

DIGITAL ECONOMY IN ROMANIA - SOCIOLOGICAL AND ECONOMIC DYNAMICS

Ghenadie CIOBANU,

PhD., National Scientific Research Institute for Labour and Social Protection,
Bucharest, gciobanu01@gmail.com

Catalin GHINARARU,

PhD., The National Strategy for the Digital Agenda for Romania

ABSTRACT

The current economic conditions have made a high number of enterprise moves towards internet-based systems to increase efficiency, reduce operating costs and support the capacity of operating in real-time between various platforms. That is why many companies redesign the main business processes – mobility, cloud computing, information systems for economic and decisional support and social networks. As a result, new products and services fully based on the internet have appeared and continued to evolve and they can compete with the existing ones. Other business models that have emerged related to online platforms, which act as an intermediary between sellers and buyers. In this article, we make a review of the Digital Agenda in Romania and trends on the development of the digital economy, reflecting the trends of Population's access to and use of computers, Internet access, and a brief sociological analysis.

Keywords: Digital economy, digital agenda, sociological analysis, digitization dynamics.

1. The digital agenda for Romania

Within the 2020 European Strategy context, the definition of the National Strategy for the Digital Agenda for Romania, adapted to Romania's current social and economic situation plays a priority part in the development of digitization in various fields and areas of activity. The principle underlying the National Strategy is the creation of a competitive environment, which should encourage and attract tax-paying citizens and companies, which in their turn would ensure a long-term sustainable

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development. According to the Eurostat study on ICT use by individuals and households¹: 45% of the Romanian users use the internet at least once a week, 52% of the Romanian users trust online shopping and online banking, 33% of the Romanian users are concerned about the security of online personal data, 37 % of the Romanian users are concerned about the issues related to on-line payment security.

Continuous professional training – Life-long learning based on ICT

The 2020 European Strategy for sustainable growth in the European Union aims to ensure jobs for three quarters of the citizens aged between 20 and 64 by 2020. Only 54% of the Romanians have access to the internet, as compared to the Czech Republic, where the access rate is of 96% or Estonia, where it is 85%. The mobile traffic increases fast in Romania. In January 2013 only 3 % of the entire internet traffic was generated by mobile devices, while in March 2014 it reached 7%. In Romania over 4.5 million users access the e-commerce sites monthly. Online commerce is growing constantly both because of the horizontal expansion of the big players, such as emag.ro, and because the emergence and strengthening of the new, niche shops. On the other hand, the announcement sites are becoming increasingly popular among the internauts, two of them being tocmai.ro and olx.ro (the ex mercador.ro) being in the top 10 ones.

2. Population's access to and use of computers

In Romania a representative project in the e-Inclusion area was „*Access to ICT and improvement of digital competencies*”. This project aims to facilitate access to ICT services by providing ICT equipment and internet connection and also by promoting and facilitating people's access to them. Overall, 255 rural communities from all over the country, representing 1.8 million citizens could belong to this new knowledge-based economy, by the successful implementation of the local electronic networks.

Table 1. The rate of computer use according to residence

Number of individuals, aged 16-74 who use the computer, according to residence						
Residence	Year					Period 2007-2011
	2007	2008	2009	2010	2011	
Total	6,847,343	6,719,591	7,464,651	8,325,674	8,401,940	23%

¹The National Strategy for the Digital Agenda for Romania

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Urban	5,264,183	5,065,288	5,428,420	6,054,078	6,007,059	14%
Rural	1,583,160	1,654,303	2,036,231	2,271,596	2,394,881	51%

Source: INSSE, 2012 Study „Access to Information and Communication Technology (ICT) and improving digital aptitudes”.

According to the data provided by the European Commission, in the year 2014 in the Board Table on Romania, only 8% of the population aged between 16-74 used the internet in 2013 in order to purchase goods and services in Romania. In Bucharest, 14% of the population aged between 16 and 74 used the internet for online commerce in 2011, with a significant increase, as compared to the amount of 7% recorded in 2009 and 8% recorded in 2010.

The e-commerce recorded by the business environment in 2013 indicates that only 9% of the SMEs in Romania sold goods and services online, with the bigger companies reaching a percentage of 13% for the same year.

