

ITU Cross Regional Seminar on Broadband Access for CIS,  
ASP and EUR Regions  
Chisinau, Moldova , 4-6 October 2011

Policy Implication for Attaining Sustainable  
Development of Broadband Access  
Technologies in Moldova

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## Outline

- **Moldova country profile**
- **ICT sector performance**
- **Broadband policy implication**
- **Assessment & benchmarking**
- **Final remarks & conclusions**

## Moldova country profile



**Location:** Eastern Europe  
**Population - 4.3 million**  
**Territory 33.800 km<sup>2</sup>**  
**Metropolis: Chisinau**  
**Total GDP (PPP) 11 bl. US \$**  
**GDP per capita (2010) - \$2.500 (PPP)**  
**GDP real growth rate (2010) - 6.9%**  
**ICT share in country's GDP – 9.5%**  
**Life expectancy at birth: 71 years**  
**Unemployment rate (2010) - 6.5%**  
**Literacy rate - 99%**

Source: CIA world fact book

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## The Ministry of ICT core value and mission

- **ICT is the key driver of economic growth, efficiency, productivity enhancement, and transparency**
- **Our mission is to ensure diffusion of ICT through free market and export oriented policy**
- **We create business opportunities and encourage investments by promoting fair competition and developing appropriate legal framework**

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## Current status of Electronic Communications in Moldova

**Table 1. Historical landmark**

Operator	Technology	Network status
MMT	NMT 450i	Launched 1995 Closed 2000
ORANGE	GSM 900/1800 UMTS (W-CDMA)	Launched October 1998 Launched Fall 2008
MOLDCELL	GSM 900/1800 UMTS (WCDMA)	Launched April 2000 Launched Fall 2008
UNITE	CDMA-2000 UMTS (WCDMA)	Launched March 2007 Launched December 2009
EVENTIS	GSM 900/1800	Launched December 2007 Closed 2010

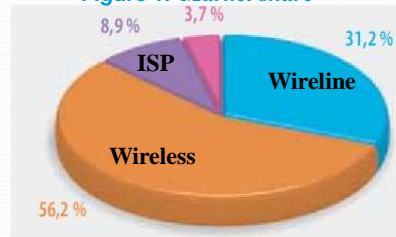
**EC market overview (2010)**

**Total Sales – 530 ml. US\$, 9% ↑**  
**Investments - 150 ml. US\$, 1.4% ↓**  
**3 wireless mobile providers**  
**17 wireline providers**  
**54 ISP**

**Table 2. ICT penetration rate**

	2004	2005	2006	2007	2008	2009	2010
BB (Fixed) Internet			2.4	3.1	4.4	5.7	7.6
Fixed line	25.3	27.4	29.9	30.1	31.2	31.9	32.6
Wireless	23	32	40	53	68	78	89

**Figure 1. Market share**



Source: NRA Moldova<sup>5</sup>

## Broadband Internet Access in Moldova

- **Total sales - 50 ml. US \$ (2010) , 25% ↑**
- **Total BB subscribers 455k ( I sem. 2011)**
- **Fixed BB penetration rate - 8,7 % ( I sem. 2011)**
- **Mobile BB penetration rate - 4,0 % ( I sem. 2011)**
- **2 out of 3 BB subscribers are from urban area**
- **BB penetration rate urban area - 43% (household)**
- **BB penetration rate rural area - 10% (household)**

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## Current status of Broadband in Moldova (I)

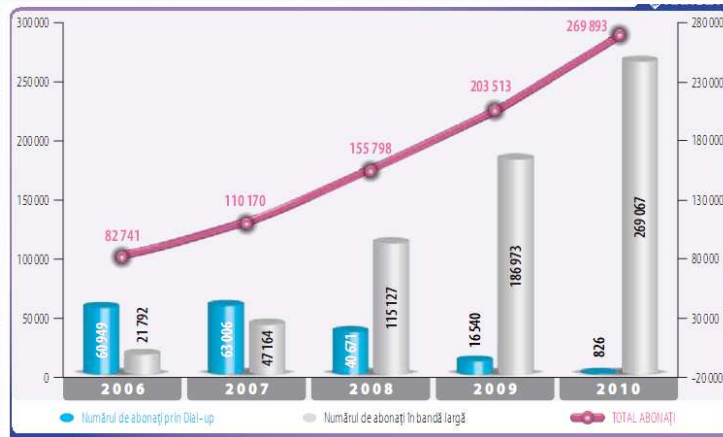


Figure 2. Fixed BB dynamic (by users)

