&start_from=&ucat=6&

6.3 E-Health

E-Health is coordinated in Moldova by the Ministry for Information Development, which has integrated this policy area into the wider national programme for the development of the information society. The Ministry stated in April 2006 that there are "*generally low levels of IT use in public medical institutions*",[126] and has identified the receipt and dissemination of information, training of medical staff, and improving transparency of the activities of public medical institutions as core e-health benefits. For the moment, the use of communications technologies in Moldova involves linking agencies and the central government, rather than linking agencies themselves or agencies and the wider public.

There are increasingly more sophisticated health-related online resources in Moldova. For example, the information system iMED provides information in the following fields (in five difference languages):

- Almost 4,000 types of medicines registered in Moldova;
- Descriptions of about 250 of the most common illnesses and their characteristic symptoms;
- Medical sector news;
- Presentations of new products and treatment;
- Medical legislation;
- Links and references to useful information sources;
- Forum for discussion, etc.

A private gynaecological office Nicolae Tafuni[127] – helps citizens, particularly the young and families, to deal correctly with the multitude of information on sexual health issues and recommends different specialists.

The National Scientific and Practical Centre for Preventive Medicine[128] issues press releases and publishes a monthly newsletter on relevant topics for doctors and the wider public.

The Codex Alimentarius Program in Moldova[129] has a web page administered by the National Codex Committee, the committee that acts as a central coordinator for issues related to the quality and safety of food products.

The NGO AVE-Natura[130] presents information on its website about the influence of the environment on health. The website was developed with financial support from IATP.

The European Union (as part of the external assistance programme to Ukraine, Belarus and Moldova) provided a set of 350 computers and 4 servers to medical institutions in Chisinau and Orhei as part of the Project of Public Health Reform.[131]

[126] Grimut, A, "E-Health in Developing Countries – Moldovan Experience", Ministry of Information Development, April, 2006

[127] http://cspms.mednet.md/sexologie/

[128] http://sanepid.design.md/)

[129] http://www.codex.sanepid.md/)

[130] http://www.iatp.md/mediu-sanatate/

[131] Source: 12.10.2006 - [DECA-press]

6.4 E-Learning

Special ICT training is increasingly being provided in schools, which should help boost computer literacy and e-commerce trust. On 1 September 2005, there were 114,552 students enrolled in institutions of higher education (approximately 300 students per 10,000 inhabitants). There are 95,221 students in state institutions, and 19,330 in private institutions. Special ICT training is provided to 6,212 students in state universities and 1,063 students in private universities.

The first step of the "SALT" Programme, which is a Presidential programme to equip schools with ICT equipment and access to the Internet, was to install 6,000 computers to enable ICT training. However, despite the efforts made by the "SALT" programme, targets have not yet been achieved.[132]

The progress that has been achieved in this area so far includes:[133]
1. The development of the Concept of the Educational Informational System.
2. Each school (almost 1,551) has at least one computer that is connected to Internet.
3. 256 ICT instructers have been trained. These will train other teachers from all schools of Moldova on basic ICT.
4. The Centre for Information and Communication Technologies in Education has been created.
5. A software package has been piloted for 4 disciplines (Mathematics, Chemistry, Physics, etc.) in Calarasi. The e-learning software, together with the services of trainers, was brought from Romania.
6. An information system has been created to monitor the developments in the sector on the basis of a number of statistical indicators. The information in the system is updated automatically through a web interface and connects all schools in Moldova.

The current plans of the Ministry of Education and Youth include:

1. Developing eight pilot model schools where computer classes will be created for computer science teaching and also for laboratory work in other disciplines.
2. Developing the Centre for ICT in Education to maximise use of its facilities (currently it operates at 50% capacity)
3. Rolling out the training of teachers in basic ICT (through the network of 256 teachers)
4. Developing the Educational Informational System

In the context of the SALT programme, every pre-university institution has concluded a contract with Moldtelecom for Internet access provision. Moldtelecom was obliged by the Government to build the connections. In order to ensure the sustainability of the project, it is obviously important that the state budget for 2007 include financing of Internet connections of schools..

From June to October 2005, a range of videoconferences were held by the Minister of Education and Youth with the heads of the rayon (regional) departments of education and

[132] Source: Ministry of Education

[133] Idem

the Moldtelecom representatives responsible for “SALT” programme implementation, possibly indicating the extent to which the government is prioritising this programme.

120 computers have been installed in 20 of the 38 rayon (district) departments for education. In 28 rayon education departments a member of staff with responsibility for IT development has been appointed.

A further 30 schools in Moldova are equipped with computers sponsored by Goodwill Industries[134] through the North Carolina State University, USA.[135] According to Sun Communications,[136] which initiated the programme that will bring 283 computers to Moldavian schools, the schools will be selected by Sun Communications, the Ministry of Education, and the Office for Bilateral Relations of the European Committee of the United States Army and of the National Guard of North Carolina. All the schools will be connected to the Internet free of charge by Sun Communications. In 2003, Sun Communications also developed a social programme, Sun Schools, which aims to ensure access to modern information technology training facilities for young people. The programme includes three projects: Sun Classroom, Sun Scholarship and Sun Internship. In September 2005, the German Federal Ministry of the Economy and Labour sent 500 computers (as well as 144 processors, 218 monitors and 95 printers) to Moldova on behalf of Germany.

