digital icons
Studies in Russian, Eurasian and Central European New Media

Geography of the Early Internet in Bulgaria: Territorial and Social Configurations

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Abstract: The article studies the correlation between real and virtual geography in the context of the early Bulgarian internet (the period up to 2003). The author examines the geographical distribution of the key domain names. The text analyses the gradual yet nonetheless strong centralisation of the internet as a result of which almost all online resources came to be produced in the capital city, Sofia. It considers the role of the first big national online portals in this process and the evolution of certain local websites, related to specific settlements. It comments on the effects of the excessive centralisation of the internet and the lack of a developed periphery. The article also analyses the early Bulgarian online entrepreneurs, and the way their own capital-specific lifestyle has influenced the general content of the Bulgarian internet. Concentration, powered by commercialisation, illustrates the attempt of the internet entrepreneurs to exercise maximum centralised control over the distribution of the information flow into the network in the country.

Keywords: Bulgaria, internet, geography, location, city, network, centralisation, domains

A retrospective look at the geography of the early internet in Bulgaria allows some central dynamics concerning initial internet provision to be traced. The article offers an analysis of certain significant developments in the period up to 2003, including the emergence of the first Bulgarian internet providers and content platforms, and the distribution of these pioneer online services with regard to their virtual (in the field of the top level domains) and territorial location. In so doing, it aims to illustrate the extent to which geographic location remains of crucial importance for the formation of the virtual infrastructure, and how this leads to persisting social and cultural inequalities in the web. In the concluding section, the idiosyncrasies of the early internet in Bulgaria are contextualised vis-à-vis comparable trends in other European countries.

The discussion of the internet into territorial categories seems problematic in principle: the content of the web is by default 'everywhere and nowhere' and basic physical parameters, such as distance and proximity are relative. At the same time, however, at the practical level, the localisation in the space—both of information providers and of consumers—often remains the main characteristic feature of the presence in the virtual environment. The general accessibility, guaranteed by the web, means that the production of content is deprived of geographical location. Likewise, the person surfing online always remains connected to a specific location outside the virtual space.

It is not a mere chance that commercial industries, entering ever more broadly the web, are taking a keen interest namely in the social and demographic characteristics of internet users. Numerous costly surveys aim to take the internet audience from its assumed anonymity, including in geographical terms. Turning the netizens into a target audience of certain advertising campaigns differs from the traditional manners of identifying the characteristics of the media audience mostly in terms of precision, particularly regarding the location of the potential client. Identifying the location of the user often involves personal information and IP addresses. It is not accidental that the extreme form of hiding ones actual location is a hacker problem in essence. Surfing without leaving a trace is, of course, difficult to achieve for the common user. Specialised companies, offering services for browsing the web anonymously, emerged already in the early period of internet.

Seemingly convenient concepts, such as 'cyberspace', 'internet space' or 'virtual space' often do not offer more than a signal that the traditional physical dimensions are not topical in a similar context. The metaphoric potential of such word combinations is often larger than their specific descriptive value. The very fact that the word 'space' features in many of the neologisms shows that the virtual environment is structured in an analogous way to the traditional spatial organisation. In other words, browsing through the web is not fully arbitrary but follows definite predetermined routes (partially physical, partially virtual) often invisible for the users themselves.

An important theoretical wave is gradually emerging and it is trying to trace and research namely the connection between the two spaces—the physical and the virtual. The first studies undertake to fill the gap in the knowledge of geographical diffusion of the internet. They point out that the information and communication technologies had not been in the focus of the attention of geographers, planners and regional scientists already before the emergence of the internet. Therefore, 'there is a scarcity of empirical studies researching the geography of ICTs' (Tranos 2013: 5). Gradually, however, an increasingly higher number of studies tackle the new 'emerging field of internet geography or cybergeography, which is a branch of the field of communications geography focusing on the geographical aspects of the internet' (Tranos 2013: 1). In 2000 Moss and Townsend note 'the gap in the current literature' and carry out an analysis of the development of internet backbone networks in the United States between 1997 and 1999' (Moss et al. 2000: 35). According to the two authors, geographers gradually become 'more responsive to the challenges of cyberspace to understanding space–time relationships' (Moss et al. 2000: 37). Manuel Castells is among the first researchers with considerable contribution, who develops the concept for the internet as a 'space of flows'. In his opinion, 'the geography of an internet-based economy and society is made of nodes and networks that criss-cross the planet. Thus, it is neither spatial dispersion nor spatial concen-

tration that characterises the new geography but the interaction between both processes, what I have named the "space of flows"' (Castells 2005: X). A number of other authors have joined the study of the internet geography analysing its different aspects: the distribution of the internet hosts, bandwidth, IP addresses, links between web pages, domain names, and lists of top websites (Zook 2005: 156). Gradually, the relation between real and virtual geography is affirmed as particularly important for the understanding of the internet evolution in technological and social context.

One of the central topics in this field is related to the issue of the uneven geographical distribution of the internet. Some of the earlier views are rather technologically determined and related to the assumption that the diffusion of the information and communication technologies will make the spatial differences relative and will even lead to 'the end of geography' in different spheres, such as the one of the global financial services (O'Brien 1992). Nicholas Negroponte on his turn states that 'the post-information age will remove the limitations of geography. Digital living will include less and less dependence on being in a specific place at a specific time, and the transmission of place will itself start to become possible' (Negroponte 1995: 165). Later the concepts of 'death of distance', 'end of cities', 'spacelessness' of the internet and the like are criticised as utopian (Zook 2005; Warf 2013). As Warf summarises, 'much of the rhetoric of the late 1990s concerning the potential for internet startups to "destroy geography" or challenge existing "offline" companies seems excessively naïve' (Warf 2013: 8).

While the very first application of the internet is designed and developed as a decentralised network, intended for the needs of the US defence, it is followed by an uneven diffusion of the global distribution of the internet in the society. While the dial-up connection still has a dense geographical distribution (Greenstein 2005), in the US in the late 1990s 'seven highly interconnected metropolitan areas consistently dominated the geography of national data networks' (Moss et al. 2000: 35). Moss and Townsend also note that 'the internet may aggravate the economic disparities among regions, rather than level them' (Moss et al. 2000: 35).

The extremely high technological changes and the growth of the internet in the second half of the 1990s lead to fast commercialisation of the network. On its turn, this process brings a higher geographical concentration in the location of the infrastructure and the internet content (Greenstein 2005). In the US, in particular regional venture capital systems have their contribution to this effect by promoting the rapid development of the companies having given an impetus to the internet development (Zook 2005). In the course of the commercialisation of the internet, the urban centres have a key role. In 2000 the top one hundred cities in the world with the highest number of registered internet domains cover only six percent of the world population and at the same time they hold over half of the world's internet domains (Zook 2005: 22). Some authors begin to describe the internet infrastructure as mostly an urban phenomenon (Rutherford et al. 2004). Others, like Zook and Graham, emphasise the internet's 'core and periphery' structure, created on the principle of action of the algorithms of the search engines, which rank pages, along with the use of other criteria, also based on the importance of other web sites, with which a given page is linked through hyperlinks (Zook et al. 2007).

