

# ROMANIA'S DIGITAL DIVIDE AND THE FAILURES OF E-GOVERNMENT

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*This paper tries to measure the level of the digital divide existing in Romania and also to verify its relationship with e-government.*

*At the country level, Romania is one of the least digitally developed countries in Europe, but it has shown a sharp increase in recent years.*

*At the social level, based on data from public opinion surveys, digital divide is analyzed at two levels: lack of access and lack of knowledge. The results are similar to those in other countries: digital divide appears along the same dimensions: rural/urban, age, education, wealth and, to a lesser extent, gender.*

*E-government services, while presumed to be at an adequate level, are used only by a very small number of citizens, thus having no impact upon the digital divide.*

*Confronted with a serious divide, and with great possibility of its increasing, Romania needs to promote policies designed to increase access and knowledge. Also, e-government is not possible, unless administrative culture and procedures change.*

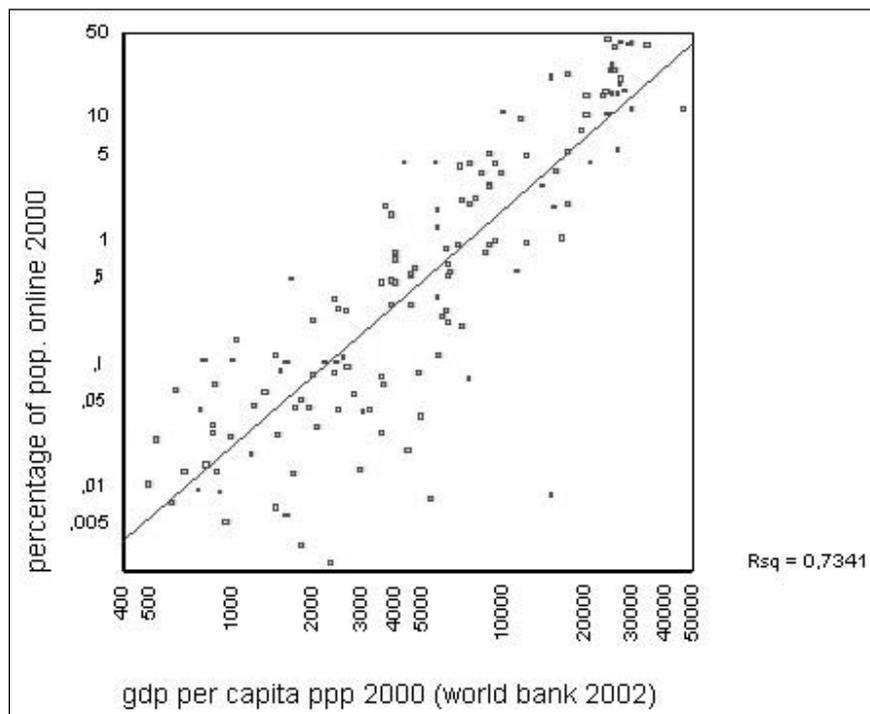
## Global divide

Digital divide can be defined as the gap between those persons who are computer literate and have access to information resources like the Internet and those who do not. This digital divide is continually narrowing in terms of access to technology and communication, and also in terms of computer literacy.

There are two types of digital divide: a global divide between countries and a social divide, inside each nation, based on certain socio-demographic characteristics (telecommunication access, affordability of services, income, skills or education).

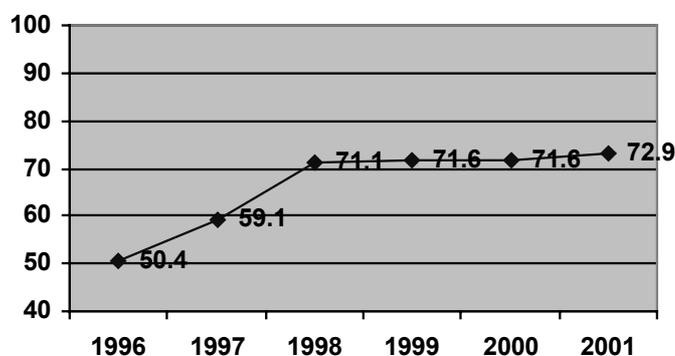
For the global divide we can see that there is a significant relationship between the wealth of a nation, expressed as GDP/capita, and one of the indicators for information society development, the percentage of population online<sup>1</sup>.

