MOBILE ADVERTISING FORECASTS
2016

Zenith
The ROI Agency

Mobile Advertising Forecasts 2016

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About Zenith

Zenith is The ROI Agency. The first agency to apply a rigorous and objective approach to improving the effectiveness of marketing spend, Zenith transforms businesses and brands through evidence-led thinking. Zenith is part of Publicis Media, one of four solution hubs within Publicis Groupe [Euronext Paris FR0000130577, CAC40], and has offices within Publicis One. As a leading global media services network, Zenith has over 5000 people working across 95 markets. Supported by Publicis Media's Global Practices, Zenith offers its clients a full range of integrated skills across communications planning, value optimisation, performance media, content creation and data & analytics. We work with some of the world's leading global brands including Aviva, Coty, Kering, Lactalis, L'Oréal, LVMH, Nestlé, Nomad Foods, Oracle, RB, SCA, Sanofi, Toyota and 21st Century Fox.

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INTRODUCTION

We are pleased to introduce the first edition of Zenith's *Mobile Advertising Forecasts*, which is intended to gather all the information we have on mobile advertising and technology in one place, emphasising its scale and importance.

This first edition looks at mobile advertising and mobile technology in 60 key countries around the world. It forecasts the rising amount of time consumers devote to mobile internet use, the spread of smartphones and tablets, and the growth of mobile adspend, and provides commentaries on the state of mobile advertising.

Spain, Hong Kong and China lead mobile internet consumption
Mobile devices will account for 75% of global internet use next year. The mobile proportion of internet use has increased rapidly, from 40% in 2012 to 68% in 2016, and we forecast it to reach 79% by 2018.

The countries with the highest levels of mobile internet consumption are dispersed across Western Europe, Asia and North America. Mobile internet accounts for the highest proportion of total internet use in Spain, where we estimate it will account for 85% of internet use in 2016. Hong Kong comes second, with 79% of internet use being mobile, followed by China (76%) and the United States (74%). Italy and India come joint fifth, at 73% each.

By 2018 we expect Hong Kong to have the highest mobile internet use, accounting for 89% of total internet use. China will be second with 87% and Spain third with 86%, followed by the United States and Italy at 83% each, and India at 82%.

Smartphone penetration increases 2.4 times between 2012 and 2016
The increase in mobile internet use is being driven by the rapid rise in the penetration of mobile devices. In 2012 just 23% of people in our 60 markets had a smartphone, and 4% had a tablet. Smartphone penetration has now reached 56%, and increase of 2.4 times over four years, and we forecast it to rise to 63% by 2018. Tablets are more of a luxury item and have not spread nearly so widely: they are owned by 15% of people in our 60 markets now, and we expect them reach 17% penetration in 2018.

Smartphones are most common in Western Europe and Asia
The highest levels of smartphone penetration are concentrated in Western Europe and Asia. We estimate that Ireland has the highest smartphone penetration this year, at 92%, followed by Singapore (91%), Spain (88%), Norway (86%) and South Korea (84%). We forecast Ireland to remain in first place in 2018, with 94% penetration, followed by Switzerland and Singapore at 92% each, and Norway and Taiwan at 91% each.

Tablet penetration varies extremely widely between markets. In 10 of our 60 markets tablets have penetration levels above 50%, and in another 10 they have penetration levels below 10%. Just 3% of people in China have tablets, which drags down the average substantially, since China accounts for 27% of the population in these 60 markets. In China, which accounts for another 26%, 6% of people have tablets. The highest level of tablet penetration is in Singapore (at 75%), and the lowest is in China and Thailand (3%).

60% of internet advertising will be mobile in 2018
As we stated in our Advertising Expenditure Forecasts of September 2016, mobile advertising will overtake desktop advertising in 2017, increasing its share of global internet advertising to 52% from 44% this year. In 2018 we expect mobile advertising to account for 60% of all internet advertising. That year mobile advertising expenditure will total US$134bn, which is more than will be spent on newspaper, magazine, cinema and outdoor advertising put together.