Against the backdrop of these developments, researchers' interest in the early Bulgarian internet on its turn has to overcome serious gaps. The present article attempts to fill but a small part of them. The geographical distribution of the main domains is studied for this purpose depending on their specific local registration. The author analyses the gradual strong centralisation of the internet as a result of which almost all online resources are produced in the capital city of Sofia. Besides, the article considers the role of the first big national online portals in this process and the evolution of certain local sites, related to specific settlements. It also pays attention to certain important aspects, related to the internet content. It analyses the early Bulgarian enthusiastic internet specialists and entrepreneurs and the way their own capital-specific lifestyle influences the internet content, while turning the culture of the big city into a dominating trend. It attempts to answer the question of 'power-geometries' (Massey 1999) in the Bulgarian internet space in the early period of its development.

The retrospective collection of data for the period of the 1990s and the following decade is difficult. There is actually no systematic data related to the internet geography in that period in Bulgaria. Therefore, the larger part of the observations, proposed in the text, comes from the author's own research. This applies in particular to the study of the geographical localisation of the internet domains. The article analyses their registrations in specific settlements as recorded in the Central Register for Country Code Top-Level Domains (ccTLDs). For this goal, this data has been compared with rankings for the most popular Bulgarian websites from the period in question, in order to geographically locate the generic top-level domains (gTLDs). Additionally, archive records and screenshots of pages from leading Bulgarian portals and local city websites of the period under review have been taken into account. Unfortunately, a considerable portion of the early content of the internet is not accessible any longer and part of it cannot be found and, respectively, retrieved even when using the services of specialised web archiving sites. In such cases, personal data collections (copied content, downloaded websites, etc.), among them data collected by the author specifically for this research project, are particularly valuable, even if the data collected in this way is partial and fragmented.

Evolution of Bulgarian internet and the role of the local space

The internet did not enter the country 'unexpectedly' but on the basis of preparatory activities that facilitated its spreading. The beginning was set by technocratic elites, based in the cities: not only in Sofia but also in other big centres having universities or developed high-tech productions. The first Bulgarian bulletin board systems (BBS) were launched in Varna and Bourgas already before 1989. The regional management centre of FidoNet for Bulgaria was originally based in Varna. Gradually, this network covered an increasingly higher number of cities. FidoNet remained most developed in Sofia and Varna but, in 1993, there were already BBS in Plovdiv, Rousse, Stara Zagora, Pazardjik, Gabrovo, etc. (Belogusheva et al. 2003: 6-7; 32). It was not a mere chance that many of these cities would later turn out to have relatively good positions in the internet geography.

This process, related to the cities with technocratic elites, recurred in the development of the internet. The first provider, Digital Systems [Tsifrovi sistemi], was based in Varna. The

company's clients included commercial organisations, laboratories and institutes of the Bulgarian Academy of Sciences in Sofia, the American University in Blagoevgrad, the Plovdiv University, etc. (Belogusheva et al. 2003: 39). Along with the growing interest, the number of internet providers across the country was also beginning to increase. Many of them had only regional presence, often even within the respective urban neighbourhood, but filled gaps in the virtual map and ensured access for more distant ends users as well. Often, the traffic would be re-sold several times but the extended coverage was at the cost of poorer quality. The development was spontaneous and took the form of local self-organisation. Gradually, the network was extended but the decentralisation principle was partially retained. The absence of any regulation on the part of the state also played a certain role in these processes.

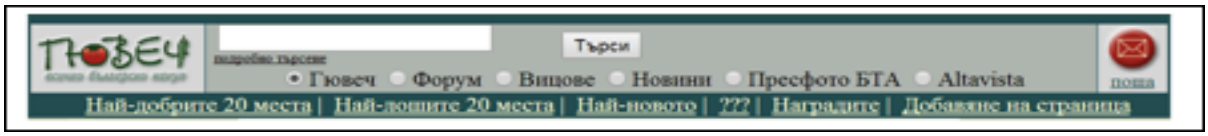
In the early years, the regional development of the network was based on the resource of the increasing number of users. Personal websites dominated. After a certain period of accumulation of experience and capital, the technocratic elites at places often turned out to be at the base of the development of the first regional portals. Such internet pages began to emerge in 1997 (the website of the city of Rousse, rousse.net, was one of the first). Although they had limited audiences at the beginning (often consisting of around one hundred people), their very presence generated interest and resulted in a gradual increase of the number of local users, attracted by the valuable information. The websites began to offer internet services as well. The inspired interest stimulated the emergence of a higher number of personal, tourist and thematic pages, registered by the respective portals.

In Sofia, the process developed in an analogous manner. One of the first sites, related thematically to the city, sofia.com, emerged as early as 1995 and was in English. The general characteristic of these attempts to bind specific cities to virtual projects, representing them, corresponded to the early stage of the development of the internet. They operated on the principle of information about the cities, published in the web and—in the best case—regularly updated. There were no virtual communities organised around them. The web pages often had heavy and technocratic design and clearly illustrated the taste of the early web designers, which gradually developed towards hybridisation of technical and aesthetic skills.

As a result of these activities, in 1997 and 1998, the content offered in the Bulgarian internet space reached critical mass and quickly began to grow further. There was a need of more serious organisation of this resource and an environment that would, at the same time, offer means for easy navigation in the newly emerging sea of information. This was the motive for the launching of the first portal website for Bulgaria, gbg.bg, and, in the next year, the portal, dir.bg. The motto of gbg.bg is: 'All that is Bulgarian in one place'. The name dir.bg also clearly shows an intention to systematise the Bulgarian web space and offer a high number of links to websites within it (organised in directories). Therefore, the big portals managed to accumulate considerable audience and turn into powerful instruments for referral to peripheral places of the Bulgarian internet geography. The fact that dir.bg was equally appreciated in Sofia and the rest of the country, is indicative of its popularity (GFK 2001). At the same time, the portals quickly turned into powerful centralised institutions. A big share of the internet traffic began to pass through them (in 2003, around 90 percent of the users in the country visited dir.bg). For a certain period of time the whole content of the Bulgarian network was practically located on the servers of the biggest portal dir.bg (GFK 2001). After a

hacker attack against these servers in 2000, the content of a large part of the Bulgarian internet space disappeared for a certain period of time (Belogusheva et al. 2003: 153).

Illustration 1. Fragment of the first portal website in Bulgaria, gbg.bg.



Source: https://web.archive.org/web/20000619125217/http://www.gbg.bg/.
Snapshot from 19.06.2000 (29.09.2016).

Already from the very beginning, the national portals were neither perceived nor identified themselves as bound to a certain place of the country's real geography. The general audience is not aware of the administration and the maintenance staff. Often, as in the case with dir.bg, every possible territorial identification was consciously avoided. Other sites, such as gbg.bg, provided information about their address but did not refer to any location in terms of producing content. Nevertheless, the actual location of the leading portals in Sofia exerted great influence on the overall image of the internet in Bulgaria.

The emergence of the national portals was a milestone regarding the concentration of the internet resources. But the centralisation, related to the capital city, began earlier. The first local internet provider in Sofia, Communication and Information Technologies [Komounikatsionni i informatsionni tehnologii], has been operational since 1993. Already at the very beginning, it posted an advertising message: 'Our e-mail does not go through Varna', in an effort to create a counterpoint to the domination of Digital Systems on the market (Belogusheva et al. 2003: 47). The emergence of the first providers in Sofia marked the beginning of the concentration of production of internet content in the capital.

