



# Regulatory Challenges in the Internet space in Bosnia and Herzegovina

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RIPE NCC SEE 8

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# Agenda

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- Introduction: Communications Regulatory Agency BH
- Overview of Electronic Communications Market
- Internet
  - Number of Internet Service Providers per years
  - Internet Penetration
  - Internet Subscribers by Dana Rate
  - Internet Subscribers by Access Network
  - Map of Fixed Broadband Penetration
  - The most common types of internet usage
- Conclusion



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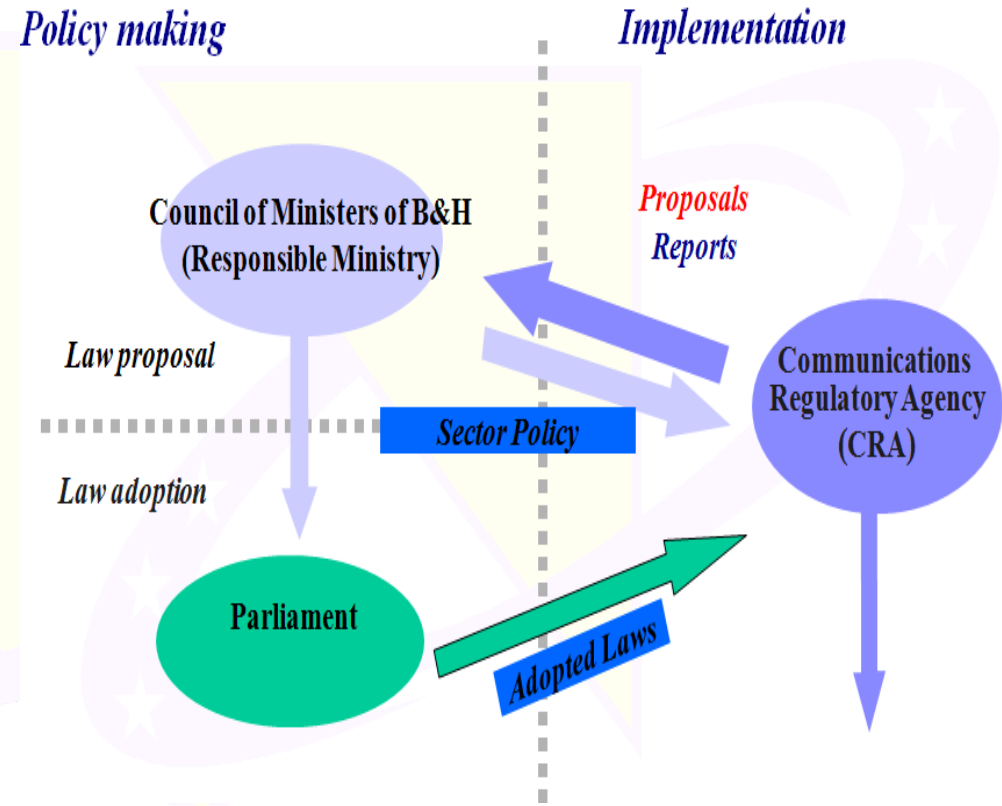
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# Introduction: CRA BH

- ❑ Communications Regulatory Agency established in 2001, combining competencies in broadcasting and telecommunications, performs regulatory tasks in accordance with principles set by the Law on Communications and Telecommunications Policy Sector.
- ❑ Council of Ministers of BiH is responsible for developing and adopting telecommunications sector policy.
- ❑ Law on Communications („Official Gazette of BiH“ 33/02, 31/03, 75/06, 32/10, 98/12).
- ❑ Electronic Communications Sector Policy of Bosnia and Herzegovina for the 2017-2021 period





# Electronic Communications Market in BiH

<b>Operators</b>	<b>Number</b>
<b>Fixed Telephony</b>	<b>3</b>
<b>GSM/UMTS/Mobile Telephony</b>	<b>3</b>
<b>Public Fixed Telephone Operators</b>	<b>12</b>
<b>Public Electronic Communication Networks Operators</b>	<b>75</b>
<b>Internet Service Providers</b>	<b>67</b>
<b>Registered providers of mobile telephone services</b>	<b>5</b>

<b>Year</b>	<b>2011.</b>	<b>2012.</b>	<b>2013.</b>	<b>2014.</b>	<b>2015.</b>	<b>2016.</b>	<b>2017.</b>	<b>2018.</b>
<b>Number of ISPs</b>	80	75	69	70	70	71	70	67