The Information Technologies and Education Communications Centre (CTICE) has been inaugurated in Chisinau within the presidential SALT programme. The centre aims to ensure the efficient implementation of the SALT information programme, and to contribute to improving the quality of education in Moldova.

[134] http://www.goodwill.org/

[135] Basa Press

[136] http://www.suncommunications.md/

7 STRUCTURE OF THE COMMUNICATIONS INDUSTRY

The contribution of the ICT sector to GDP was 10.6 percent in 2005.

The total revenue of the electronic communications sector in 2005 was 3.64 billion Lei / 234.36 million Euro. Moldtelecom represents by far the largest part of this figure, with 1,968 million Lei (128 million Euro) in revenue. The total market share by revenues of state owned enterprises in 2005 was 54.95 percent - that represents a fall compared with 65.7 percent in 2004.

Total investment made by ICT companies in 2005 reached 416.4 million Lei / 26.8 million Euro (fixed telephony, 193 million Lei / 4.46 million Euro - 46.3 percent; mobile telephony, 204 million Lei / 13.13 million Euro - 49 percent; and data transport and Internet, 19.4 million Lei / 1.24 million Euro - 4.7 percent). With regard to investment in data transport and Internet, 70 percent of investments were made by state owned companies: Moldtelecom and Molddata.[137] Moldtelecom investment represented 68 percent (13.2 million Lei / 0.85 million Euro) of the total.

According to the provisions of the Telecommunications Law, only registered Moldovan companies can provide telecommunications services in Moldova. Therefore there are no completely foreign companies on the market. However, foreign companies and natural foreign persons can own shares in mobile operators, cable television operators and ISPs. Private companies (mobile, ISP, VoIP, Cable TV) make up around 34.3 percent of the communications market by revenue.

The three leaders in the Moldovan electronic communications services market are Moldtelecom,[138] Voxtel[139] and Moldcell.[140] Although these companies control a significant portion of the market, many smaller companies such as Sun Communications,[141] Telemedia Group,[142] Arax Impex,[143] Globnet,[144] Telcom Technologies,[145] Riscom,[146] StarNet[147] and others are currently increasing their market shares. Moldtelecom had a monopoly on fixed line network and services until the end of 2004, when the market was opened by the Telecommunications law's provisions and in accordance with Moldova's WTO commitments. Although the monopoly of Moldtelecom has ended from a legal point of view, the Moldovan ICT sector continues to be dominated by this 100 percent state owned company.

In 2005, 17.08 percent of international voice traffic was registered as VoIP traffic. Out of this figure, the share of the 14 Moldtelecom competitors in the international VoIP market was

[137] http://www.molddata.md

[138] http://www.moldtelecom.md/

[139] http://www.voxtel.md/

[140] http://www.moldcell.md/eng/

[141] http://www.suncommunications.md/

[142] http://www.telemedia.md/

[143] http://www.arax.md/

[144] http://www.globnet.md/ru.html

[145] http://www.telcom.md/

[146] http://www.riscom.net/

[147] http://www.starnet.md/

8.13 percent of total international voice traffic, which was less than that of Moldtelecom, whose share was 8.95 percent. Moldtelecom's high market share in the international IP-telephony market segment is mostly a result of its vertical integration. Possessing access and transport infrastructure, as well as a well-developed payment-collection system, Moldtelecom has the possibility to offer post-paid services, which are billed together with other telephony services.

International VoIP traffic grew in 2004 by 4.33 million minutes or by 29.3 percent against the 2004 level; while the traffic of traditional international calls increased in the same period by 9.95 million minutes or by 12.01 percent.

As mentioned above, the total revenue of the telecommunication sector in 2005 was 3.64 billion lei (234.36 million Euro). The market share of fixed telephony was 51.56% (with a growth rate of 27.31%).

The total revenue of fixed telephony in 2005 was 1,968 million lei (128 million Euro). The market share of mobile telephony was 37.44%. Revenues from mobile telephony services rose by 52.4 percent up to 1.362 billion lei (87.1 million Euro). The total revenue of leased lines and Internet access services was 130.5 million lei or 3.59% of the communications market share, increasing by 35.23% compared with 2004.

3,370 websites were registered on www.ournet.md, the largest directory of Moldovan websites, on April 2006 compared with 3,002 websites in 2005 (12.25 percent growth compared with April 2005).

Following a Government decision, the state enterprise Radiocomunicații will be reorganised as a Joint Stock Company. This is partially to ensure roll-out of digital radio and TV services in the course of the next five to seven years.[148]

7.1 Fixed Networks

The state-owned company Moldtelecom has a 99.5 percent share of the fixed line market. The new entrants account for the remaining 0.5 percent. .

State owned enterprises revenues in 2005:

JSC Moldtelecom -1,968.5 million lei (770 million Euro), with investments of 677.7 million lei (45.63 millon Euro) (99.3% of all state-owned enterprises' investments),
Radiocomunicatii -28.08 million lei (1.8 million Euro), investments 10.9 million lei (0.7 million Euro),
Molddata -2.498 million lei (0.16 million Euro), investments 0.405 million lei (26,000 Euro.