Without making reference to a specific city territory, the two biggest national portals began playing the role of virtual capitals of Bulgaria. In the meantime, while 26.4 percent of Sofianites used the internet, the audience of dir.bg from Sofia accounted for 56 percent of the total number of visitors in 2001 (GFK 2001). Therefore, while dir.bg and gbg.bg insisted on national scope and supra-territoriality, they assumed the function of operational portals of Sofia. In this way, the virtual centres and the real administrative centres of the country largely overlapped although this was not expressly manifested. The unsuccessful attempts to implement other early projects, representing Sofia on the web, were undoubtedly due to the competition of dir.bg and gbg.bg for control of the potential of Sofia in the virtual space. The two portals were involved in a competition even between themselves. So, on the internet, the nationwide and the capital city Sofia became synonymous in the perspective of most frequently visited 'places', such as the central portal sites.

An important peculiarity of the leading portal, dir.bg, was the availability of discussion clubs arranged by cities. Among other thematic forums such as 'Dating', 'EU Accession', 'TV', etc., 42 cities, including Sofia, were represented in the section 'Club for Your City'. The city-specific forums offered possibilities for discussing local issues to the users from

across the country. Therefore, the formation of local communities appeared to be attracted to the symbolic centre of the Bulgarian virtual geography.

The very fact of early presence of city clubs in dir.bg was a part of the strategy for the generation of more traffic and, respectively, for the sale of more services to the users. Interest in regional issues and the people's natural need to discuss problems related to their living environment were capitalised. The big structures in the web were ever more actively trying to take the initiative and use this gradually growing interest.

Although generating small communities, the discussions in the clubs were isolated from the topical agenda of the cities: cinema programmes, public transport schedules, addresses of restaurants, payment of bills, contact with the local administrations, etc. These aspects remained represented in the independent local portal sites. However, such separated city-oriented websites were often not frequently visited because they were not competitive enough, did not organise forums or the forums were not attractive and as a result of all this and due to the commercial policy at central level, the discussion communities migrated towards the virtual capitals, represented by the big portals.

In the city clubs of dir.bg, the intensity of the discussions varied depending on the nature of the settlement. It was weak in the small cities, where discussions would once peak, would later slow down as there was no participation on a daily basis. It was often debated why actually no one would write in the forums. Commentaries on the suggested topics were lower in number or totally absent. At the same time, interest in problems, related to the big city centres, was incomparably high. The postings were regularly seen by several hundred and sometimes, more than one thousand visitors. This was indicative of high interest—practically equivalent to the one in some of the most popular non-urban clubs in dir.bg.

Around 2001-2002, the most 'populated' clubs were the ones of Varna, Plovdiv, Bourgas and Rousse, while, at the same time, the local portals of these cities failed to host sufficiently popular forums or any such at all. On the other hand, Veliko Turnovo, having a good independent website with active discussion groups, had considerably lower representation in the city clubs of dir.bg. Predictably, the activity in the Sofia club of the dir.bg was not high. The Sofia-based users of dir.bg perceived the whole portal as 'their own': both belonging to Sofia and having national scope. This prestigious double status in itself largely satisfied the need of local specialised communication. Topics, related to the capital, were freely discussed in general clubs, such as 'Share with Others' and many others.

Being digital quasi-capitals, the portals largely predetermine the routes of access to the content of the Bulgarian internet. They have created a sustainable path of moving through the virtual geography, at which reaching a certain peripheral point most often goes through the portal. The strong centralisation attributes 'natural' characteristics to this logic. For most of the early users of the web, going through the big national portals was practically the only way to reach the information sought. Therefore, the portals gradually established a certain monopoly over the reality in the web. For the same reason, the mediation of the discussions on regional problems through the centrally positioned big portals is without a doubt a form of control and power.

The policy of the big portals worked successfully for attracting participants in the clubs. The users were often ready to join the city forums of dir.bg simply because there were no other more appropriate venues for such discussions.

The local response to the concentration of internet content in Sofia came through more active self-organisation at city level. The centralisation inspired a secondary wave of regionalisation. A gradual extension of the circle of users was an important precondition for that. Many new city portals, specialised in offering local information, occurred. Such initiatives began to appear soon after the establishment of dir.bg and gbg.bg. The Bourgas portal, bourgas.org, emerged already in 1999. The same year saw the appearance of the Varna-based portal Lighthouse [Far] (ida.bg).

Illustration 2. Screenshot of the Bourgas portal, bourgas.org.

Source: http://web.archive.org/web/19991124122247/http://www.bourgas.org/
Snapshot from 24.11.1999 (29.09.2016).

Illustration 3. The banner of the Varna-based portal Lighthouse [*Far*], ida.bg.

Source: https://web.archive.org/web/19991128064215/http://www.ida.bg/
Snapshot from 28.11.1999 (30.09.2016).

Gradually, an increasingly higher number of commercial projects, implemented as 'virtual cities', entered the internet. The virtual geography does not coincide with the real one but often follows some of the principles of organising of activities on certain territory. The digital cities provide an appropriate example to this effect. Their philosophy, known from the practice of many countries, is based on the relations between a specific settlement and its internet 'version'. According to one of the popular definitions, the digital city is a 'comprehensive, web-based representation, or reproduction, of several aspects or functions of a specific real city, open to nonexperts' (Couclelis 2004: 15). Its software, technological and institutional implementation unfolds within public or commercial projects. An important condition for the existence of the digital cities is their ability to maintain virtual communities and accordingly

community-oriented discussion forums (Schuler 2001). Ideally, such initiatives promote the interaction between the participants, extend the area of social commitment at local level and give an impetus to the urban political culture. So, the motive behind their development includes obtaining of results both inside and outside the web (van den Besselaar et al. 2003).

At the beginning of the first decade of the new century, in the Bulgarian section of the internet, there were activities only partially overlapping with the scope of the 'digital city'. Projects entitled 'Virtual Vratsa' (vratzacity.net), 'Virtual Pleven' (pleven-city.net) and 'Virtual Montana' (virtualna.montana.bg) were implemented in 2003 within the private commercial initiative 'Virtual Cities'. They offered mostly a possibility to see different retail outlets through a series of photos. Regardless of the naïve understanding of content and its confining mostly to services in the web, these pages offered city forums as well. Although rarely visited, they were a sign of gradual awareness of the need of integration of commercial and social aspects of life upon the presentation of the cities. The presence of local news, weather forecast, opinion polls on topical issues, etc. demonstrated the development potential of such initiatives.

The existing city portals as well as a number of sites dedicated to certain settlements should be mentioned in connection with these activities. Undoubtedly, the wish of the municipal administrations to be present online and to offer administrative services to the citizens falls within the same problem area. It can certainly be said that the increasingly closer connection between real cities and their representing virtual locations quickly became a fact in Bulgaria.

The main weaknesses of the newly emerging city sites included the lack of adequate financing (unlike powerful national horizontal portals). Often, the websites were not a priority in the operation of the maintaining companies and were actually loss-makers, which affected their quality. The absence of visits did not allow the projects to support themselves. Part of them, such as the Sliven-based portal, sliven.net, found support from non-governmental organisations.