# Mobile Internet

<b>Number of users – mobile data</b>	<b>Prepaid</b>	<b>Postpaid</b>	<b>Total</b>
2G (GPRS and EDGE)	286,097	207,338	493,435
3G (UMTS, HSDPA, HSUPA)	1,060,216	584,922	1,645,138
PC card access	1,729	265,446	267,175

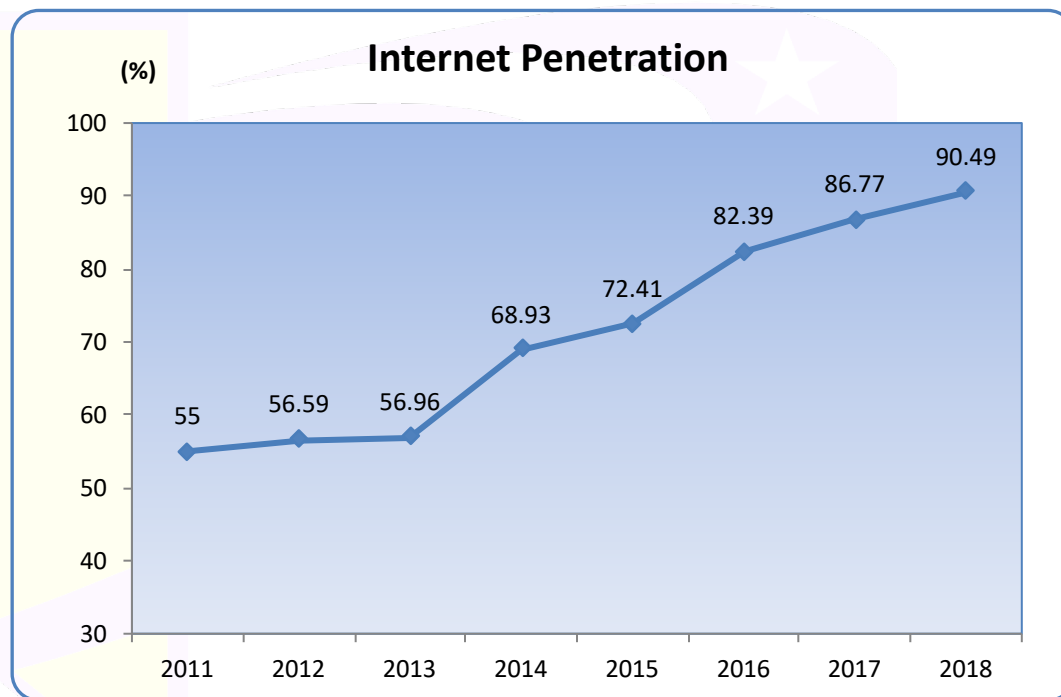
<b>Description</b>	<b>Prepaid</b>	<b>Postpaid</b>	<b>Total</b>
The amount of mobile data transferred (GB)	7,583,186	5,637,766	13,272,889





# Internet Penetration

Year	Number of Internet subscribers	Index
2011.	2.113.100	105,66
2012.	2.174.250	102,89
2013.	2.188.429	100,65
2014.	2.648.176	121,01
2015.	2.782.107	105,06
2016.	2.909.236	104,57
2017.	3.064.072	105,32
2018.	3.195.294	104,28