Worldwide summary

Worldwide summary

Smartphone penetration (%)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Argentina	6.2	7.1	13.0	19.0	30.8	38.9	45.1	49.8	54.2
Armenia	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	22.0
Australia	32.0	48.0	55.0	60.5	65.9	71.9	83.0	86.0	89.0
Austria	20.0	26.0	37.0	48.0	58.0	66.0	74.0	80.0	84.0
Belarus	-	-	-	-	-	54.4	57.0	58.5	60.0
Belgium	-	-	-	-	-	-	-	-	-
Bosnia-Herzegovina	11.0	13.9	16.8	18.5	22.0	27.6	35.0	37.0	39.5
Brazil	10.0	14.0	18.2	23.3	31.4	36.2	41.6	47.8	55.0
Bulgaria	-	-	-	28.0	33.0	48.0	53.0	-	-
Canada	17.7	24.3	34.5	39.4	50.2	55.7	59.9	62.8	64.6
Chile	8.4	18.2	28.5	36.1	50.2	57.3	63.6	69.3	71.4
China	-	-	23.9	51.0	58.4	69.9	75.5	79.0	82.0
Colombia	5.6	11.6	14.5	24.8	35.0	57.0	65.6	75.4	86.7
Costa Rica	-	6.0	16.0	26.0	36.0	46.0	56.0	66.0	76.0
Czech Republic	10.0	18.0	27.0	32.0	37.0	43.0	50.0	55.0	60.0
Denmark	28.0	30.0	45.0	48.0	59.0	67.0	75.0	80.0	85.0
Ecuador	-	8.4	15.4	25.2	39.0	45.0	50.0	55.0	66.0
Estonia	6.4	9.1	10.3	17.2	25.0	48.0	55.0	60.0	66.0
Finland	-	42.0	49.0	55.0	65.0	67.0	73.0	75.0	80.0
France	12.8	18.0	25.1	33.2	42.7	49.2	55.3	61.2	65.4
Germany	12.6	23.0	32.0	40.5	56.0	64.5	71.7	77.3	81.3
Greece	-	-	30.0	38.0	48.0	57.0	62.0	66.0	70.0
Hong Kong	30.0	45.0	58.0	62.8	67.8	72.9	78.0	83.1	88.2
Hungary	5.0	17.0	23.0	26.8	39.0	44.1	51.5	55.6	58.4
India	-	-	12.0	20.5	29.0	33.0	36.0	38.0	40.0
Ireland	-	35.0	50.0	71.0	83.0	90.0	92.0	93.0	94.0
Israel	38.5	42.2	48.5	57.0	62.0	67.0	70.0	72.0	74.2
Italy	13.0	24.0	31.4	41.0	48.9	57.0	61.8	64.9	67.9
Japan	9.7	29.3	49.5	62.6	72.5	77.3	80.0	82.4	84.2
Latvia	-	-	12.0	19.0	27.0	47.0	55.0	60.0	64.0
Lithuania	-	13.6	17.0	28.8	35.1	44.7	47.6	51.0	59.0
Malaysia	-	-	-	-	-	68.0	-	-	-
Mexico	12.7	21.1	33.8	42.7	52.0	57.9	62.5	66.0	68.8
Netherlands	32.0	44.0	57.2	67.0	70.4	73.2	74.6	76.0	77.1
New Zealand	9.9	41.2	45.1	50.0	60.0	70.0	73.5	77.2	81.0
Norway	33.0	54.0	66.0	72.2	81.0	83.4	85.9	88.5	91.2
Pakistan	1.7	2.5	3.5	5.0	9.0	11.0	12.0	13.0	14.0
Panama	-	-	1.0	11.0	21.0	31.0	41.0	51.0	61.0
Peru	-	-	-	-	-	26.1	-	-	-
Philippines	-	4.1	4.2	9.0	18.7	24.5	37.3	46.6	58.3
Poland	-	-	-	22.6	30.4	37.7	43.3	48.5	52.3
Portugal	-	-	-	31.4	40.9	52.0	62.4	68.6	75.5
Romania	-	-	-	-	-	-	-	-	-
Russia	-	-	-	27.3	39.0	42.9	46.6	50.4	54.2
Serbia	19.0	24.0	29.0	32.0	38.0	47.7	60.4	65.5	68.0
Singapore	70.0	72.0	79.5	87.0	89.0	90.0	90.5	91.0	91.5
Slovakia	-	-	-	29.3	32.4	44.7	50.0	52.0	55.0
Slovenia	-	-	23.0	32.0	44.0	55.0	60.0	64.0	67.0
South Africa	11.2	15.8	21.9	37.2	47.8	51.1	61.9	70.8	79.7
South Korea	14.5	42.5	60.0	79.7	82.3	83.0	83.5	83.9	84.2
Spain	37.6	51.0	65.8	78.2	86.7	87.0	87.5	88.0	88.5
Sweden	36.0	52.0	56.2	65.0	72.0	75.1	78.8	81.2	82.0
Switzerland	-	34.0	43.0	54.0	65.0	70.0	78.0	86.0	92.0
Taiwan	7.6	15.0	27.4	45.3	62.8	74.5	83.0	88.0	91.0
Thailand	-	-	-	-	28.2	44.4	48.0	50.0	54.0
Turkey	21.3	25.5	26.1	29.6	42.0	59.0	64.0	68.0	73.0
Ukraine	-	6.7	12.6	17.5	25.2	27.0	30.0	32.0	34.0
United Kingdom	23.0	31.0	41.0	43.0	49.0	55.0	60.0	65.0	69.0
United States of America	-	33.5	45.8	46.3	53.6	59.3	63.9	67.3	69.6
Venezuela	-	-	-	-	36.0	45.0	46.0	46.0	46.0