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## Current status of Broadband in Moldova (II)



Figure 3. Fixed BB dynamic (by technology)

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### Current status of Broadband in Moldova (III)

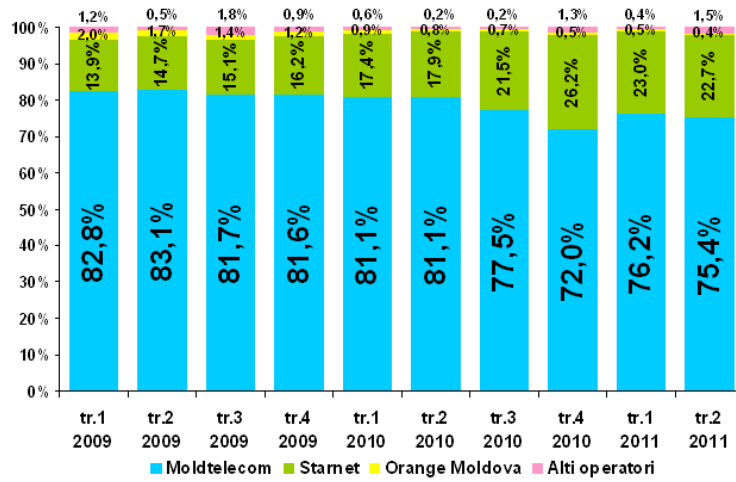


Figure 4. Fixed BB market share (by revenue)

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### Current status of Broadband in Moldova (IV)

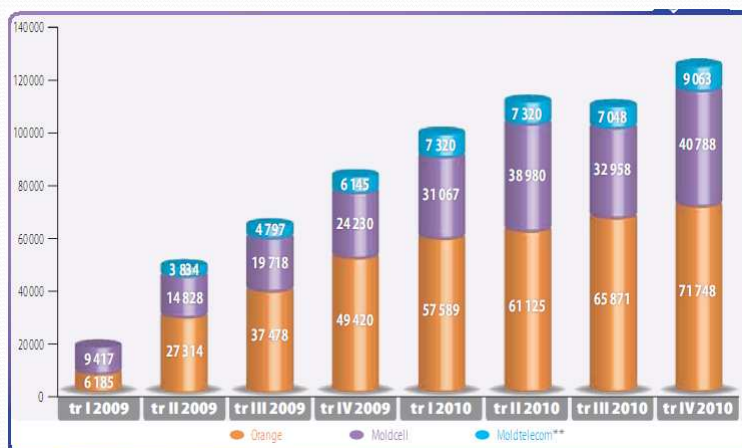


Figure 5. Mobile BB dynamic by users (3G)

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## Broadband policy implication (1)

### National Broadband Program (2010 – 2013)

*approved by Government Decree 1077 dated on 17 November 2010*

- **Main objective** is to bridge digital divide between urban and rural areas
- **It aims to reach by the end of 2013:**
  - a) *Fixed BB penetration rate - 20%*
  - b) *Mobile BB penetration rate - 20%*
- **Ecosystem approach (3 pylons):**
  - 1) *Network rollout (increasing users accessibility)*
  - 2) *Terminal equipment availability*
  - 3) *Content and application development*

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## Broadband policy implication (11)

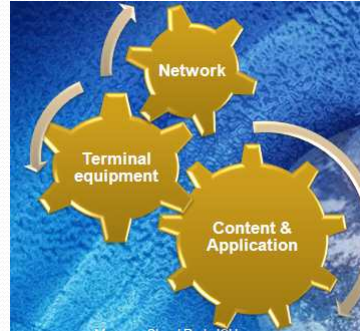
- **Facilitating network rollout**
  - 1) *More spectrum available for BWA*
  - 2) *Appropriate legal framework to facilitate fiber optic rollout*
  - 3) *Efficient regulation*
  - 4) *Monitoring QoS*
- **Ensuring terminal equipment availability**
  - 1) *Equipment terminal subsidiary (Universal Service mechanism)*
  - 2) *Monitoring trends and analyzing statistics*
- **Developing content and application**
  - 1) *Tax facility for SW developers*
  - 2) *Securing cyber space*
  - 3) *Diversifying content*

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### Broadband policy implication (III)

#### ➤ Our expectation:

- 1) *Bridge digital divide*
- 2) *Social inclusion*
- 3) *Productivity enhancement*
- 4) *Competitiveness growth*
- 5) *New business opportunity*
- 6) *New jobs creation*
- 7) *Facilitate PPP*



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### Broadband policy implication (IV)