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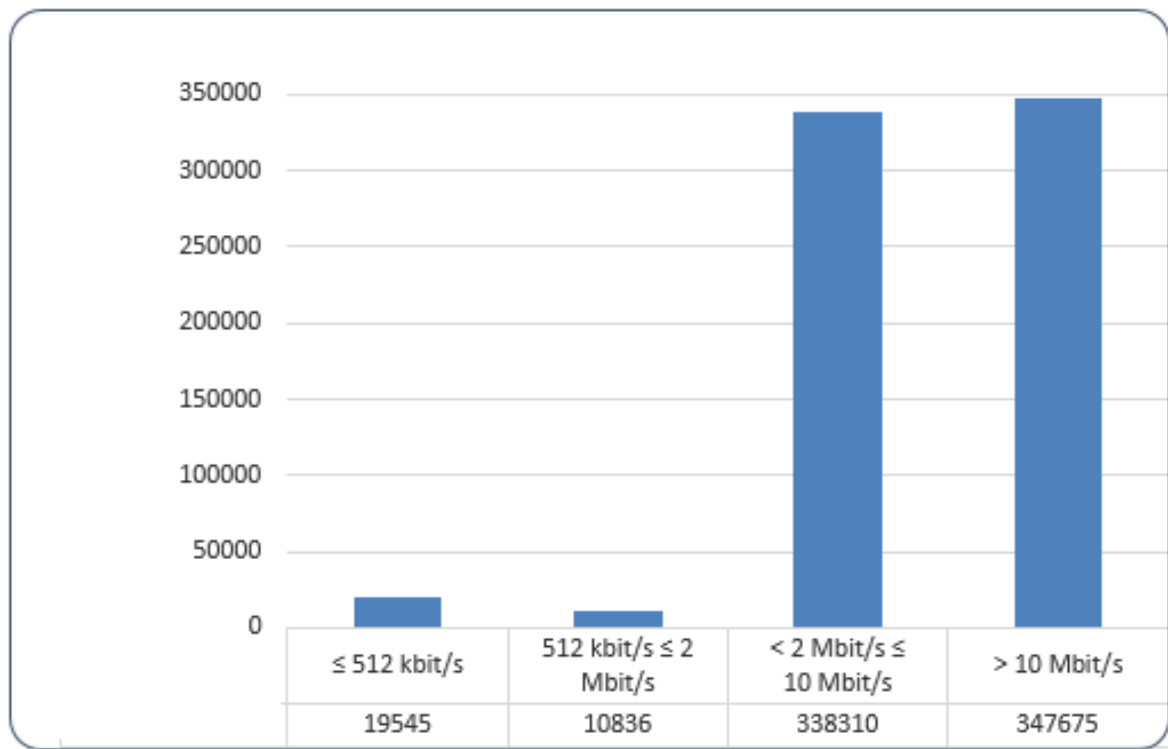
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# Internet Subscribers by Data Rate



■ Number of suscribers



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# Internet Subscribers Access

<u>Year</u>	<u>Dial-up</u>	<u>FWA</u>	<u>Cable</u>	<u>ADSL</u>	<u>Leased Line</u>	<u>FTTH</u>	<u>Other</u>	<u>Total</u>
<b>2011.</b>	85.046	65.733	114.849	248.006	1.374	27 8	10	<b>515.296</b>
<b>2012.</b>	84.314	62.621	127.424	277.295	1.389	315	353	<b>553.711</b>
<b>2013.</b>	3.219	65.164	153.544	294.505	1.435	297	498	<b>518.662</b>
<b>2014.<sup>1</sup></b>	2.304	61.367	181.753	360.772	1.318	374	348	<b>608.236</b>
<b>2015.</b>	1.739	59.326	200.972	372.767	1.254	428	240	<b>636.726</b>
<b>2016.</b>	1.447	61.019	213.640	385.316	1.233	960	170	<b>663.775</b>
<b>2017.</b>	231	65.335	234.006	398.136	1.144	1.363	363	<b>700.578</b>
<b>2018.</b>	319	47.367	244.728	404.795	1.031	17.511	934	<b>716.685</b>







# Internet Subscribers by Access

□ The annual survey of CRA licensees for providing ISP services in Bosnia and Herzegovina applies to the entire territory of Bosnia and Herzegovina. To collect a larger volume of data and gain a clearer picture of the state of the ISP market in Bosnia and Herzegovina, some cities are grouped into "regions", which are some of bigger BiH cities. In this way, the survey included 10 cantons in the Federation of Bosnia and Herzegovina, 10 major cities / regions in the Republic of Srpska and Brcko District.

Mr. grupa	Kanton	%	Mr. grupa	Region	%
030	Srednjobosanski	18,51	049	Distrikt Brčko	18,32
031	Posavski	14,66	050	Mrkonjić Grad	14,11
032	Zeničko-dobojski	20,38	051	Banja Luka	23,07
033	Sarajevo	30,92	052	Prijedor	16,90
034	Kanton 10	12,72	053	Doboj	20,04
035	Tuzlanski	19,98	054	Šamac	3,94
036	Hercegovačko-neretvanski	22,87	055	Bijeljina	12,38
037	Unsko-sanski	17,65	056	Zvornik	12,53
038	Bosansko-podrinjski	19,66	057	Istočno Sarajevo	23,49
039	Zapadnohercegovački	15,80	058	Foča	14,82
			059	Trebinje	19,61