Tablet penetration (%)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Argentina	-	-	0.8	1.8	3.1	4.7	5.4	6.1	6.6
Armenia	4.0	4.0	5.0	7.0	9.0	12.0	14.0	16.0	18.0
Australia	3.9	13.0	15.3	33.0	41.0	45.1	48.2	51.5	54.1
Austria	2.0	5.0	10.0	17.0	27.0	34.0	38.0	42.0	45.0
Belarus	-	-	-	-	-	-	-	-	-
Belgium	-	-	-	-	-	-	-	-	-
Bosnia-Herzegovina	-	-	0.5	1.0	2.0	3.0	4.5	6.8	10.1
Brazil	0.1	0.6	2.0	4.9	6.0	6.9	7.9	8.6	9.3
Bulgaria	-	-	-	8.0	15.0	22.0	26.0	-	-
Canada	-	6.0	15.0	22.5	42.0	48.2	52.0	55.6	57.4
Chile	-	-	-	-	-	-	-	-	-
China	-	-	0.7	1.6	2.5	3.1	3.3	3.4	3.5
Colombia	-	0.8	3.2	11.3	19.4	25.0	26.3	27.6	28.9
Costa Rica	-	-	-	-	-	-	-	-	-
Czech Republic	0.1	1.0	2.6	10.0	19.0	27.0	30.5	34.0	38.0
Denmark	-	-	-	47.0	55.0	60.0	62.0	63.0	70.0
Ecuador	0.0	2.0	4.0	7.0	10.0	13.0	16.0	18.0	21.0
Estonia	0.5	1.0	2.5	7.8	15.0	28.2	35.0	42.0	48.0
Finland	4.0	7.0	12.0	22.0	28.0	32.0	43.0	40.0	39.0
France	0.0	4.1	12.8	27.7	43.0	50.0	54.0	57.2	59.1
Germany	2.0	4.8	17.8	25.9	32.6	37.5	42.1	45.9	47.6
Greece	-	-	2.4	7.1	12.9	20.5	25.0	28.0	31.0
Hong Kong	1.5	4.3	15.0	23.6	29.5	33.0	36.2	42.3	45.1
Hungary	-	-	-	5.7	9.0	11.9	12.1	12.6	12.9
India	-	-	1.0	2.8	4.1	5.3	6.0	6.5	7.0
Ireland	0.0	8.0	15.0	24.0	35.0	50.0	56.0	60.0	62.5
Israel	1.0	4.6	6.9	22.0	25.0	28.0	31.0	35.0	39.2
Italy	2.4	4.9	14.9	19.6	25.3	29.0	32.0	34.8	36.9
Japan	7.2	8.5	15.3	21.9	34.2	37.4	39.5	41.1	42.0
Latvia	0.0	0.0	0.0	7.0	11.0	19.0	22.0	24.0	26.0
Lithuania	0.0	0.5	1.2	3.1	7.3	13.7	20.1	25.0	35.0
Malaysia	-	-	-	-	-	32.0	-	-	-
Mexico	2.2	5.0	15.6	25.7	37.0	39.0	39.5	40.0	40.5
Netherlands	10.0	14.0	34.0	53.0	58.3	64.1	70.5	74.0	75.0
New Zealand	-	2.8	8.6	18.8	20.7	22.8	25.0	27.6	30.3
Norway	2.0	11.0	28.6	44.2	56.8	58.5	60.3	62.1	63.9
Pakistan	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	-
Peru	-	-	3.0	4.9	9.6	10.7	-	-	-
Philippines	0.0	0.0	0.2	1.4	3.9	4.3	5.7	6.2	7.5
Poland	-	-	-	0.0	18.5	24.2	28.9	32.3	34.7
Portugal	0.0	0.0	3.8	8.8	15.1	21.1	25.4	30.4	36.5
Romania	-	-	-	-	-	-	-	-	-
Russia	-	-	-	19.2	25.3	26.7	28.2	30.1	32.2
Serbia	0.0	0.0	0.5	5.0	10.0	16.0	24.7	31.2	35.2
Singapore	4.0	8.0	17.0	47.0	64.0	70.0	75.0	78.0	81.0
Slovakia	-	-	1.7	3.7	16.0	22.2	22.5	23.0	24.0
Slovenia	-	-	7.0	15.0	15.0	17.0	19.0	20.0	21.0
South Africa	0.0	0.0	1.8	3.7	5.5	8.9	10.8	13.1	15.4
South Korea	1.0	3.1	7.5	13.9	18.2	20.2	22.0	23.6	25.0
Spain	0.0	0.0	11.9	24.7	31.8	32.0	32.3	32.5	32.8
Sweden	1.5	7.1	18.8	31.0	50.1	50.4	50.5	51.0	52.0
Switzerland	-	5.9	8.6	23.0	39.0	43.0	47.0	50.0	53.0
Taiwan	-	4.4	8.6	15.9	21.9	23.6	24.3	25.0	25.0
Thailand	-	-	-	-	3.7	3.4	2.8	3.0	3.0
Turkey	-	-	0.8	3.0	5.0	8.0	10.0	12.0	14.5
Ukraine	-	1.0	1.9	4.5	9.5	13.4	15.4	17.2	18.7
United Kingdom	3.5	9.4	20.1	29.7	39.7	51.0	58.4	62.8	65.3
United States of America	-	13.1	17.6	41.8	46.7	49.4	51.4	52.7	53.7
Venezuela	-	-	-	-	-	5.0	7.0	8.4	10.1