- **ITU and MoICT joint project “PAPI ”**
- **Project duration - 2 years , III phases, 100k \$**
- **29 Postal Offices , 95 places**
- **One PAPI is equipped with 3-4 PC**
- **Training course – free of charge**



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## ITU ICT Development Index

**ICT Development Index** captures the level of advancement of ICT worldwide, compares progress made and evolution over time of ICT developments in countries

	Weights (Indicators)	Weights (Sub-index)
<b>ICT access</b>		
Fixed-telephone subscriptions per 100 inhabitants	0.20	0.40
Mobile-cellular telephone subscriptions per 100 inhabitants	0.20	
International Internet bandwidth per Internet user	0.20	
Percentage of households with a computer	0.20	
Percentage of households with Internet access at home	0.20	
<b>ICT use</b>		
Percentage of individuals using the Internet	0.33	0.40
Fixed (wired)-broadband Internet subscriptions per 100 inhabitants	0.33	
Active mobile-broadband subscriptions per 100 inhabitants	0.33	
<b>ICT skills</b>		
Adult literacy rate	0.33	0.20
Secondary gross enrolment ratio	0.33	
Tertiary gross enrolment ratio	0.33	

Table 3. ICT DI methodology

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## ITU DI regional ranking

Economy	Regional rank 2010	Global rank 2010	IDI 2010	Global rank 2008	IDI 2008	Global rank change 2008-2010
Russia	1	47	5.38	49	4.42	2
Belarus	2	52	5.01	58	3.93	6
Moldova	3	57	4.47	64	3.57	7
Ukraine	4	62	4.34	59	3.83	-3
Kazakhstan	5	68	4.02	72	3.39	4
Armenia	6	72	3.87	86	2.94	14
Azerbaijan	7	74	3.78	83	2.97	9
Georgia	8	77	3.65	85	2.96	8
Kyrgyzstan	9	100	2.84	99	2.62	-1
Uzbekistan	10	110	2.55	110	2.22	0
Turkmenistan	11	111	2.50	111	2.15	0
Average (simple)			3.85		3.18	

Table 4. Top 10 countries in CIS region

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## ITU DI improvements 2010 -2008

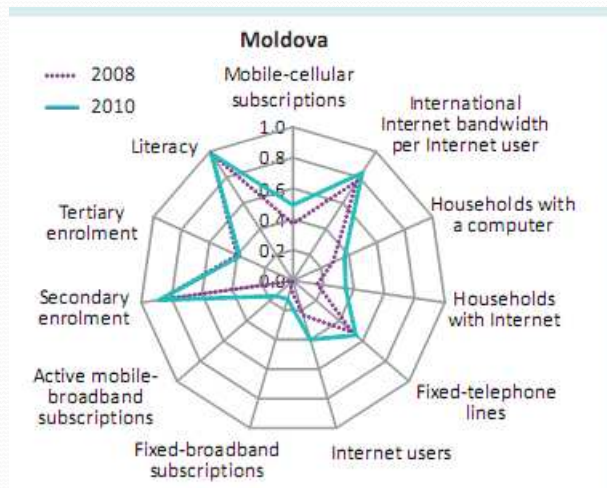
Change in IDI ranking		
IDI 2010 rank	Country	IDI rank change 2008-2010
72	Armenia	14
90	Morocco	10
81	Viet Nam	10
74	Azerbaijan	9
46	Saudi Arabia	9
77	Georgia	8
60	Oman	8
36	Cyprus	7
5	Finland	7
57	Moldova	7

Moldova moved up seven places to 57th in the IDI 2010 and increased its IDI value by 25 per cent. The country doubled its international bandwidth per Internet user, and household access to Internet grew from 16 to 34 per cent. Similarly, fixed- and mobile-broadband and Internet usage increased substantially during the two-year period.

**Table 5. Top ten most dynamic countries in the world**

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## ITU DI change (Republic of Moldova)