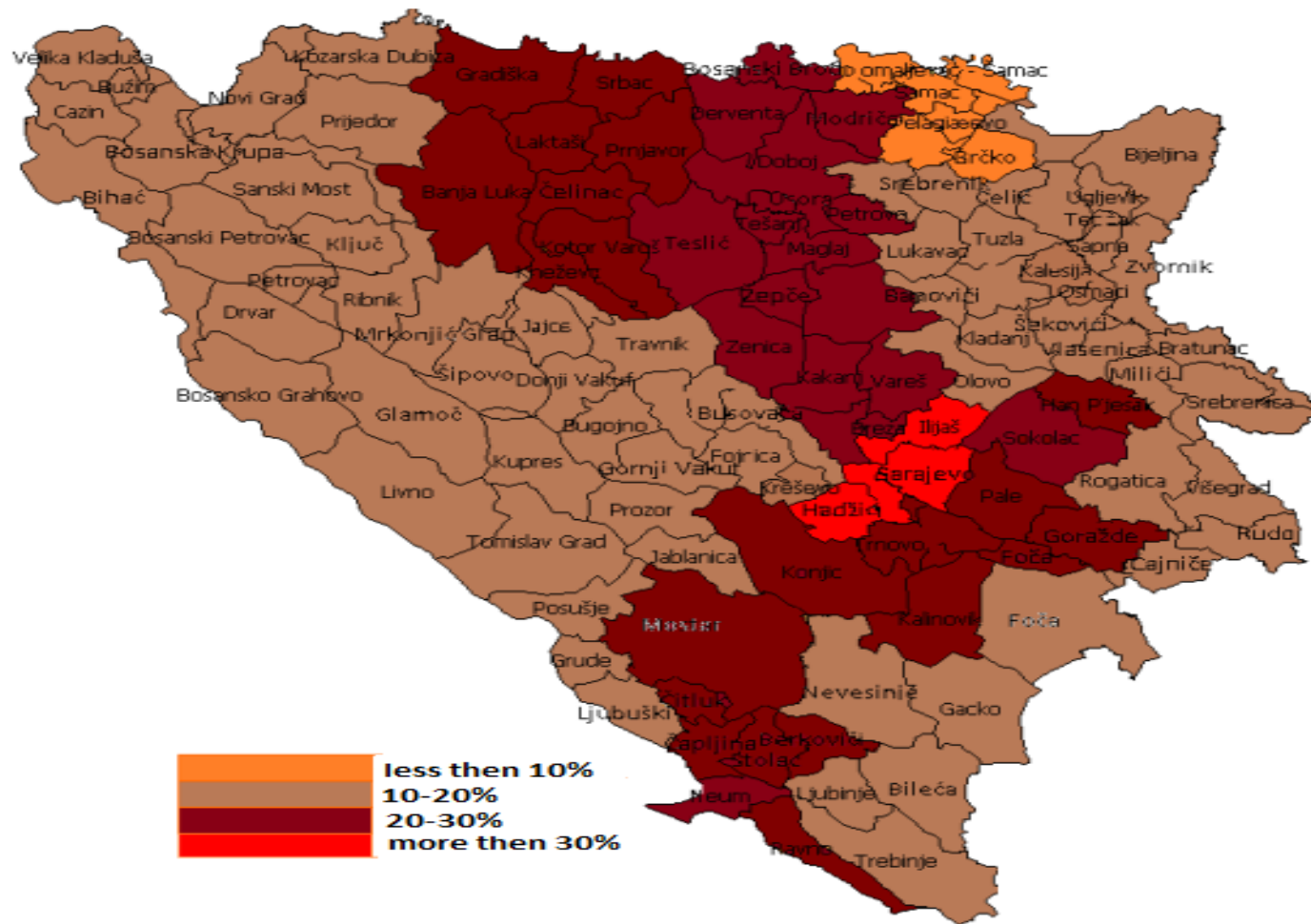




# Map of Fixed Broadband Penetration

Penetration of broadband access.

☐ Penetration is calculated as the ratio of the total number of broadband connections and the total estimated number of people in the observed region.