The municipal structures played an important role in terms of non-commercial developments. The first of them, including the official website of the Sofia Municipality, sofia.bg, were launched in 1998. Gradually, this system of representation progressed successfully and even small settlements created their own webpage at a later stage. A system of online administrative services was developed. The fact that the municipal sites frequently received awards and were nominated in the rankings of top institutional websites was indicative of the positive developments.

Although many municipal sites enjoyed a relatively high interest, they rarely evolved into a living environment for communication. The informational aspect is not transferred by default into a communicative one and the conventional availability of a forum does not automatically generate a community. The strict formal and, often, bureaucratic nature of presenting the content restrained the potential participants in the discussions. Another major problem of the local municipal pages was their pyramidal structure. The municipality-region-government hierarchy remained visible and it was not a mere chance that there would always be a referral to the central government portal. Such an explicit vertical geometry of power was an additional factor towards the lack of sufficient confidence by users.

It was not accidental that successful alternative solutions were sought in the hybridisation of commercial and municipal structures. The website of Veliko Turnovo, veliko-tarnovo.net, provides an appropriate example. A commercial company took the task of designing, developing and maintenance of the official internet page of the town of Veliko Turnovo, the municipality and the region. The original design, the multiple useful links and the availability of clubs quickly turned this site into one of the few portals that really reach a broader circle of people. Neither the commerciality, nor the formal components were overemphasised on it. Links to municipal and regional structures and political parties were provided. The forums were lively and the politics-citizens connection not only survived but received additional impetus. Many external partners were involved in the project as well. The contractor-company, Veliko Turnovo-NET, operated at regional level and made efforts to represent the local events in the web not as a self-contained goal but in the name of the idea to turn the town into the top one in Bulgaria in terms of living standards.

Illustration 4. Fragment of the official internet page of the town of Veliko Turnovo, veliko-tarnovo.net.

Source: https://web.archive.org/web/20011118101402/http://www.veliko-tarnovo.net/ Snapshot from 18.11.2001 (31.09.2016).

Therefore, in spite of the excessive concentration of internet content in Sofia, important local sites gradually began to emerge outside the capital as well. Initially, they were rarely at a good level and managed to reach social efficiency only on separate occasions. Their development was based on the search for an alternative of excessive centralism in the virtual environment. The openly stated local identification undoubtedly provided an advantage to the spatial anonymity of the national portals. In an effort to find solutions for getting closer to people's real problems, coalitions would be formed between the local technocratic elites and the broader business and cultural environments in the regions. The establishment of such alliances was an incentive for affirming the local geography of the web. At the same time, many projects were implemented outside the sphere of influence of the technocratic groups servicing directly the interests of small local companies. Often, in such cases, the quality was at amateur level. Sometimes, the presence of several portals within the same city (Rousse, Vratsa, Varna, etc.) triggered redundant competition and resulted in a waste of resources

within the regional terrain, which was restricted anyway. A high number of the attempts to set up local sites failed simply because they could not attract the minimum number of participants, needed for their successful launching.

Regardless of the positive developments and the continuous emergence of new portal sites, by 2002, they remained with weak positions and limited influence. The number of their visitors could not be compared to the one of the main network structures based in Sofia. The absolute priority of the capital in the virtual geography remained without serious competition. There are several more reasons for this phenomenon.

Virtual vs real geography

The answer may start from real demography. In late 2001, Bulgaria's population was approximately 7,925,500, of whom 69.3 percent lived in towns and 30.7 percent in villages (NSI 2001). This uneven demographic distribution, together with territorial differences in social and economic development, largely determined uneven access to internet services in the country. For example, in October 2001, a total of 10.8 percent of the Bulgarians had access to the global web, almost double the number as of April 2000 (Vitosha Research 2002). It should be noted that, while in Sofia the number of internet users increased reaching 24.1 percent, the use in small settlements remained strongly limited. In 2002 in small villages, it equalled 0.9 percent (Vitosha Research 2002).

There were also drastic differences between people with different educational level, age, profession and annual income. People with university education were most active as 43.3 percent of them were internet users. Among people with elementary education this portion decreased to 3.2 percent. The most active age group was 18-30 years old: 40.1 percent of its representatives used the web. At the same time, only 1.2 percent of the 51-60 age group and 0.7 percent of pensioners were internet users. The highest percentage of internet users was observed among students and free-lancers: 56.4 and 45.8 percent, respectively. There were also big differences in internet usage with regard to income: only 4.7 percent of people on lowest incomes used the web, in comparison to 75 percent among people drawing high incomes (Alpha Research 2012).

Data on the frequency of internet usage in 2002 showed that the internet was typically used two to three times weekly (4.9 percent). The number of active internet users increased although only 3.1 percent were online every day. People accessed the internet from internet halls (7.0 percent) and, more rarely, from places of work (4.9 percent) or from home (2.5 percent). In 2002, the internet was accessed at home by only around 150-200,000 people. The web was most frequently used to check e-mail messages (8.5 percent), followed by searching for information for professional purposes (7.2 percent), surfing for pleasure (5.3 percent), chatting with friends (4.4 percent), etc. (Alpha Research 2012).[1]

The general picture unequivocally shows that in the early 2000s in Bulgaria, the internet was a phenomenon found mostly in the capital and bigger cities, used mostly by young people with high incomes, higher educational status and interests in new technology. In summa-

[1] All data from Alpha Research Agency (www.aresearch.org) are from a nationally representative survey, given to the author for the purposes of this study. The results are based on the entire population of the country. For similar data, see also Vitosha Research (Vitosha Research 2002).

ry, although the internet was no longer a luxury, it was not yet comprehensively used. There was an obvious and deep digital divide, practically going through almost all social and demographic categories: territorial, age, educational, etc. Therefore, the two main problems before the further development of the network in Bulgaria were the relatively low level of spreading and the inequalities in regards to the access.

There was a clear process of an increasing concentration of the population in the big cities. According to the records, 51.6 percent of the country's permanent residents were concentrated in 40 cities with over 25,000 inhabitants. The biggest cities (over 100,000 inhabitants) were home to 32.3 percent of the population or nearly one third of all Bulgarians. The growing urbanisation was in contrast with the decreasing number of permanent residents of villages (NSI 2001).

The tendency was in harmony with the demographic characteristics of the internet audience. The online 'population' was unequivocally urbanised as well. In late 2002, 26.4 percent of Sofianites were 'inhabitants' of the web. This percentage was 15.3 for cities with 100 to 500 thousand inhabitants. The fewer the inhabitants of a settlement, the fewer its 'representatives' on the web: only 2.2 percent and 2.5 percent, respectively, of settlements with population of up to 999 people and between 1,000 and 4,999 people used internet (Vitosha Research 2002).

Therefore, the depopulation, characteristic of the real peripheral regions, was also transferred to the internet as, there, it is much more drastic: while the city/village ratio in real demography was around 70/30 percent, in the web it was 97/3 percent. According to a GFK survey, quoted by Belogusheva and Thoms, 'around 3 percent of village inhabitants use the internet, as they are mostly of the age of up to 30 years' (Belogusheva et al. 2003:171). Therefore, extreme urbanisation in terms of physical localisation of users was a key fact.