<sup>1</sup> Logarithmical scales were used for a better account of the relationship



**Figure 1.** Population online and GDP/capita

Romania, as a country with medium GDP/capita scored accordingly on the percentage of population online. While Romania is behind the rest of the world, in recent years, it witnessed a greater growth in information society indicators, demonstrating more rapid progress than the world as a whole<sup>2</sup>:



**Figure 2.** Romania compared to the globe as a whole

The United Nations E-Government Readiness Index, comprising the Web measure index, the Telecommunication Infrastructure index and the Human Capital index; “is a composite measurement of the capacity and willingness of countries to use e-government for ICT-led development”<sup>3</sup>.

The 2004 E-government readiness rankings<sup>4</sup> show Romania progressing, with a 0.5504 coefficient (maximum is 1.00), in 38<sup>th</sup> place in the world, 12 places higher than in 2003.

<sup>2</sup> George Sciadras (ed.), *Monitoring the Digital Divide...and Beyond*, Orbicom, 2003, p. 44

<sup>3</sup> United Nations, *Global E-Government Readiness Report 2004. Towards Access For Opportunity*, 2004

<sup>4</sup> United Nations, *op cit*, p. 29

Both of these two types of assessments provide information about the problems Romania encounters. The first shows as a weak point the number of PCs and the number of Internet hosts<sup>5</sup>, the other is pointing to general telecommunication index (Internet, PCs, telephone, TV sets) of only 0.165 (scale from 0 to 1), compared to 0.606 for Web measure and 0.880 for Human capital<sup>6</sup>.

In recent years a sharp increase took place for telecommunication indicators. The number of PCs grew significantly, as did the number of Internet users:<sup>7</sup>

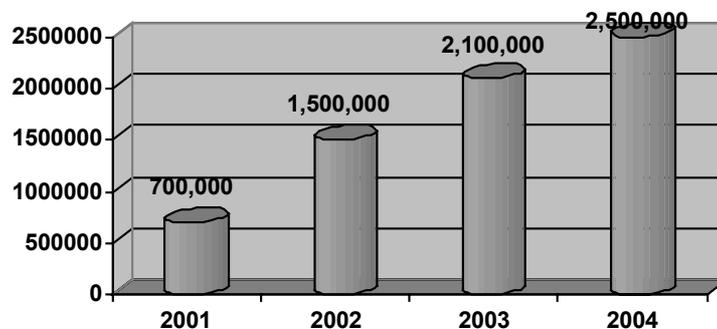


Figure 3. PC evolution

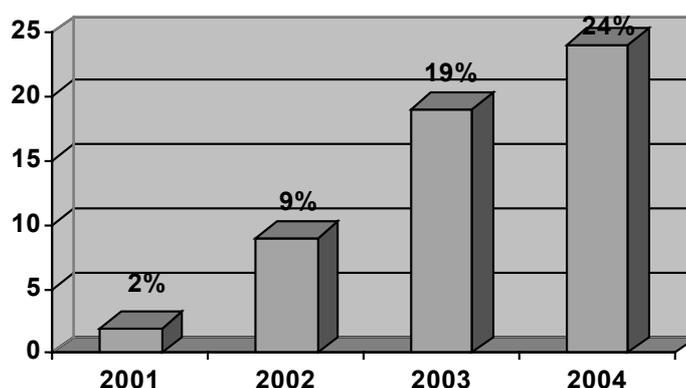


Figure 4. Internet users (%)

An equally spectacular growth was witnessed in the area of mobile phones. From 3.860.000 users in 2001, the figure rises to 6.200.000 in 2003<sup>8</sup> and to 9.000.000 in September 2004<sup>9</sup>.

Still, Romania lags behind most of former EU candidate countries, being the last in Internet usage and well below the Central and Eastern Europe average in other indices, except for number of computers in secondary education connected to the Internet<sup>10</sup>.