The total market share by revenues of state owned enterprises in 2005 was 54.95%, down from 65.7% in 2004. The amount of government owned companies' investment was 689.05 million lei (44.36 million Euro) or 56.4%.

[148] Source : #1821* 05.10.2006 - DECA-press

The growth of total investments in the sector in 2005 was 41.33%. The share of private investments in the sector was around 43.6% of 1,221.3 million lei (78 million Euro) compared with 41% of 883 million MDL (58.85 million Euro) in 2004.

Little progress has been made in the course of the last year regarding the privatisation of Moldtelecom and the issue appears to be less of a priority than it previously was.

7.2 Mobile Networks

The first mobile operator in the Moldovan market, Voxtel, is owned mainly by foreign and private investors. France Telecom Mobiles (FTM) the major shareholder holds a 51 percent stake, Moldovan Mobile Telephone-Bis owns 30 percent, IFC (which is the private sector arm of the World Bank Group) owns 5 percent, and MobilRom (Romania) owns 4 percent. The France Telecom Group has bought the 10% stake that JSC Moldtelecom held,, boosting its share to over 60 percent. On April 19, 2006, Voxtel shareholders decided to re-brand the company “Orange”. The Orange trade mark is expected to consolidate the leadership of Voxtel on the market.

The other mobile operator, Moldcell, is owned by Fintur Holding B.V. (Holland) as the majority shareholder, with 99 percent, and Moldfintur LLC (Moldova) with 1 percent.

The growth of total investment in the sector in 2005 was 41.33%.The share of private investments in the sector was around 43.6% of 1,221.3 million lei (78.63 million Euro) compared with 41% of 883 million MDL (53.6 million Euro) in 2004.

The share of the telecoms market held by mobile operators (by revenue) in 2005 was 37.44 percent.

7.3 Cable Networks

The main cable operator in the Chisinau area is Sun Communications, a Moldovan-American private company (Moldovan share 35 percent; USA 65 percent). Another cable operator is Alternativ-TV, which is a private company (20 percent held by Moldovan investors and 80 percent by foreign players).

The market share of cable TV services was 2.5 percent in 2005.

7.4 Internet Access Providers

The State plays a relatively small role in the ISP market and only has a stake in one (out of about 25 significant players in the market) ISP, Moldpac S.A.[149] (24 percent is owned by Moldtelecom). Private citizens own about 90 percent of the shares in ISPs.

7.5 Satellite Operators

The market share of satellite services is very small: only two or three companies offer such services.

7.6 Production of IT Services

In the late 80s, hardware and software producers employed over 50,000 specialists. According to Ministry of Economy and Commerce, the number of employees in the IT industry was 12,500 persons in 2004, which was 2.4% of all employees. Activities in this sector were concentrated on hardware production (analogue devices, integrated circuits, PC assembly, etc.) and software development to order. During 1991 – 2000 many specialists had to emigrate or to leave the sector. Today the situation is improving slightly. Many state and private universities train ICT specialists. Over 1,200 highly qualified specialists were trained in 2003 (750 in 2002) representing a relatively high annual growth rate. The number of companies offering various IT services is steadily growing, while number of companies specialising in software and supporting services is in stagnation.

There is no full statistics available for the IT services such as software development and export. Some evaluation of the market size can be found in the MEPO study.[150] That study estimated the market to be worth 17.3 million USD (14.3 million Euro) for the year 2002. The turnover of the software related products and services was 13.4 million US$ (11 million Euro), which was 77% of the total IT sector. The biggest part of this figure belongs to the database development. Pure software production has sales of only 3.5% from the total ICT sales.

The market size and its trends cannot be analysed properly due insufficient official statistics. There are currently 32 companies registered, of which 21 are relatively active. The total volume of their production was 619,000 US$ (511,600 Euro) in 2002, while export of this service amounted to 728,000 US$ (601.7 Euro).

[149] http://www.moldpac.md/en-index.shtml

[150] Market Study of the Informational Software Technology Sector in Moldova Prepared by Moldovan Export Promotion Organisation (MEPO) for BIZPRO-Moldova, January 2004

7.7 Financial Development of the ICT Sector

"Assessing Competitiveness In Moldova's Economy",[151] a study conducted for USAID, BIZPRO[152] and Development Alternatives,[153] Inc., estimates that 70-90 percent of ICT activities are conducted in the black economy. As the largest impediment to growth in the ICT sector, the black economy has two significant consequences for the ICT industry. First, the black market creates a disincentive for companies in Moldova to produce software for local consumption: the low cost of pirated software drives the price of products so far down that Moldovan companies are not able to recover their development costs or make a profit. Secondly, and perhaps more importantly, the black economy is a major deterrent to foreign direct investment.

[151] "Assessing Competitiveness in Moldova's Economy", USAID, BIZPRO, Development Alternatives Inc, July 2004

[152] http://www.bizpro.md/

[153] http://www.dai.com/