**Figure 6. Spider chart**

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## ITU ICT Price Basket

**ICT Price basket** monitor the cost of ICT services, tracks prices of ICT services, and measures ICT affordability

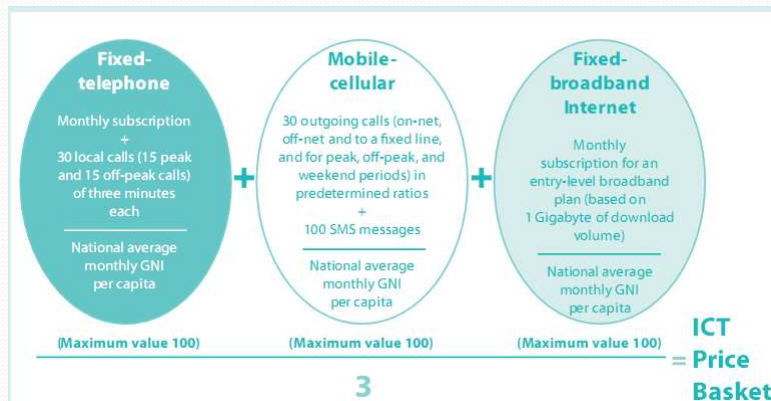


Figure 7. ICT PB methodology

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## ITU ICT PB Global ranking

Rank	Economy	ICT Price Basket	
		2010	2008
1	Monaco	0.2	N/A
2	Macao, China	0.3	0.3
3	Liechtenstein	0.4	N/A
4	Hong Kong, China	0.4	0.3
5	United Arab Emirates	0.4	0.4
6	Singapore	0.5	0.4
7	Luxembourg	0.5	0.5
8	Norway	0.5	0.5
9	Iceland	0.5	0.7
10	Denmark	0.6	0.5
96	Brazil	4.8	6.8
97	Ecuador	4.8	N/A
98	St. Lucia	4.9	6.5
99	South Africa	5.3	4.5
100	El Salvador	5.3	5.5
101	Moldova	5.4	10.8
102	Armenia	5.9	7.0
103	Dominica	6.0	6.6
104	Paraguay	6.1	10.2
105	Indonesia	6.7	7.2

Table 6. ICT PB ranking

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### Global ICT PB dynamic 2010 - 2008

2010 Rank	Country	IPB 2010	IPB 2008	Relative change 2008-2010 (%)	Value change 2008-2010
53	Azerbaijan	1.8	9.9	81.7	-8.1
79	Bhutan	3.6	14.7	75.4	-11.1
63	Sri Lanka	2.4	7.3	67.4	-4.9
120	Bangladesh	12.6	36.4	65.2	-23.7
48	Venezuela	1.6	4.3	62.9	-2.7
112	Guyana	8.5	17.7	51.6	-9.1
135	Uganda	30.2	61.8	51.1	-31.6
11	Austria	0.6	1.1	50.4	-0.6
101	Moldova	5.4	10.8	49.8	-5.4
136	Tanzania	31.4	57.0	44.9	-25.6

Table 7. Top 10 countries by greatest ICT PB decrease

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### Benchmarking Moldova

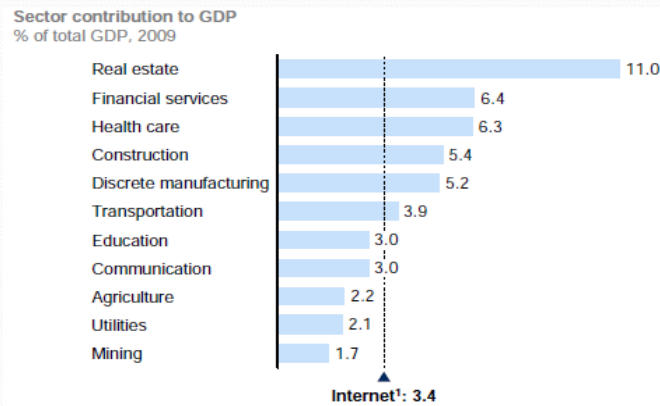
- **ICT Development Index - 57<sup>th</sup> (2010)**
- **ICT Price basket – 101<sup>st</sup> (2010)**
- **Global Internet speed ( Sep. 2011):**
  - a) **Household download Index - 13<sup>th</sup> (17Mbps)**
  - b) **Household upload Index - 9<sup>th</sup> (11Mbps)**

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## Final remark

If Internet was a sector, it would have a greater weight in GDP than agriculture or education



1 Internet share includes parts of other sectors (e.g., communication).  
SOURCE: Organisation for Economic Cooperation and Development; McKinsey analysis

Figure 8. Internet weight in GDP

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## Conclusions

- In order to keep sustainable development of Broadband technologies Government should play a role of matchmaker between supply and demand
- BB technologies create new business opportunities and offer innovative value added services
- The most critical factors for sustainable development of Broadband technologies are low price, high bandwidth, good coverage, diversified content.
- It is necessary to invest more in R&D projects to catch up with developed countries
- ICT Public awareness programs should be promoted because ICT is a key enabler towards knowledge based society

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***Thank you for your attention!***