<sup>5</sup> George Sciadas, *op cit*, p. 75

<sup>6</sup> United Nations, *op cit*, p. 126

<sup>7</sup> Romanian Ministry of Communications and Information Technology, [www.mc](http://www.mc)

<sup>8</sup> Romanian Ministry of Communications and Information Technology, *Raport de evaluare a stadiului de dezvoltare a Societății Informaționale în România*, 2003, p. 55

<sup>9</sup> Romanian Ministry of Communications and Information Technology, *Indicatori IT*, December 2004, [http://www.mcti.ro/index.php?KTURL=media/\\_uploads/indicatori\\_site/2004.12.06\\_Indicatori\\_Comunicatii\\_romana\\_ana.pdf](http://www.mcti.ro/index.php?KTURL=media/_uploads/indicatori_site/2004.12.06_Indicatori_Comunicatii_romana_ana.pdf)

<sup>10</sup> Danish Management, *Central and East European Countries Information Society Benchmarks*, September 2004, p. 46

## Social divide and telecommunication access

Usually, in research about the digital divide, we try to explore different dimensions. Most often used are such factors as area (rural/urban), sex (or gender), age, wealth, education, race (or ethnicity), and religion. Based on data from the Open Society Foundation's Public Opinion Barometer, October 2004<sup>11</sup> we can see that in Romania there is a significant divide in almost all categories.

**Table 1.** Telecommunication access divide

	Mobile (%)	Fixed phone (%)	PC (%)	Internet (%)
Area				
Rural	23.8	35.8	6.5	1.1
Urban	51.3	73.5	29.9	11.9
Education				
Less than high-school	22.9	43.3	6.4	0.9
High-school	57.2	67.6	30.3	11.4
Undergraduate	76.6	88.4	58.6	28.6
Postgraduate	91.3	91.3	82.6	43.5
Gender				
Male	41.4	55.6	20.7	8.6
Female	37.1	57.5	18.4	5.8
Age				
18-24	64.7	56.1	36.4	17.6
25-34	52.3	55.9	19.3	7.2
35-44	53.3	57.3	30.3	10.6
45-54	44.9	63.0	23.7	7.1
54-64	25.4	55.6	10.8	4.1
65+	11.5	52.3	6.4	1.5
Wealth <sup>12</sup>				
Poor (1-3)	23.0	41.2	8.6	2.5
Middle (4-5)	46.1	64.7	23.7	9.2
Upper (>5)	60.7	73.8	35.7	12.9
<b>Total</b>	<b>38.8</b>	<b>56.6</b>	<b>19.4</b>	<b>7.1</b>

We cannot assess anything about the existence of an ethnic divide. However, it does appear that the Roma population, which is known to have a very low standard of living, is not connected to the digital world, but we have only a small number of individuals in the sample, so we cannot draw a definitive conclusion. The difference between Romanians and Hungarians, the greatest minority, is very small.

From the gender point of view, males appear to be better placed, but the relationship between gender and all the four indicators presented is not significant from a statistical point of view.

From the regional point of view, the results do respect the social and economical disparities. The most developed regions have a better telephony penetration and more PC and Internet users.

For all the indicators, the most serious divide is between rural and urban areas, age categories, except for fixed telephony, and wealth. If we take into account only having a PC and Internet access we can see that education is becoming very important.

<sup>11</sup> Data available at [http://www.osf.ro/bop/2004/Octombrie/db\\_bop\\_oct\\_2004.zip](http://www.osf.ro/bop/2004/Octombrie/db_bop_oct_2004.zip)

<sup>12</sup> Respondent were asked to assess their own position on a scale from 1 – poor to 10 – wealthy. In this table Poor represents 40.7% of the entire sample, Middle 45.8 and Upper 13.5%

The most serious problem is in the rural area: there we have a less educated, less affluent and “more” aged population. Romania has a very high proportion of its population living in the rural area<sup>13</sup>.

There are other ways to access the Internet: workplace (33% of Romanians do so), Internet café (26%) or schools (13%)<sup>14</sup>. But all these possibilities are open especially for those who are less threatened by the digital divide: young people, well educated, or getting educated, urban areas, solving a part of the problem for those who can not afford a connection at home.

Telecommunication issues also can be a problem for public administration. In the recent years, the number of public institutions with computer equipment grew considerably. By early 2003, the number had reached 130.000 computers, 70% being connected to the Internet<sup>15</sup>, enabling 82% of public servants to have access to a computer; also 84% of public institutions, with the exception of except village councils, have Internet sites<sup>16</sup>.

### Social divide and knowledge

Another important aspect of digital divide is the knowledge divide: some people do not know how to use digital services, especially computer-related ones.

