What are the reasons behind Armenia NRI low figures?

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ABSTRACT

This paper analyzes Armenia NRI figures published by the WEF and concludes on the reasons of that.

Keywords

WEF, NRI , indices, information society.

Out of many types of indices (DAI, ICT -OI, IDI, DOI, NRI) characterizing country advance on the road to the Information Society the **Networked Readiness Index** (NRI) is probably the most informative. NRI considers not only ICT infrastructure but many other parameters including business environment, government, regulation etc.

The latest 2009 report of the World Economic Forum (WEF) [1] ranked Armenia 114 (out of 134 countries) that is the several steps behind the previous year:

Networked Readiness Index

Year	Total number of countries	Armenia rank
2008–2009	134	114
2007–2008	127	106
2006–2007	122	96

Naturally the rank causes the anxiety of the people responsible for the country advance moreover the IT development was pronounced the priority of the industry. Let's try to analyze the reasons of these low figures.

NRI index is a composite of Environment, Readiness and Usage component subindices. Environment component subindex is in its turn a composite of Market environment, Political and Regulatory environment and Infrastructure environment indices (Table 1).

Table 1: Environment component subindex

Environment subindex	Market environment	Political and Regulatory environment	Infrastructure environment
Rank	Rank	Rank	Rank
109	120	116	86

The rank (109) is low because of Market (120) as well as Political and Regulatory environment (116).

Market environment   120

NN	Name of parameter	Rank
1.01	Venture capital availability	130
1.02	Financial market sophistication	107
1.03	Availability of latest technologies	116
1.04	State of cluster development	130
1.05	Utility patents, 2007	65
1.06	High-tech exports, 2006	88
1.07	Burden of government regulation	71
1.08	Extent and effect of taxation	84
1.09	Total tax rate, 2007	52
1.10	Time required to start a business, 2008	54
1.11	No. of procedures required to start a business, 2008	75
1.12	Intensity of local competition	132
1.13	Freedom of the press	130
1.14	Accessibility of digital content	101

Analyzing Market Environment (120) we see the reason of the low figure. It is obviously venture capital availability (130), financial market sophistication (107), availability of latest technologies (116), state of cluster development (130), intensity of local competition (132), freedom of the press (130) and accessibility of digital content (101). While some parameters are within the competence of the state bodes the problems with others like venture capital availability, availability of latest technologies, intensity of local competition and accessibility of digital content are known to the wide community.

Political and regulatory environment116

NN	Name of parameter	Rank
2.01	Effectiveness of law-making bodies	95
2.02	Laws relating to ICT	105
2.03	Judicial independence	123
2.04	Intellectual property protection	108
2.05	Efficiency of legal framework	97
2.06	Property rights	69
2.07	Quality of competition in the ISP sector	127
2.08	Number of procedures to enforce a contract, 2008	123
2.09	Time to enforce a contract, 2008	13

The reason of low rank of the Political and regulatory environment (116) are: laws relating to ICT (105), judicial independence (123), intellectual property protection (108), efficiency of legal framework (97), quality of competition in the ISP sector (127), number of procedures to enforce a contract (123). These problems are known to the community and can hardly be disputed.

Infrastructure environment   86

NN	Name of parameter	Rank
3.01	Number of telephone lines, 2005	66
3.02	Secure Internet servers, 2007	83
3.03	Electricity production, 2005	76
3.04	Availability of scientists and engineers	80
3.05	Quality of scientific research institutions	101
3.06	Tertiary enrollment, 2006	65
3.07	Education expenditure, 2006	97

Two parameters are obviously low in the Infrastructure environment: Quality of scientific research institutions (101) and Education expenditure (97). We can only agree with these estimations of the WEF.

Now let's analyze the Readiness component subindex (Table 2).

Table 2: Readiness component subindex

Readiness subindex	Individual readiness	Business readiness	Government readiness
Rank	Rank	Rank	Rank
111	109	111	116

All component ranks of the subindex are low.

Individual readiness   109

NN	Name of parameter	Rank
4.01	Quality of math and science education	76
4.02	Quality of the educational system	98
4.03	Internet access in schools	103
4.04	Buyer sophistication	88
4.05	Residential telephone connection charge, 2007	75
4.06	Residential monthly telephone subscription, 2007	73
4.07	High-speed monthly broadband subscription, 2006	107
4.08	Lowest cost of broadband, 2006	112
4.09	Cost of mobile telephone call, 2005	76

Individual readiness is low because of the quality of the educational system (98), Internet access in schools (103), high-speed monthly broadband subscription (107), and lowest cost of broadband (112). These drawbacks are well known to the community.