Such an imbalance was mostly due to the uneven economic development on the country's territory. In the absence of sufficient income in small settlements, the access to high technologies is limited. The economic crisis affects most adversely namely these settlements and is in the basis of the migration of the young population to the big cities. As a rule, it is mostly people with lower education and elderly people that stay in the villages. It is not surprising, for example, that for the biggest Bulgarian internet portal, dir.bg, 'pensioner' and 'village inhabitant', were practically synonymous concepts in terms of its audience: the group of pensioners accounted for less than 1 percent of the portal users, while village inhabitants had a share of 2 percent (GFK 2001). Other preconditions for the drastic digital divide according to the city/village indicator during that period were infrastructural ones: insufficient degree of telephone lines' penetration, poor communications in the villages, etc.

But the urbanisation was not only an aspect of the concentration of consumers in an urban environment. It also affected the geography of the production of web content: the localisation of institutions and persons, standing behind the otherwise amorphous concept of 'Bulgarian internet'. The total number of registered hosts provides a rough idea of the volume and geography of the national internet space. In January 2003, the existing hosts at the various levels of the Country code top-level domain (ccTLD) .bg numbered 29,257. They can hardly be subjected to a relevant geographic analysis. In an effort to offer lower prices for hosting and domain names, many internet companies operating in Bulgaria used servers actually located in other countries (Belogusheva et al. 2003). Therefore, the study of the address registration

of the organisations and persons, owning the domains, is the safest way of geographical location of the sources of content for the Bulgarian internet. The national register of domains for the *.bg* extension offers public access to a list of all used names. By 30 October 2003, the total number of registered top-level domains was 2,651. Data showing the relationship between specific settlements and number of registered domains with a *.bg* URL ending is presented in Table 1. Table 2 shows the same ratios as percentages.

Table 1. Number of registered top-level *.bg* domains, according to settlement.

Settlement	***Number of top-level domains .bg***
Sofia	1793
Varna	217
Plovdiv	103
Bourgas	42
Rousse	36
Stara Zagora	34
Gabrovo, Shoumen	28
Pleven	18
Veliko Turnovo	15
Blagoevgrad	12
Sliven	10
Kazanluk	9
Troyan, Haskovo	8
Pazardjik, Petrich	7
Dimitrovgrad, Dobrich, Lovech, Silistra	6
Devnya, Kyustendil, Nessebur, Rakovski	5
Vratsa, Gorna Oryahovitsa, Tryavna	4
Pomorie, Popovo, Razgrad, Svishtov	3
Albena, Byala, Vidin, Dryanovo, Elena, Zlatna Panega, Ivanovo, Isperih, Karlovo, Kostinbrod, Kurdjali, Lom, Pavlikeni, Pernik, Peshtera, Plachkovtsi, Radnevo, Razlog, Samokov, Sandanski, Sevlievo, Turgovishte, Cherven Bryag	2
Aitos, Asenovgrad, Bankya, Bansko, Belene, Botevgrad, Byala Slatina, Veliki Preslav, Damyanitsa, Debelets, Dolna Mitropolia, Doupnitsa, Elin Pelin, Zlatograd, Ihtiman, Kavarna, Kazichene, Kaspichan, Klissoura, Kozloduy, Kolarovo, Kostenets, Kotel, Kremikovtsi, Loukovit, Luki, Lyaskovets, Mezdra, Momchilovgrad, Montana, Oreshak, Petkovo, Pirdop, Ravno Pole, Sevlievo, Senovo, Slivnitsa, Sopot, Stamboliiski, Strajitsa, Strelcha, Suedinenie, Teteven, Toutrakan, Hissar, Chepelare, Cherni Vit	1
Settlement abroad – for companies and organisations, registered abroad	123
	TOTAL: 2,651

Source: Author's study based on the national register of domains *.bg* (register.bg) (data for 2003).

Table 2. Distribution of top-level domains *.bg,* according to the settlement, in percents.

Settlement	***Percent domains .bg***
Sofia	67.6
Varna	8.2
Plovdiv	3.9
Bourgas	1.6
Rousse	1.4

Stara Zagora	1.3
Gabrovo, Shoumen	1
All other settlements in Bulgaria (total)	9.4
Settlement abroad (for companies and organisations, registered abroad)	4.6
	TOTAL: 100 %

Source: Author's study based on the national register of domains *.bg* (register.*bg*) (data for 2003).

Without a look at the second big group of top-level generic domains (gTLDs) with extensions, *.com*, *.net*, *.org*, etc., the location of the institutions and subjects in the *.bg* domain will provide only a partial idea about the virtual geography in the country. Unlike the national domains, the registration of the generic ones was not obligatorily bound to a certain territory, nor to a specially authorised administrator. The price for the registration of such domains was two to three times lower than the one for the *.bg* domain. The very procedure was alleviated and much faster. Such advantages were a precondition for the popularity of this type of domains. However, it is difficult to assess this popularity. Unlike the national domains, the ones of this second group are not described statistically 'by country'. This, of course, does not mean that they are not territorially defined. The territorial identification is pointed out in the course of the procedure for the registration of the respective domain. The registering organisation could be seated, for example, in USA, while the address of the domain's owner could be in Rousse. Yet, the functional principle of presentation is guiding: business institution—for *.com*, network institution—for *.net*, organisation—for *.org*, etc. At the same time, the territorial representation remains suppressed. Therefore in the absence of a uniform registration system providing statistical information for the distribution of the generic domains of this type by address registration in the respective countries, it is possible to assess the level of their presence in the 'national' internet space and their further geographical location only with the help of indirect methods.

The analysis of the most prestigious and popular ranking of Bulgarian websites, Web Counter, offers such possibility. A review of the 2003 annual ranking of the Top 100 internet sites shows a relatively similar distribution of the domains of the two types in this 'sample': 51 percent of the pages were registered in the *.bg* domain, while the remaining 49 percent were distributed among the generic domains: *.com* (38%), *.net* (9%) and *.org* (2%). The result of the analysis of the spatial localisation of all generic domains in the ranking (by tracing their address registration) is presented in Table 3.

Table 3. Distribution of domains *.com*, *.net* and *.org,* according to the settlement, in percents.

Settlement	*Percentage of gTLDs*
Sofia	73.5
Varna	6.1
Plovdiv	6.1
All other settlements in Bulgaria, total	10.2
Settlement abroad	4.1
	TOTAL: 100 %

Source: Author's study based on Top 100 of Web Counter (data for 2003).

Although the conclusions, drawn on the basis of the 'sample' of the ranking of the Top 100 Bulgarian websites, do not have a representative nature of an analysis of the *.bg* domains, they provide an idea both of the relation between the two types of domains and of their geographical distribution on the country's territory. The intuitive expectation that the domains, differing from *.bg*, would have broader distribution has not been confirmed. The analysed set of data shows that, institutionally, 73.6 percent of the *.com* domains, 77.7 percent of the net domains and 50 percent of the *.org* domains were concentrated in Sofia. It is evident from Table 1 and Table 2 that the *.bg* domains have similar quantitative and territorial distribution but it can be said that they are more representative in the categories of volume and quality of the internet content. Although the total number of the *.bg* domains in that period was not big, the number of the related subdomains, as we have seen, was significant, which means, among other things, generation of large volumes of content. At that stage of its development, the most important and big institutions were registered mostly in the *.bg* domain. It is not a mere chance that 75 percent of the first 20 most popular websites in the analysed ranking of Web Counter have a *.bg* extension. At the same time, of all internet addresses in Top 20, only one had a location outside Sofia (in Varna). Table 4 summarises these results:

Table 4. Analysis of the domains in BG TOP 20.