Based on data from the Public Opinion Barometer, October 2004, we can draw some conclusions. First, age is an important factor (see figure 5).

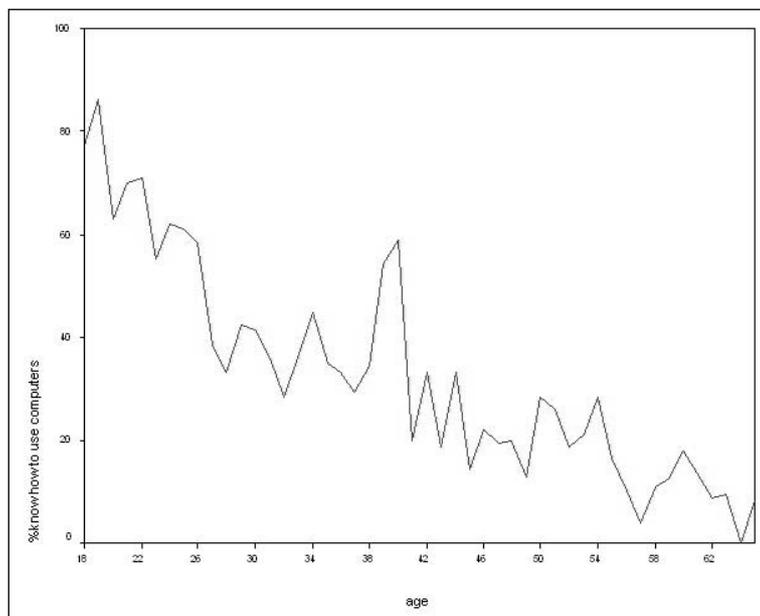


Figure 5. Age and computer knowledge

While we have some oscillations, due to the small number of individuals, the pattern is clear: older people have lesser chances to know how to use a computer.

Again, as in the case of telecommunication divide, we tried to see how this divide works for different categories of population. The results are similar: those from the rural area, aged, less educated, poor have smaller chances to know how to use computers. There is also a gender difference, relatively small, but statistically significant.

<sup>13</sup> 46.7%, according to the Population and Housing Census, March 2002

<sup>14</sup> European Commission, *eEurope+ 2003 Progress Report*, February 2003, p. 26

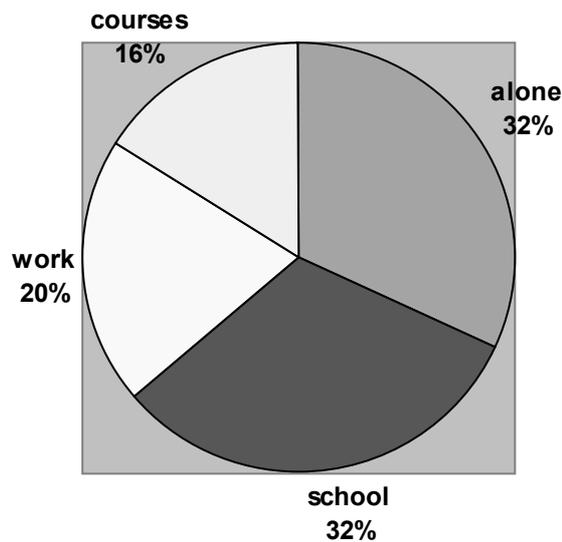
<sup>15</sup> Romanian Ministry of Communications and Information Technology, *Indicatori IT*, June 2004

<sup>16</sup> Institutul pentru Politici Publice, *Barometrul Funcției Publice în România*, 2004, p. 41-42

**Table 2.** Knowledge divide

	Know how to use computers (%)
<b>Area</b>	
Rural	11.2
Urban	38.6
<b>Education</b>	
Less than high-school	7.6
High-school	45.9
Undergraduate	72.7
Postgraduate	82.6
<b>Gender</b>	
Male	29.5
Female	23.8
<b>Age</b>	
18-24	70.1
25-34	42.6
35-44	33.9
45-54	21.4
54-64	10.5
65+	3.7
<b>Wealth</b>	
Poor (1-3)	12.8
Middle (4-5)	32.7
Upper (>5)	43.7
<b>Total</b>	<b>26.3</b>

How did some of these people learn how to use computers? The main sources<sup>17</sup> are by themselves or at school, accounting together for almost two thirds of the population. At work or by taking some computer courses account for the last third. This can show a lack of concern from employers: they prefer to hire people that have a specific level of knowledge, instead of trying to train them. Job announcements are a clear indication: for almost all workplaces that require computer usage, such knowledge is a prior condition for employment consideration.