1. The increase of information level of online service suppliers and e-commerce users. An important barrier for the e-commerce development is represented by the lack of information at the level of online and internet service operators.

2. The capacity of knowing and innovating the regions depends on many factors –entrepreneurial culture, labor force competencies, educational and training institutions, services for sustaining innovation, technological transfer mechanisms, infrastructure of innovation in ICT, researchers’ mobility, business incubators, new financing sources and the local creative potential.

The National Institute of Statistics (NIS) has issued every year data called „The population’s access to information and communication technology²”. For the years 2010-2014 the study presents information on the population’s access to various communication technologies (personal computers, mobile phone and internet access; the frequency and the purposes of using information technology, the place, the use of home computers and internet are presented).

According to the methodological specifications for the study conducted by the National Institute of Statistics, the source of data is the Statistical research on the population’s access to information and communication technologies (ICT) which is conducted yearly, in agreement with the Regulation of the European Council and Parliament no. 808/2004 related to the community statistics on informatics society. The survey covers urban and rural households from all the districts in Romania and from the city of Bucharest, existing in the residencies included in the sample, namely household members aged 16-74. The categories used in the study were: low, medium

² Study on Populations’s access to information and communication technology,

and high educational level. They are obtained by grouping the educational levels as follows:

- low: without school graduates, primary, lower secondary level;
- average: vocational, complementary or trade schools, 1st stage of upper secondary education, high school, post-secondary schools, or technical schools;
- upper: university (short and long term), post graduate – master, Ph.D., post Ph.D.

The number of people who never used a computer from 2007 to 2014 steadily declined overall, for all the groups the situation evolving as follows: in 2009 there were 55.1% of people who never used the computer, up to 39.7% in 2014 and today we already have a reversed figure of 60.3% of computer users.

Table 2. Structure of households after acquiring a home computer, according to residency areas, in the period 2011- 2014

	2011		2012		2013		2014	
	urban	rural	urban	rural	urban	rural	urban	rural
Don't have a PC at home	38.3	73.4	31.7	68.3	30.2	62.5	29.1	69.9
Have a PC at home	61.7	26.6	66.4	31.7	69.8	37.5	70.9	29.1

Source: INSSE, Study „Access to Information and Communication Technology (OCT) and improving digital aptitudes” in the years 2010 - 2014

The information presented in the table above indicates the growing tendency of equipping households with computers, both in urban and rural areas. In the urban area in 2011 61.7% of the population had a computer, while in the rural one only 26.6% had one. During these four years, the share increased from 61.7% in 2011 to 70.9% in 2014 while in the rural area the insignificant share of 29.1 was constant, although the years 2012 and 2013 had a growth of 31.7 and 37.5 respectively.

Of all the households in Romania, **almost half (46.8%) had a computer at home in 2011** (46.8%), a value higher than the one in 2010 (44.2%). In Romania more than half (54, 4%) **have Internet access from home**, most of them (70.9) being in the urban area. From a regional point of view, in the year 2014, internet connection was higher in the households in the Bucharest-Ilfov area (*over 3 households out of 4 had internet access from home*), which was followed, at a long distance, by the households in the West, North-West, (*around 3 out of 5 households*), South-East and Centre (*2 households out of 4*). The increase of the share of households equipped with

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computer in 2011, as compared to the previous year was felt both in the urban area (from 59.2% to 61.7%), as well as in the rural one (from 23.7% to 26.6%).

From a geographical point of view, a significant part of the households used PCs (around 8%) for internet access. The highest share is in the Western region (95.9%) and the lowest in the South-Eastern region (77.8%). The portable computer (laptop, netbook, and tablet) is used in a high share in the Bucharest -Ilfov area (46.9%) and Centre (41.6%). At the other end are the households from the North-Eastern and Western regions that use this type of device in a much lower rate (27.7%, 28.6% respectively).