BG TOP 20	***Domain***	***Location***
1. ABV.*bg* – free e-mail	bg	Sofia
2. mail.*bg* – Bulgarian e-mail!	bg	Sofia
3. Net Info - news	bg	Sofia
4. Bulgarian megasite for making acquaintances	com	Sofia
5. FREE.Data.*bg* – Bulgarian free zone	bg	Sofia
6. FREE.techno-link.*com*!	com	Sofia
7. Elmaz.*com* – Meet love!	com	Varna
8. MP3-BG.*com*	com	Sofia
9. *SEGA* daily	com	Sofia
10. FOCUS news agency	net	Sofia
11. HIT.*bg*	bg	Sofia
12. *Dnevnik* - Online news site	bg	Sofia
13. mail.*bg* – home page	bg	Sofia
14. Net Info – post cards	bg	Sofia
15. TOPSPORT	bg	Sofia
16. 404 (ignorance of the BG webmaster)	bg	Sofia
17. SEARCH.*bg* - The Bulgarian Search Engine	bg	Sofia
18. ALL.*bg* * Start from here!	bg	Sofia
19. news.*bg* - the news just as they happen	bg	Sofia
20. Sports news and statistics	bg	Sofia

Source: Author's study based on Top 20 of Web Counter (data for 2003).

The analysis clearly shows that 75 percent of the domains in the ranking have a *.bg* extension. Almost all leading web companies were located in Sofia, which was complemented by clearly expressed institutional concentration: four of the twenty leading websites belonged to a single company—Net Info (also an owner of the big portal, gbg.bg).

The geographical concentration of domains in Sofia could be even more significant because it may be expected that the *.bg* domains of second and third level would be strongly

represented here. The results of the analysis of the general distribution of the different domains in the annual ranking of Web Counter (2003) are summarised in Table 5:

Table 5. Domains in the Top 100 sites of Web Counter.

.bg	*.com*	*.net*	*.org*
51%	38%	9%	2%

Source: Author's study based on Top 100 of Web Counter (data for 2003).

Given that the Top 20 were located mostly in Sofia (practically almost 100 percent), it may be assumed that the other domains would also be concentrated mostly in the capital city. This theory is confirmed by the analysis of the location of the domains, other than *.bg*, included in the Top 100 of counter.search.bg (Web Counter): 49 percent of all domains are not *.bg*. The analysis of their geographical distribution (by locating their registration) is presented in Table 6:

Table 6. Distribution of the non-*.bg* domains in the annual Top 100 ranking of Web Counter.

Domains in Top 100	*%/Number*	*Sofia*	*Varna*	*Plovdiv*	*Other settlements with one domain*
.com	38%	28	3	2	5
.net	9%	7	-	1	1
.org	2%	1	-	-	1
Total	49%	36	3	3	7

Source: Author's study based on Top 100 of Web Counter **(**data for 2003).

In other words, a total of 73.5 percent of all non-*.bg* domains in the Top 100 of the ranking were located in Sofia (see Table 7):

Table 7. Percentage distribution of non-*.bg* domains by settlements.

Sofia	*Varna*	*Plovdiv*	*All other settlements - total*	*Abroad*
73.5%	6.1%	6.1%	10.2%	4.1%

Source: Author's study based on Web Counter (data for 2003).

It could be assumed that, due to the high popularity of the online services represented in the Top 100, more general conclusions could be reached about the two types of domains within this ranking. In this context, it must be remembered that registrations using a .bg domain are less common, and are used for websites that generate only relatively small audiences and visitor numbers. The reasons are mostly economic, as has already been stated. Yet, the Top 100 ranking provides a relatively good idea about the ratio between the different types of domains because the ones enjoying the most frequent visits are also included.

Several further aspects are characteristic and important: The first stage of the internet development in Bulgaria saw a high concentration of domains in Sofia. According to the analyses carried out, more than two thirds of the institutions and the persons, related to *.bg* do-

mains, were based in Sofia. There are sufficient grounds to believe that such concentration was typical of the distribution of the other first-level domains. The number of the internet domains, related to Bulgaria but registered by foreign organisations or abroad, was relatively low.

The real production of internet content outside Sofia was concentrated only in several larger cities, the more important of them being Varna and Plovdiv. While the domains were concentrated mostly in Sofia, large sections of the country's territory were actually not represented in terms of national registration *.bg*. For example, Montana Region was represented only by two *.bg* domains (one in each of Montana and Lom). The situation in the Smolyan Region, which was represented by three *.bg* domains (one in Chepelare and two in Zlatograd), was similar. The Pernik Region was represented with two *.bg* domains, located within the city Pernik, the administrative centre of the region. From a geographical perspective, at the beginning of the first decade of the century, the Bulgarian internet was a phenomenon typical mostly of Sofia. The analysis of the distribution of the domains may be extended even further in relation to the ratio between the actual weight of the regional centres (population) and number of registered *.bg* domains within them (see Table 8):

Table 8. Ratio between population of the regional centres and number of registered *.bg* domains within them.

Regional centre	***Population***	***Number of registered .bg domains***
Blagoevgrad	78 175	12
Bourgas	209 479	42
Varna	320 668	217
V. Turnovo	90 504	15
Vidin	77 500	2
Vratsa	85 218	4
Gabrovo	77 947	28
Dobrich	25 736	6
Kurdjali	69 830	2
Kyustendil	70 607	5
Lovech	62 162	6
Montana	61 430	1
Pazardjik	127 918	7
Pernik	104 626	2
Pleven	149 174	18
Plovdiv	338 302	103
Razgrad	58 874	3
Rousse	178 435	36
Silistra	61 942	6
Sliven	136 148	12
Smolyan	47 321	-
Sofia (city)	1 173 988	1793
Stara Zagora	167 708	34
Turgovishte	60 890	2
Haskovo	99 181	8
Shoumen	104 473	28
Yambol	82 656	-

Source: Author's study based on the national register of domains *.bg* (register.bg) (data for 2003).

The data clearly shows that the ratios between the population of the regional centres and the number of domains were not equivalent. For example, while the ratio of the population of Sofia and Plovdiv was approximately 4:1, the one between the domains was 17:1 (1793/103). The same is the situation with the Sofia-Varna ratio (population ratio of 3.7:1 and domain ratio of 8:1), Sofia-Bourgas (5.6:1 and 42:1, respectively), etc. Therefore, the strong disproportion in the presentation of Sofia on the web was complemented by the fact that the real differences between the cities were deepening in a digital environment. In other words, the real weight of the cities did not correspond to their digital representation on the web. While Varna and Plovdiv had almost equal number of inhabitants, the number of domains of the former was almost double the one of the latter. Yet, it seriously lagged behind Sofia with nearly four-times bigger population from Varna and eight times higher number of registered *.bg* domains. Finally, the territorial distribution of the domains corresponded not so much to the population but to the economic and cultural development of the respective settlements. One of the important peculiarities of the development in the period of transition was the concentration of economic activities in the capital. Even big cities, as Plovdiv, Varna and Rousse 'seriously lag behind in their economic development. This additionally depopulates the rest of the country and in the small settlements there are practically no business initiatives,' according to the surveys carried out in 2004 (Yanova 2004).