**Figure 6.** Knowledge source

<sup>17</sup> Institutul pentru Politici Publice, *Barometrul Funcției Publice în România*, data available at <http://www.ipp.ro/altmateriale/BFP%20-%20IPP%20Gallup.rar>

Knowledge divide can be important also for public servants. While few are totally lacking computer literacy, we can see that the level of knowledge has a strong association with age (Gamma=-0.458)<sup>18</sup>: the older they are, the lesser their computer knowledge is.

### **E-government usage**

On February 12<sup>th</sup> 2001, the European Union Member States agreed to a common list of 20 basic public electronic services; 12 for citizens and 8 for business. Romania made a significant effort in order to provide as many e-government services as possible. The law, 161/2003, a part of an anti-corruption package, instituted the National Electronic Service, dedicated to electronic services delivery, requiring all administration to start offering such services according to a time schedule. According to an evaluation made by the Ministry of Communication and Information Technology<sup>19</sup>, Romania scored on these services the same as Greece, ranked 19<sup>th</sup> among EU countries, and scoring better than 6 out of 8 former CEE candidate countries<sup>20</sup>. The evaluation seems to be highly optimistic, taking into account that there are few services for which we have more than a one-way interaction, and other services are not yet implemented. The time schedule stated in Law 161/2003 is not respected, serious delays being encountered for the majority of e-services and institutions.

We tried to assess the use of e-government services, using the number of visitors accessing government sites. On the site <http://www.traffic.ro> are registered and monitored a large number of sites, 17.677, as of April 8<sup>th</sup>, 2005. Among these some are government sites. The most popular is the site of the Romanian government, [www.guv.ro](http://www.guv.ro), but in the general ranking it holds only the 84<sup>th</sup> place, having 27.267 visitors in a week (0.0018% out of all visitors of all sites). The most visited site of all, a software-related one, had 1.1200.178 visitors in the same period .

Among ministries sites the first is the Foreign Affairs Ministry ([www.mae.ro](http://www.mae.ro)); second place in government sites, with 13.410 visitors, followed by the Internal Affairs ([www.mai.gov.ro](http://www.mai.gov.ro)), with 5.278 visitors, and, in third, the Ministry for Communications and Information Technology ( [www.mcti.ro](http://www.mcti.ro)), with 4.978 visitors.

Two very important electronic services are also in the top: the electronic public acquisitions portal ([www.e-licitatie.ro](http://www.e-licitatie.ro)), with 6.494 visitors and [www.e-guvernare.ro](http://www.e-guvernare.ro), the one stop shop for government electronic services<sup>21</sup>, with only 2.386 visitors.

Symptomatic for the low use of government sites is also the case of the Agency for Employment ([www.anofm.ro](http://www.anofm.ro)). On [www.traffic.ro](http://www.traffic.ro) the site is ranked only 13<sup>th</sup> in the category workplaces (653 in the general ranking), with 0.69% of the number of visitors. Even if a listing with all available jobs in all counties is provided, private sites are preferred by the population.

The fact that Romanians do not use e-government services is supported by the findings of eEurope+ survey: only 2% of the Internet users downloaded official forms and 3% sent filled in forms<sup>22</sup>.

<sup>18</sup> Institutul pentru Politici Publice, *Barometrul Funcției Publice în România*, data available at <http://www.ipp.ro/altmateriale/BFP%20-%20IPP%20Gallup.rar>

<sup>19</sup> Romanian Ministry of Communications and Information Technology, *Raport de evaluare a stadiului de dezvoltare a Societății Informaționale în România*, 2003, p. 69-70

<sup>20</sup> Capgemini for the European Commission Directorate General for Information Society and Media, *Online Availability of Public Services: How is Europe Progressing?*, March 2005, p. 26

<sup>21</sup> Presently, on [www.e-guvernare.ro](http://www.e-guvernare.ro) are available over 160 forms, involving 465 public institutions and 7 on line services for companies

<sup>22</sup> European Commission, *eEurope+ 2003 Progress Report*, February 2003, p. 34

## Conclusions

Digital divide is a very serious issue in Romania. While the number of digital citizens is increasing, mainly due to economic growth and technology advances, and only in small measure to government policies, significant parts of the population are left behind. The rural population, less educated people, poor people and aged citizens have very little chance to benefit from ICT revolution, either by lack of opportunity, or by lack of knowledge. The Romanian government should consider taking serious measures in order to narrow this gap which will get larger if unaddressed.