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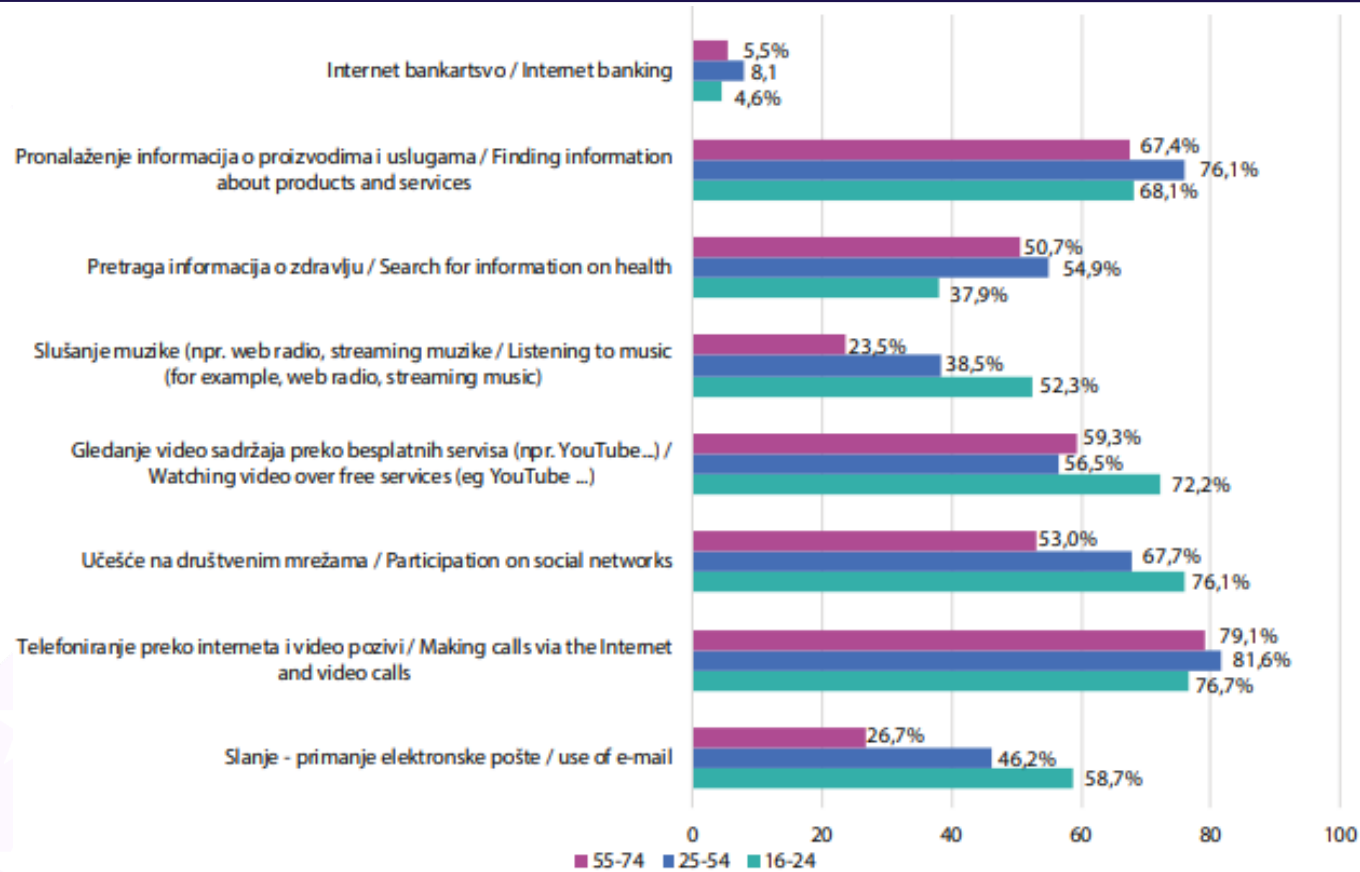
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# Internet Usage, by Age



Source: Agency for Statistics of Bosnia and Herzegovina

[http://bhas.gov.ba/data/Publikacije/Bilteni/2019/IKT\\_00\\_TB\\_2018\\_0\\_HR.pdf](http://bhas.gov.ba/data/Publikacije/Bilteni/2019/IKT_00_TB_2018_0_HR.pdf)



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# Conclusion

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- Future Directions of Internet
- Smart Services and Applications: e.g. Smart Cities
- Permanent Roaming
- IPv6
- Regulatory framework for ISP, Domains, IP addresses
- Cooperation between BEREC and RIPE
- Content regulatory framework: Fake News, Hate Speech...
- International Cross-border cooperation



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Thank you

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