Although the virtual geography of the country appeared extremely centralised, the expectation that the model of the digital city would be applied successfully at least to the capital was not fulfilled. By 2002, there were no popular and professional websites specifically dedicated to Sofia as a city. Attempts for the development of such projects consistently failed. One of the most promising, but nevertheless unsuccessful projects was cnupka.com. In 2003, this information website went bankrupt and placed a notice 'For Sale!' at its home page. Several reference sites about Sofia were launched, such as the one with the cultural events in Sofia, 'Programata!' (programata.bg) but they did not have the characteristic features of a digital city.

In 2001, the project 'Virtual Sofia' was started as a private initiative. The website offered for the first time 'virtual citizenship' and even a Virtual Personal ID Number. The 'virtual Sofianites' were invited to participate in forums, publish announcements, shop in virtual stores, search for news, etc. The website had the objective to develop four sections: commercial, educational, tourist and social. The social section said: 'We wish to be an independent forum for everything happening in our city. Future projects, related to Sofia's image, could be openly discussed freely and every opinion would be accessible for anyone' (Virtual Sofia 2003). This project, being closer as a policy to the ideas about a digital city, remained, however, quite unpopular and failed to involve a virtual community. It did not have sufficient resources to attract interest and ceased to be regularly updated in 2003, when it announced that it was in need of sponsorship.

The IT elites and the centralisation of the internet space

The central role of the information elites in establishing the internet in Bulgaria affected not only to its spatial structure but the nature of its content as well. University and urban culture were contributed through these circles, which left a powerful mark in the appearance of the

network throughout its early development. In practice, the whole infrastructure of this early period—information portals, key websites, etc.—was determined by the interests and aesthetics of the IT and internet elites (early internet entrepreneurs), concentrated in Sofia. They reproduced their own cultural preferences on the Bulgarian internet. Since these elites were young at the time, lifestyle issues played a prominent role in this process. Mirroring these elites, the audiences were young (for a long time, members of the elites and audiences were practically peers), comparatively well educated, and mostly urban. So it was easy for the latter to discover attractive identification models in the emerging web culture.

The peculiarities of the audience of dir.bg clearly illustrate this process. In 2001, 98 percent of the visitors to the portal lived in an urban environment (GFK 2001). In their commercial presentation as a target audience they are not accidentally explicitly described by the terms of certain 'lifestyle' characteristics: an expressly youth profile, high incomes, high educational status, social mobility, consumer culture, high costs on entertainment, high-tech products, luxury goods, etc. (GFK 2001). The section 'lifestyle and entertainment' had a key place in the very interface of the portal. Thus, the circle was closed: a certain urban style was proposed to the audience, while it became a source of the respective demand. The shopping, services, consumption and entertainment, advertised in the big portals and many other key Bulgarian websites, reflected directly prestigious activities, characteristic of the lifestyle in the big city.

Already with their very emergence, the main sites, through which a large part of the communication in the virtual space would flow, turned out to be in a symptomatic proximity—in terms of vision and content—to the design and ideology of magazines such as *Egoist*, which had acquired cult status and dominated the formation of urban aesthetics in post-socialist Bulgaria. It was not mere chance that the *Egoist* was well established on the internet already in 1997. Its emergence on the web practically coincided with the launching of the big Bulgarian portals. The rhetoric and discourses practised by the *Egoist* corresponded to the needs and values of the emerging network culture, and were themselves inspired by internet aesthetics. The online version of the magazine was not only popular among users, but was also awarded numerous prizes for top quality websites. Therefore, this type of stylistic combination of design and content was among the most tolerated on the web and served as a model and incentive for its further development. The mutual interdependency of the *Egoist* magazine's concept and internet aesthetics is well described by Snezhana Popova:

> The message of *Egoist* is indisputably marked by the new media: *Egoist* is for the young people, who have computer proficiency and surf within the net. The language of the new media is their language. We encounter approved computer abbreviations on the pages of the magazine, the skills are upgraded in the texts, the information is updated and the wishes are fulfilled by pressing 'Enter'. The screen is the main space for part of the narration. (Popova 2001:163).

The information and technological stratum, emerging in the course of the 1990s, needed an appropriate environment for the implementation of the new lifestyles. It was namely Sofia, where the preferences of the IT elites could be best satisfied. The increasing concentration of internet experts in Sofia in the second half of the 1990s followed the natural leadership of the city in a broad range of activities: political, financial, administrative, cultural, media-related,

etc. The most important institutions in the country were located here. They all gradually developed a need for online presence, which prompted the need of relevant structures that would take over their servicing. The growing requirements resulted in an avalanche expansion of the circle of experts, committed to the new activities. The IT specialists, having relatively high income compared to the country's average, quickly became one of the main consumers of lifestyle activities and, on their turn, began to impose their own cultural priorities in the web.

The internet economy was oriented towards an exchange of knowledge and technologies and was based on the need of continuous external contacts. Offices and representations of a high number of companies, related to computer and information technologies, were seated in Sofia: IBM, HP, Apple, Microsoft, etc. That was yet another reason for the internet business to remain concentrated mostly in Sofia; the respective sectoral organisations were also located in the capital. Therefore, even the internet companies in the rest of the country remained strongly dependent on the developments in the IT scene in Sofia.

The concentration also visualised the power-inspired attempt of the internet elites for maximum centralised control over the distribution of the information flows in the country's networks. Gradually, the IT specialists, based in Sofia, began playing a decisive role for redefining the 'issue of the social access to technologies, knowledge and actions' (Petev 2004: 131). They turned into a new authority, appeared in public ever more actively and often competed or even replaced the traditional intellectual elites.

Having begun pluralistically as diverse techno culture, around 2002, the internet eventually culminated into imposing the model of a predominantly youth and urban culture framed by urban cultural practices and lifestyle aesthetics. Presented by the big portals as national and universal, this ideology appeared to be closest to the international style of cultural globalisation unfolding in the internet. It was namely this openness to the 'external' side of the web environment that was among the important reasons for the close connection of the big portals to Sofia. The capitals and the big metropolises invariably have communications concentrated around them, including in the internet and are closest to the international cultural style exchanged in the web.

Factors related to certain subjective user attitudes were among the reasons for the excessive urbanisation of the early Bulgarian space. In the US, for example, the virtual communities were at first naturally perceived through the nostalgic metaphor of the 'small town' turning into a 'virtual substitute' for the disintegrated or disintegrating real community as a result of the 'degradation of the public space in America' (Stratton 1997: 269-269). At the same time, in Bulgaria, the fascination of the Sofia style in the web was often prompted by the opposite motivation: the attempt to avoid the excessively warm relations of the family or other small local communities at places, the 'rural' component in culture, the provincialism or the conservatism of the 'small town'.