Worldwide summary

Mobile advertising expenditure (US$m)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Argentina	-	-	-	1	3	10	24	47	83
Armenia	-	-	-	-	-	-	-	-	-
Australia	-	-	-	-	760	1,353	1,843	2,093	2,264
Austria	13	23	26	42	86	109	134	183	201
Belarus	-	-	-	-	0	0	0	0	0
Belgium	-	-	-	-	6	7	8	9	11
Bosnia-Herzegovina	-	-	-	-	-	-	-	-	-
Brazil	-	-	-	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	-	-	-	-
Canada	36	63	125	334	706	1,200	1,368	1,573	1,778
Chile	-	-	-	-	-	-	-	-	-
China	46	165	823	2,117	4,667	14,478	23,626	32,942	43,542
Colombia	0	0	1	2	4	7	17	36	60
Costa Rica	-	-	-	-	-	-	-	-	-
Czech Republic	-	-	-	-	-	-	-	-	-
Denmark	-	4	6	12	18	26	37	53	76
Ecuador	-	0	0	1	2	2	2	2	2
Estonia	0	0	0	0	1	1	1	1	2
Finland	-	-	-	-	-	54	63	78	93
France	58	124	162	254	493	813	1,202	1,627	2,102
Germany	-	-	-	98	149	232	352	536	817
Greece	-	-	1	1	8	11	17	17	19
Hong Kong	-	-	-	-	-	-	-	-	-
Hungary	-	1	3	6	14	28	40	52	65
India	-	-	16	41	58	82	102	139	166
Ireland	-	-	-	40	55	98	137	181	236
Israel	-	-	-	13	16	19	23	25	27
Italy	-	-	-	252	389	597	879	1,142	1,428
Japan	-	-	866	2,231	3,637	5,187	6,312	7,258	8,027
Latvia	-	-	-	-	-	-	-	-	-
Lithuania	-	0	1	1	2	2	2	3	4
Malaysia	-	-	-	-	72	79	82	96	105
Mexico	1	1	3	6	13	23	34	48	62
Netherlands	-	-	-	-	-	-	-	-	-
New Zealand	-	0	22	33	99	128	150	183	216
Norway	-	-	10	44	67	149	191	226	257
Pakistan	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	-
Peru	-	-	-	-	-	-	-	-	-
Philippines	-	-	-	-	-	-	-	-	-
Poland	-	-	-	-	-	81	105	137	147
Portugal	-	-	-	-	-	-	-	-	-
Romania	0	0	0	0	1	1	2	2	2
Russia	-	-	-	-	-	-	-	-	-
Serbia	0	0	0	1	1	2	3	5	10
Singapore	-	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	1	1	1	2	2	2
South Africa	-	-	-	-	-	-	-	-	-
South Korea	-	-	-	-	-	-	-	-	-
Spain	-	-	-	44	48	79	98	112	128
Sweden	7	22	61	128	139	227	377	534	558
Switzerland	-	-	-	-	-	-	-	-	-
Taiwan	-	-	19	35	72	154	282	439	595
Thailand	-	-	1	2	3	3	3	4	4
Turkey	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-
United Kingdom	-	301	792	1,536	2,455	3,976	7,411	9,408	11,161
United States of America	-	1,513	3,463	6,250	10,851	18,439	25,361	33,649	44,699
Venezuela	-	-	-	-	-	-	-	-	-