Serious efforts should be made regarding the rural areas. In 2003, Telecommunication liberalization brought in place new companies, which are operating mainly in urban areas. No phone company is willing to penetrate in villages, except those near big cities. A public policy, supported by financial incentives, to encourage phone companies to expand in remote areas should be put in place.

Public Internet Access Places can help the population to get online; such services should also to be provided by public libraries. In addition, computers and Internet should be more present in schools, especially in rural areas, not only in urban ones as has been the case until now<sup>23</sup>.

In regard to the knowledge divide, age and lesser education are the main hurdles. These problems should be addressed at a more general level, considering that Life Long Learning is a very new concept for Romania. Also, employers will have to consider training as a way to improve performance, not as a useless expenditure.

We did expect that the presence of e-government services would boost Internet and PCs usage, narrowing the digital divide. In reality, e-government is only following this trend, either in order to fulfill European requests, or just answering to population or business demands.

There are several reasons for that:

1. Heads of family, who are presumed to have more interactions with public administration, have less knowledge than other members of the family: only 19.9% know how to use computers, compared to 32.8%<sup>24</sup>.
2. For young people computers and Internet are primarily a tool for communication: e-mail, chat, and entertainment (music, movies, games).
3. The content of government sites needs a serious improvement. United Nations E-government Readiness Report had assessed Romania's web presence with a score of 0.606, on a scale from 0 to 1 –<sup>25</sup>, which is rank of 26<sup>th</sup> in the world – a good one, apparently. But, as acknowledged by the authors of the report, this indicator does not measure quality, but mainly online presence of central government. A more recent research ranked Romania's websites 84<sup>th</sup> in the world<sup>26</sup> using as the criteria number of services online and quality of the interaction with the user. Romanian public administration sites are suffering in terms of number of online services offered, email contact information, areas to post comments, availability of publications and databases.
4. The number of electronic services, especially for personal documents, car registration, declaration to the police, health related services, and their level of sophistication should be increased. Electronic payment of charges for services should be allowed.

<sup>23</sup> The National Authority for Regulation in Communications launched in September 2005 a bid for 40 telecenters (point of access for phone, fax and Internet services), the objective for 2005 being to reach at least 100. 634 villages did express their interest in having such centers. Source: [http://www.administratie.ro/articolenou.php?articol\\_id=3613](http://www.administratie.ro/articolenou.php?articol_id=3613)

<sup>24</sup> Open Society Foundation, *Public Opinion Barometer*, October 2004

<sup>25</sup> United Nations, *Global E-Government Readiness Report 2004. Towards Access For Opportunity*, 2004, p.134

<sup>26</sup> Darrell M. West, *Global E-Government, 2005*, Brown University Center for Public Policy, 2005, p. 11

5. The administrative culture is still a bureaucratic one, for each interaction with citizens or businesses a lot of paper work is still required and demanded<sup>27</sup>. Without a drastic simplification of procedures electronic delivery of public services will remain science fiction.
6. Interaction with public administration is still seen as a personal one. We are far from a Weberian-type bureaucracy, based on strict procedures and impersonal relationships. Therefore, in order to get something done, the Romanian people continue prefer to have direct, personal, face to face contact and discussions with public servants in order to be sure that they have provided and received the correct documentation and their requests, needs and obligations are appropriately met, resolved and solved.

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<sup>27</sup> As an example: in order to obtain an identity card you will have to present a birth certificate, a document to prove your address (either a proof of identity or a rent contract), a fiscal stamp, a receipt for payment (electronic payment is not possible) and, depending on the reason for requesting a new identity card you might be asked to provide documents about your military status, election card, marriage certificate, divorce ruling, the old identity card or another photo ID. Also, is not possible to send photos in electronic format.