

APPENDIX 1.

Definitions of Bulgarian E-readiness Assessment Model, indexes and indicators

The Bulgarian E-readiness Assessment Model is defined as an average value of the following indexes: *Network Access, E-learning, E-society, E-economy.*

I. Network Access

The Network access index is an average value of Network Access Technology Penetration, Network Connectivity, Network Access Affordability,

Indicator 1: Network Access Technology Penetration is defined as follows:

Network Access Technology Penetration = 9/14 hard data + 5/14 survey data

Hard Data

1. The teledensity (number of telephone lines per 100 people) *Source: BTC Annual Report*
2. The percentage of households that have a phone line installed *Source: BTC Annual Report, NSI Data*
3. Percentage of digital phone lines (56 kbps capable) as of all phone lines *Source: BTC Annual Report*
4. Percentage of ISDN phone lines (128 kbps capable) *Source: BTC Annual Report*
5. Percentage of households, which have access to cable TV *Source: BTC Annual Report, NSI Data*
6. Percentage of failures of dial-up attempts/connections because they are busy or interrupted *Source: BAIT, BG Online*
7. Failures of the attempts to reach local web sites (servers inaccessible) *Source: BAIT, BG Online*
8. Percentage of the Internet users, who have experienced security related problems (viruses, hacking etc.) *Source: BAIT, BG Online, VR*
9. Number of domains registered under the country's TLD *Source: Digital Systems*

Survey Data

10. Percentage of the population currently having access to the Internet via the cable network
11. Percentage of the population using mobile phones
12. Percentage of the households, which have at least one mobile phones
13. Percentage of the population using mobile Internet access
14. Percentage of households having computers (assuming that every computer, even if not-so-modern, is capable for Internet access)

Indicator 2: Network Connectivity is defined as follows:

Network Connectivity = average of Hard data.

Hard Data

15. Total international bandwidth per capita, bps *Source: BAIT, BG Online*

16. Total national bandwidth per capita, bps *Source:* BAIT, BG Online
17. Number of users per dial-up access point *Source:* BAIT, BG Online
18. Average bandwidth of a leased line, kbps *Source:* BAIT, BG Online

Indicator 3: Network Access Affordability is defined as follows:

Network Access Affordability = 3/5 hard data + 2/5 survey data

Hard Data

19. Percentage of the average price of 1 hour of Internet access of the minimum monthly wage
20. Percentage of the average price of 1 hour of public Internet access (Internet cafes) of the minimal monthly wage *Source:* BAIT, NSI
21. Percentage of the average price of 1 hour local phone call of the average monthly wage
22. Average price (USD) of 1 hour Internet access through mobile service, *Source:* Mobiltel
23. Percentage of the average price of 1 hour Internet access through mobile service of the average monthly wage *Source:* Mobiltel, NSI
24. Percentage of the telecom expenses in the overall expenses for Internet (ISP price + telecom price)

Survey Data

25. Average prices (USD) of 1 hour of dial-up Internet access, *Source:* BAIT, BG Online
26. Average prices (USD) of 1 hour of public Internet access (Internet cafes etc), *Source:* BAIT, BG Online
27. Average price of unlimited dial-up Internet access, USD per month. *Source:* BAIT, BG Online
28. Percentage of the average price of unlimited dial-up Internet access of the average monthly wage *Source:* BAIT

II. Networked Learning / E-Education

E-Education is defined as an average value of Technical facilities /IT infrastructure in schools and universities, Teachers, Internet sites, Training policy and IT education.

Indicator 1. Technical facilities /IT infrastructure in schools and universities

Technical facilities = average of Hard data.

Hard Data

1. Percentage of schools (primary and secondary) which have computer labs
2. Percentage of schools (primary and secondary) which have access to the Internet
3. Percentage of universities which have access to the Internet
4. Percentage of schools (primary and secondary) which have Intranet
5. Percentage of universities which have Intranet

Indicator 2. Teachers

Teachers = average of Hard data

Hard Data

6. Percentage of teachers using computers
7. Percentage of teachers who use Internet (at work/at home)

Indicator 3. Internet sites

Internet sites = average of Hard data

Hard Data

8. Percentage of schools, which have own Internet site
9. Percentage of universities which have own Internet site

Indicator 4. Training policy

Training policy = average of Survey data

Survey Data

10. Percentage of schools which have some computer/IT education of the curricula
11. Initiatives to integrate the Internet and IT technology in education and training policy.
12. Initiatives taken by business to increase access of schools to the Internet.
13. Cooperation between educational institutions and businesses to develop up –to–date curricula.
14. Distance education usage in the education.

Indicator 5. IT education

IT education = 3/5 Hard data + 2/5 Survey Data.

Hard Data

15. Percentage of students of schools in IT specialities / % of all students
16. Percentage of students of universities in IT specialities / % of all students
17. Percentage of post-graduated students of universities in IT specialities / % of all students

Survey Data

18. Percentage of population with education in the field of IT
19. Percentage of population who have attended computer courses

III. Networked Society – E-Society

E-Society is defined as an average value of Users of computers, Users of Internet, Internet services, Internet users' habits and Public Institutions.