Business readiness   111

NN	Name of parameter	Rank

5.01	Extent of staff training	117
5.02	Local availability of research and training services	125
5.03	Quality of management schools	124
5.04	Company spending on R&D	96
5.05	University-industry research collaboration	116
5.06	Business telephone connection charge, 2007	77
5.07	Business monthly telephone subscription, 2007	105
5.08	Local supplier quality	111
5.09	Local supplier quantity	114
5.10	Computer, comm., and other services imports,2007	111

Government readiness 116

NN	Name of parameter	Rank
6.01	Government prioritization of ICT	120
6.02	Gov't procurement of advanced tech products	122
6.03	Importance of ICT to government vision of the future	116
6.04	E-Government Readiness Index, 2008	91

Nearly all the components of the business as well as government readiness are bad.

Now let's analyze the Usage component subindex (Table 3).

Table 3: Usage component subindex

Usage component subindex	Individual usage	Business usage	Government usage
Rank	Rank	Rank	Rank
120	108	111	125

All component ranks of the subindex are low but can be disputed.

Individual usage   108

7.01	Mobile telephone subscribers, 2005	126
7.02	Personal computers, 2005	60
7.03	Broadband Internet subscribers, 2005	103
7.04	Internet users, 2006	105
7.05	Internet bandwidth	n/a

Most of these figures are old. The reality is much better. Since 2005 mobile telephone subscribers number in Armenia increased dramatically and now is about 2.5 mln. The same concerns broadband Internet subscribers. Since Beeline introduced its HiLine service this number is greatly increased. Number of Internet users is estimated by ITU as 6.2% of population. The figure is disputed by government officials who claim it to be 20% of population. However it is difficult to tell for sure as no surveys were carried in Armenia. Internet bandwidth according to experts had already reached 1.5Gb, which is also a great leap forward.

Business usage   111

8.01	Prevalence of foreign technology licensing	125
8.02	Firm-level technology absorption	109
8.03	Capacity for innovation	68
8.04	Availability of new telephone lines	110
8.05	Extent of business Internet use	116

The business usage rank (111) is low because of the low ranks of the following parameters: prevalence of foreign technology licensing (125), firm-level technology absorption (109) and extent of business Internet use (116). These ranks can not be disputed. It is obvious that the extent of business Internet use is low as e-commerce penetration, internet banking, number of business web sites and the usage of Internet in business are at its early stage.

Government usage   125

9.01	Government success in ICT promotion	119
9.02	Availability of government on line services	129
9.03	ICT use and government efficiency	127
9.04	Presence of ICT in government offices	94
9.05	E-Participation Index, 2008	105

The business usage rank (111) is low because of the low ranks of the following parameters:
government success in ICT promotion (119), availability of government on line services (129), ICT use and government efficiency (127), E-Participation Index (105). These ranks can not be disputed.

As it might be seen from tables some of parameters are dated years 2005, 2006 and 2007. Today the picture is obviously better. World Economic Forum used the old data because they had no fresh figures. Country statistical services must be proactive in supplying the world economic community with up-to-date figures.

Conclusion:
In order to improve Armenia NRI index it is necessary:
- Make venture capital available,
- Decrease financial market sophistication
- Make latest technologies available
- Increase the intensity of local competition
- Improve freedom of the press
- Improve accessibility of digital content
- Improve laws relating to ICT
- Improve judicial independence
- Improve intellectual property protection
- Improve the efficiency of legal framework
- Improve the quality of competition in the ISP sector
- Decrease the number of procedures to enforce a contract
- Improve the quality of scientific research institutions
- Increase education expenditures
- Improve the quality of the educational system,
- Expand Internet access in schools
- Decrease the cost of broadband
- Expand high-speed monthly broadband subscription
- Improve business and government readiness
- Expand business Internet use
- Improve firm-level technology absorption

- Increase government efforts in ICT promotion
- Make government on line services available
- Improve government efficiency in ICT use
- Improve the presence of ICT in government offices
- Improve e-participation index

REFERENCES

[1] The Global Information Technology Report 2008–2009, Mobility in a Networked World Soumitra Dutta, INSEAD, Irene Mia, World Economic Forum