Table 3. The percentage of households that accessed the internet from home, according to the types of device used, on regions of development, in the year 2014

	2010	2011	2012	2013	2014
București – Ilfov	61.9	65.2	68.8	72.5	84,8
Center	37.4	41.1	43.4	49.5	79,4
North-West	39.4	42.9	52.7	56.9	84,1
West	44.4	49.5	56.6	58.3	95,9
South-West Oltenia	32, 0	38.4	44.3	48.0	85,2
South -Muntenia	32.9	40.3	44.8	47.2	82,9
South-East	36, 0	39.6	48.9	51.2	77,8
North-East	33.1	35.6	40.9	45.7	88,0
Total	38.9	43.3	49.3	52.9	84,7

Source: INSSE, Study „Access to Information and Communication technology (ICT) and improvement of digital aptitudes” in the years 2010- 2014

The use of devices according to occupational categories of the head of household indicates that the highest share of PC use for using the internet from home is in the households led by owners (87.3%), free lancers (86.9%) and employees (85.4%).

The portable computers (laptop, netbook, tablets) are used by households led by owners (67.5%), students (56.5%) and employees (40.6%). Obviously, the use of mobile phones or smartphone in the households led by students has the highest percentages (41.9%), while in the retired people’s households this type of devices is used in the lowest percentage (15.4%).

Over the last years, the growth of information and communication technologies has led to the appearance of new devices to access the internet as well as to the

improvement of the existing ones. Nevertheless, to access the internet from home, the PC is mainly used.

Table 4. Structure of households, according to having a computer at home, on residency areas

	2011		2012		2013		2014	
	urban	rural	urban	rural	urban	rural	urban	rural
Don't have PC at home	38.3	73.4	31.7	68.3	30.2	62.5	29.1	69.9
Have PC at home	61.7	26.6	66.4	31.7	69.8	37.5	70.9	29.1

Source: INSSE, Study „Access to Information and Communication technology (ICT) and improvement of digital aptitudes” in the years 2010- 2014

The number of individuals who used or had ever used a computer during the period 2007 – 2014 permanently increased from 41.3% in 2007 to 63.2% in 2014, thus reducing the number of people who never used the computer from 58.7 in 2007 to 36.8% in 2014.

4. Aspects of the sociological analysis of the digitization dynamics in Romania

The team conducting the project “ The evaluation of the potential of developing digital and virtual workplaces on the labor market in Romania and creating an intelligent economy” considered that a suitable method to research the digitization level of the labor market in Romania is a survey based on a questionnaire, which should provide the necessary information in terms of information and communication technology in companies.

We considered that for argumentation, not only statistical data and statistical information taken from official or other source types, but also a survey conducted as recently as possible would be useful for our study.

In their current activity 7 out of 10 companies that use the computer and have internet connection also have a web/internet page, and most of them, between 66%-80% provide on their web page „*contact data of the company*”, „*media content*”, „*direct access to the page from social networks*” and a page where they present their products and/or services. The data indicate on one hand that there is more to be done in order to talk about high performance digitization in Romanian companies, as long as only 2 out of 10 companies that have a „*web page have an optimized version for*

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the mobile phone” and less than 4 out of 10 „*secure connection*”. Moreover, these data indicate something about the personnel recruitment policy of the companies in Romania. Only between -4 out of 10 companies provide the possibility of viewing the vacant positions and on-line application for a position. In other words, most companies still prefer this service to be outsourced or to use classical methods.

Table 5. The web page of the company

Characteristics/information available on the company's web page		
Contact	80	Have a web page 71%
Video content (videos, photos, testimonials, etc.	72	
Direct access to social networks (Facebook, Twitter, Google+,etc.	66	
Show of company's goods and/or services	65	
Forms to collect data from internet page victors	39	
Forms to collect facebook data from internet page visitors	38	
Adds about vacancies in the company	38	
Privacy policy statement	37	
Secure connection (https://)	37	
Bilingual version	32	
Visitor's possibility to make a user account	28	
Possibility to apply for the vacancies in the company	27	
Customized content for loyal visitors or the internet page	26	
Optimized version for mobile phones	22	
Base: N= 82 (have a web page)		

Data source: Novel Research Study, basis: N=115 (companies whose current activity involves the use of a computer)

A more detailed analysis of the data indicates that most companies having a web page prefer to keep it simple (between 1 and 5 characteristics/web page) and only 1 out of 3 have a complex web page with more than 10 characteristics (*see Table 6*).