Indicator 1. Users of computers

Users of computers = average of Survey data

Survey Data

1. Percentage of total population who has access to computers
2. Percentage of total population using computers at home
3. Percentage of total population using computers at school or university
4. Percentage of total population using computers at work
5. Percentage of total population using computers at public places (libraries, Internet cafes)

Indicator 2. Users of Internet

Users of Internet = average of Survey data

Survey Data

6. Percentage of total population using the Internet
7. Percentage of total population using Internet at home
8. Percentage of total population using Internet at schools and universities
9. Percentage of total population using Internet at work
10. Percentage of total population using Internet at public places (libraries, Internet cafes)
11. Percentage of population who use e-mail at least once per week

Indicator 3. Internet services

Internet services = average of Survey data

Survey Data

12. Percentage of population who use most often Internet sites in Bulgarian language
13. Percentage of population who use online services
14. Average Internet usage, hours per capita monthly

Indicator 4. Internet users' habits

Internet users' habits = average of Survey data

Survey Data

15. Percentage of population who use Internet more than 1 hour per day (only for users who use Internet every day)

16. Percentage of population who have used Internet up to 1 year
17. Percentage of population who use Internet for news
18. Percentage of population who use Internet for shopping
19. Percentage of the population who have access to computers but cannot afford Internet access
20. Percentage of the population who has access to computers but cannot use Internet due to technological and/or computer literacy reasons

Indicator 5. Public Institutions

Public Institutions = average of Survey data

Survey Data

21. Percentage of national media which have Internet sites
22. Percentage of hospitals and clinics which have own Internet sites
23. Percentage of public institutions (libraries, museums, etc) which have own Internet sites

III. E-Economy

The Eeconomy index is defined as an average value of: *Computers usage in business, Internet usage in business, Internet usage in business, Web space usage by business, Availability of e-payment instruments, ICT employment opportunities and E-government.*

Indicator 1: Computers usage in business

Computers usage in business = average of Survey data

Survey Data

1. Percentage of companies using computers
2. Percentage of workplaces having computers
3. Main use of computers in business.
4. Percentage of companies having Intranet

Indicator 2: Internet usage in business

Internet usage in business = average of Survey data

Survey Data

5. Percentage of companies having Internet access
6. Percentage of staff having Internet access
7. Main use of Internet in business.

Indicator 3: Web space usage by business

Web space usage by business = average of Survey data.

Survey Data

8. The intensity of web space usage by business
9. Percentage of the companies having their own web site

Indicator 4: Availability of e-payment instruments

Availability of e-payment instruments = 1/3 Hard data + 2/3 Survey data

Hard Data

12. Percentage of the population using debit/credit cards Source: Borika

Survey Data

10. Is the technology infrastructure of commercial financial institutions capable of supporting online authorization and settlement of e-commerce transactions?
11. Do financial institutions issue credit cards to consumers?

Indicator 5: ICT employment opportunities

ICT employment opportunities = average of Survey data

Hard Data

13. Percentage of jobs, which require ICT skills
14. Salaries, which get IT workers on average Source: IDG 2000
15. Salaries, which get specialized IT workers (programmers, developers) on average
16. Ratio Spending on ICT/GDP per capita Source IDC

Indicator 6: E-government

E-government = 3/6 Hard Data + 3/6 Survey data.

Hard Data

1. Percentage of workplaces in government institutions having computers
2. Percentage of PCs in government institutions which are connected to the Internet
3. Percentage of government institutions which have own web sites

Survey data

4. Percentage of population who use the Internet to visit government websites
5. Percentage of businesses who use the Internet to visit government websites
6. What best describes the level of online sophistication of government website?

APPENDIX 2.

INTERNET USERS IN BULGARIA

TABLE 3. FOR WHICH OF THE FOLLOWING PURPOSES DO YOU USE THE INTERNET? (%)

| | <i>September 2000</i> | <i>October 2001</i> |
|--------------------------------|---------------------------|-------------------------|
| Recreation / games | 1,9 | 2,8 |
| Research | 3,3 | 5,3 |
| News | 3,1 | 4,2 |
| Investments | 0,4 | 1,5 |
| Work related activities | 5,1 | 6,7 |
| Chat / discussion groups | 1,9 | 3,9 |
| Information search and queries | 5,1 | 7,8 |

Source: Vitosha Research Survey (Random Route Sample), October 2001

ACCESS TO COMPUTERS

TABLE 4. DO YOU HAVE ACCESS TO A PERSONAL COMPUTER AT HOME, AT WORK OR AT ANOTHER PLACE? (BY SEX) (%)

| | <i>Male</i> | <i>Female</i> |
|-----------------------|-------------|---------------|
| <i>At home</i> | | |
| Yes | 6.6 | 8.2 |
| No | 93.4 | 91.8 |
| <i>At work</i> | | |
| Yes | 8.3 | 6.2 |
| No | 91.7 | 93.8 |
| <i>At other place</i> | | |
| Yes | 3.1 | 3.9 |
| No | 96.9 | 96.1 |

Source: Vitosha Research Survey (Random Route Sample), October 2001

TABLE 5. DO YOU HAVE ACCESS TO A PERSONAL COMPUTER AT HOME, AT WORK OR AT ANOTHER PLACE? (BY EDUCATION) (%)

| | <i>Basic</i> | <i>Secondary</i> | <i>Semi-higher</i> | <i>Higher</i> |
|-----------------------|--------------|------------------|--------------------|---------------|
| <i>At home</i> | | | | |
| Yes | 0.4 | 5.5 | 7.5 | 29.7 |
| No | 99.6 | 94.5 | 92.5 | 70.3 |
| <i>At work</i> | | | | |
| Yes | 0.4 | 5.5 | 7.5 | 27.0 |
| No | 99.6 | 94.5 | 92.5 | 73.0 |
| <i>At other place</i> | | | | |
| Yes | 0.0 | 5.7 | 1.9 | 6.1 |
| No | 100.0 | 94.3 | 98.1 | 93.9 |

Source: Vitosha Research Survey (Random Route Sample), October 2001