Therefore, for many of the early users in Bulgaria, browsing through the internet was an alternative to what was happening in the real world. However, the limited popularity of the local city sites was sometimes probably due to the wish to escape from everything reminiscent of poverty, disorder or violence in the real world inhabited by the users. Furthermore, it is no accident that the most successful examples of city sites were related to settlements offering good living standards. For example, in 2000, Veliko Turnovo reported the highest lev-

el of human development in the country outstripping even Sofia (Davidova 2000). So, the efficiency of the city/site relation remained dependent on the social and economic situation in the respective settlement. The very existence of city sites was indicative of development not only of the network but also of the respective municipalities.

At the same time, the privileged escape into the virtual reality of the big 'deterritorialised' portals remained a utopian notion. In practice, these were business zones, entailing the emergence of economic relations between users and owners. Characteristically, these portals defined themselves as media outlets. The owner of dir.bg, Vladimir Zheglov, for example, says: 'I understand the competition with the other media as something positive. We have been constantly working towards recognising the internet as a media and a serious telecommunication instrument. This has not been fulfilled yet' (Belogusheva et al. 2003:156). This was one of the reasons why the big portals were dominated by commercial rather than public attitudes. Trying to assume maximum strong positions on the web, they restricted the possibilities for regional development of the network and strengthened the imbalance in the national/local relations.

In the beginning of the first decade of the 21st century, many Bulgarian local websites were still taking their first steps. Without resolving the issue of general or, at least, sufficiently broad access to the internet, the effect of the presentation of smaller settlements on the web remained minimal. Then the social applications of the web were also at an early period of their development. Many of the main players were not aware of the internet potential and acted only intuitively. On the other hand, the existing local communities would often not find sufficient grounds to transfer the city problems into the virtual space and continued to address them with traditional means. The later experience clearly showed that the web communities have a potential to mobilise the participants for political and public activities and promote urban change.

Finally, the expectations about an explicit heterogeneity of the Bulgarian virtual geography of the first decade of internet expansion were not confirmed. There was no firm emancipation of the internet from the real geography. Instead of becoming relative, the spatial categories rather confirmed their significance on the web. The centre/periphery and national/local relations retained their role and even strengthened the oppositions between each other. The information inequality between regions and cities intensified in the new digital environment. The distance between producers and consumers of information on the web preserved not only its social but also its geographical nature. The horizontality of the internet structure was duplicated by a strongly expressed hierarchy in the geographical concentration of infrastructure and production of content. There was a difference in the speed of access to the global web between the different geographical regions. The commercialisation has inevitably led to centralisation.

Gradually, the departure of the internet from the elite stage of development resolved some of the above problems. At the same time, the later stages of development of the network repeated some of the key moments observed during the first decade of its existence. Finally, the big urban centres have established lasting control over the geographically 'decentralised' internet. Its geography keeps on reproducing the obvious inequalities, triggered by the social differences.

Regional context and later developments

The early stage of the internet development in Bulgaria is not unique although it has certain peculiarities which distinguish the country from the concurrent processes in other countries. These peculiarities pertain mostly to technological preconditions related to the well-developed Bulgarian electronic industry during socialism, which later facilitated the entry of the internet in the country (Spassov 2004). The very spatial structure of the internet depends strongly on the individual level of centralisation and hierarchisation in the respective country. In general, the overall tendencies of spatial diffusion of the early internet in Bulgaria have a number of peculiarities, typical of the broader context of Southeastern Europe. For example, Trcek and Sterle point out that in Slovenia 'towards the end of the 1990s the researchers <… > establish the availability of an increasing number of regional differences in the use of the internet" (Trcek et al. 2004: 213). Besides, the two authors note that the 'informationally poor' in Slovenia are not only in the peripheral village areas but also in the old industrial regional centres (Trcek et al. 2004: 224). As we saw, such processes are characteristic of Bulgaria as well.

At the beginning of the 2000s the centre-periphery ratio was comparatively favourable in Greece, where internet access rates in Athens and Thessaloniki were respectively 36 percent and 37 percent of the population, compared to a national average of 24 percent (Spassov 2003: 12). In Albania, which was at the other end of the scale at that time with around one percent of the population having access to the internet, even the internet cafés remained concentrated almost exclusively in two cities (Nune 2003: 36). Across the region, the ISPs were often concentrated in the capital city (Spassov 2003: 15).

These processes also influence the spatial distribution of the domains. Trcek and Sterle underline that in Slovenia, in the 1991-2004 period, the registration of *.si* domains had an uneven distribution with the highest density in the capital city of Ljubljana—36 percent (Trcek et al. 2004: 222). As other surveys show, at the end of the 1990s the domains in Europe were highly concentrated in the capitals: London had 29 percent of the British domains, Paris—26.5 percent of the French ones and Madrid and Barcelona, taken together, represented over 50 percent of the Spanish domains. The situation at that time in Sweden, Finland, Denmark and other European countries was similar. Only Germany had a decentralised system of internet content provision with Berlin, Munich and Hamburg having a relatively low percentage of concentration compared to other areas (Zook 2000; Castells 2001: 220).

Against this backdrop, the excessive concentration of registered domains in the capital of Bulgaria, Sofia, in 2003 (almost 68 percent of the domains *.bg*) is a sign of a close relationship between the strongly centralised organisation of the state and the distribution of the internet. The current analysis has presented some of the effects related to this imbalance. The domination of the capital in the internet is not just limited to the infrastructure but affects the nature of the content in the web as well. It is closely related to the lifestyle of the city elites and the early internet specialists and entrepreneurs.

A glance at the later developments in Bulgaria shows that the internet itself is not capable of resolving the problems with the imbalance in the development of the regions. The considerable difference between centre and periphery in the country persists. In 2015, 18.5 percent of the population in the country lived in Sofia (NSI 2016a). Nearly 68 percent of the inhabi-

tants have access to the internet in the Southwest Region, which is inhabited by some 30 percent of the population and where the capital city is located (NSI 2016a, 2015). This compares with 44.9 percent having access to the internet in the most scarcely populated Northwest Region, inhabited by 11 percent of the Bulgarians (NSI 2016a, 2015). The analysis stresses the difference between the GDP per capita in the capital (24,982 BGN) and the least developed Northwest Region (7,381 BGN), according to data for 2014 (NSI 2016b).

The gaps in the internet access—still exceeding 20 percent between the most and the least developed region—reflect the actual economic inequalities in the country. It is clear, however, that the differences, specific for the geographical distribution of the internet, have gradually begun to decrease through the years, while the economic inequalities between the regions are reduced at a slower rate (NSI 2016b). Finally, although the internet is penetrating more densely in the more scarcely populated and poorer regions it is not a decisive factor in the reducing of the big differences in the economics and the incomes between the centre and the periphery. In this sense, the internet access begins increasingly to resemble the access to the mobile phones, which is actually ubiquitous and is not directly related to the economic and geographical inequalities between the regions. The problem with the inequalities is gradually replaced by the access to the internet as such, to the possibilities for access to specific services and content on the web. Purchasing power, education, knowledge of foreign languages, etc. continue to be unevenly accessible in geographical terms as the differences between the regions have even deepened during the past years.

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