Table 6. Complexity of company's web page
Number of characteristics on the web page

Between 1-5 Characteristics	Between 6-10 characteristics	Over 10 Characteristics (An average of 6 characteristics on the web page
49	38	13

Base: N=82 web page

Data source: Novel Research Study, base: N=115 (companies whose current activity involves the use of a computer)

8 out of 10 companies that have an average digitization level (computers and internet) use social networks and only one third use the sites for distributing multimedia materials and blogs.

Table 7. Use of social media

Social networks (Facebook, Linkedin,etc.)	80
Multimedia material distribution sites (Youtube, Picassa, SlideShare, etc.)	38
Blogs or microblogs (Twitter, etc.)	34

Sursa datelor: Studiu Novel Research, bază: N=115 (companii a căror activitate curentă implică utilizarea unui computer și au acces la internet)

Most companies (between 61% and 75%) that use social media do that in order to improve their image and to facilitate cooperation with their business partners and far less (28%) for crowd marketing/crowdsourcing.

Table 8. Purpose of using social media

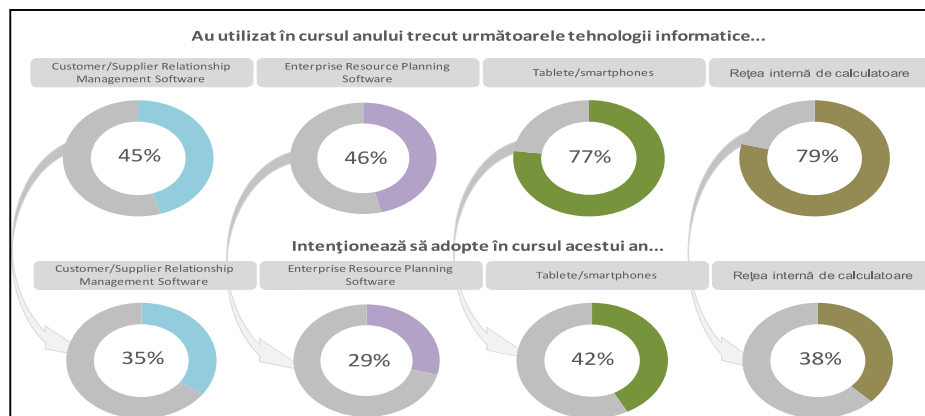
improve company's image or marketing products	75
Cooperation with business partners (suppliniars, etc.)	61
Asking or answering clients opinions, comments or questions	49
Exchange of opinion/information inside	42
Personnel recruitment	36
Engaging clients in developing or innovating services or products	28

Data source: Novel Research Study, base: N=100 (use computers in their current activity, have internet access and use at least one form of social media)

The data related to using information technologies indicate once again that the digitization level of most Romanian companies is an average level one, with accessible information technologies, particularly basic ones: tablets, internal computer network. Less than half of the companies have performing software to manage the relation with the customers/suppliers/employees (Customer/Supplier Relationship Management Software) or to manage access to information between different departments such as accounts, planning, production, marketing (Enterprise Resource Planning Software). What is important is that there is potential for digitization at a more complex level. Approximately one third of those that do not have such software intend to purchase these information technologies during this year (the data can be seen in Figure 1).

They used the following information technologies last year (2014)

Figure 1. Use of information technologies



Data source: Novel Research Study, base: N=115 (companies whose current activity involves the use of a computer)

Conclusion

- In order to fully develop the digital economy and the digital society, Romania has to develop the citizen's digital skills.
- Online commerce has increasingly developed in the companies in terms of purchasing goods and/or services. The data indicate that around 70% of the companies

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purchase online. On average, approximately 34% of the total purchases of the companies are conducted online.

- On average around 34% of the total purchases of the companies are conducted online.
- Online commerce is far less used for selling their own goods and/or services, only 4 out of 10 companies using this method. Nevertheless, the volume of sales in these companies which are conducted on line is somewhat higher, approximately half (48%) of their total sales.

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