Mobile share of total internet consumption (%)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Argentina	-	-	-	-	-	-	-	-	-
Armenia	-	-	-	-	-	-	-	-	-
Australia	-	-	-	35	54	65	69	72	75
Austria	-	-	-	-	-	43	46	50	51
Belarus	-	-	-	-	-	-	-	-	-
Belgium	-	-	-	-	-	-	-	-	-
Bosnia-Herzegovina	-	-	-	-	-	-	-	-	-
Brazil	-	-	-	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	28	35	40	46
Canada	-	-	31	34	49	53	58	61	64
Chile	-	-	-	-	-	-	-	-	-
China	-	-	38	40	45	64	76	82	87
Colombia	3	5	8	10	21	45	58	70	74
Costa Rica	-	-	-	-	-	-	-	-	-
Czech Republic	-	-	-	-	-	-	-	-	-
Denmark	29	30	31	32	37	40	42	43	45
Ecuador	20	30	40	40	60	66	71	73	74
Estonia	10	15	23	33	38	36	41	46	53
Finland	-	-	-	-	-	24	26	28	32
France	4	9	14	18	22	28	34	40	46
Germany	5	13	24	38	52	56	63	67	68
Greece	-	-	-	-	-	-	-	-	-
Hong Kong	-	-	-	57	66	73	79	85	89
Hungary	-	-	-	-	-	-	-	-	-
India	11	43	47	39	53	66	73	78	82
Ireland	-	-	-	-	-	-	-	-	-
Israel	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	63	70	73	78	83
Japan	-	38	40	43	40	42	46	51	54
Latvia	-	-	-	-	19	21	22	22	23
Lithuania	-	-	5	6	23	28	38	40	43
Malaysia	-	-	-	-	-	-	-	-	-
Mexico	60	61	62	62	61	61	62	62	63
Netherlands	-	-	-	-	-	-	-	-	-
New Zealand	-	-	-	-	-	-	57	-	-
Norway	-	-	-	-	-	-	-	-	-
Pakistan	-	-	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	-
Peru	-	-	-	-	-	-	-	-	-
Philippines	-	-	-	-	-	-	-	-	-
Poland	-	-	-	-	-	-	32	38	48
Portugal	-	-	-	-	-	-	-	-	-
Romania	-	-	-	-	-	-	-	-	-
Russia	-	-	-	-	-	-	-	-	-
Serbia	-	-	-	-	-	-	-	-	-
Singapore	-	-	-	-	33	33	35	39	43
Slovakia	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	-	-	-	-	-	-
South Africa	-	-	-	-	-	-	-	-	-
South Korea	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	-	-	85	86	86
Sweden	-	-	-	-	43	47	48	45	43
Switzerland	-	-	-	-	-	37	-	-	-
Taiwan	-	-	-	38	49	56	58	60	61
Thailand	-	-	-	-	44	50	55	60	65
Turkey	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-
United Kingdom	-	-	14	30	42	44	50	57	64
United States of America	36	53	46	52	57	69	74	79	83
Venezuela	-	-	-	-	-	-	-	-	-

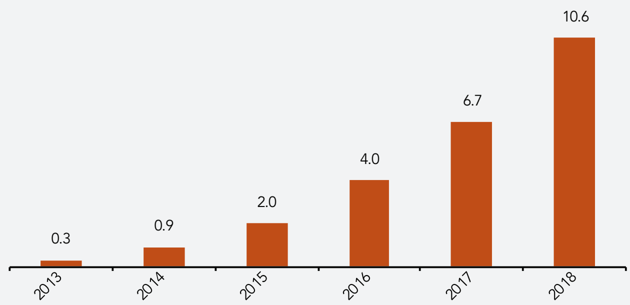
Country entries

Argentina

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	6.2	7.1	13.0	19.0	30.8	38.9	45.1	49.8	54.2
Tablet penetration (%)	-	-	0.8	1.8	3.1	4.7	5.4	6.1	6.6
Total advertising expenditure (ARS m)	12,340	16,239	20,421	26,824	37,469	56,238	77,645	100,938	131,220
% of Total adspend delivered via mobile	-	-	-	0.3	0.9	2.0	4.0	6.7	10.6
Adspend delivered via mobile devices (ARS m)	-	-	-	8.4	23.6	91.1	218.6	434.9	769.8
Mobile display	-	-	-	-	*10.6*	*41.5*	*100.6*	*202.2*	*361.0*
Mobile classified	-	-	-	-	*4.1*	*14.9*	*33.0*	*59.6*	*94.7*
Mobile search	-	-	-	-	*8.9*	*34.7*	*85.0*	*173.1*	*314.1*

Source: Kantar/Ibope - TGI Argentina (Jan/Dec 2015), CAAM, emarketer, Zenith

Mobile as % of total adspend



The main mobile service providers in Argentina are Movistar (Telefónica), Claro (América Móvil), Personal (Telecom) and Nextel.

Mobile device penetration - including feature phones - is 90%, with the highest levels found among wealthier individuals and in the 20-44 age group.

Total views via mobile devices continues to show a positive trend. Mobile devices are playing an increasingly important role in the purchasing process, and they are being used more and more to consume content that used to be exclusive to television.

Unfortunately, Argentina is currently suffering from severely restricted mobile broadband speeds, partly due to the fact the government has not yet allocated the communication spectrum that other nations have made available for broadband 3G mobile use. This means that what spectrum does exist is routinely overwhelmed and most data connections are mind-bendingly slow, which can frustrate users.

Nevertheless, as the number of people who own smartphones rises, more and more companies are taking account of mobile in their marketing strategies. In addition, advertising in the digital world doesn´t require the kind of large investment traditionally associated with other platforms. Finally, a further advantage: measurement and analysis of information based on search and data traffic are more straightforward and efficient, which plays into more effective decision-making.

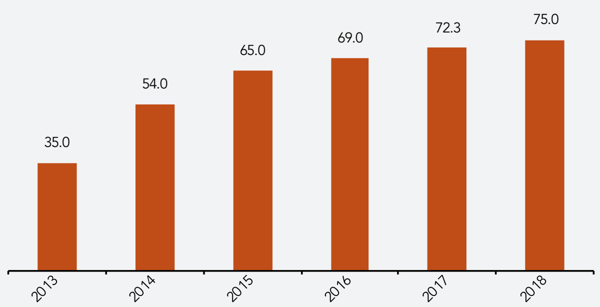
Australia

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	32.0	48.0	55.0	60.5	65.9	71.9	83.0	86.0	89.0
Tablet penetration (%)	3.9	13.0	15.3	33.0	41.0	45.1	48.2	51.5	54.1
Internet - Average daily minutes of consumption	110	120	137	145	153	159	168	177	184
Mobile internet - Average daily minutes of consumption	-	-	-	51	83	104	116	128	138
% of average daily internet consumption via mobile	-	-	-	35.0	54.0	65.0	69.0	72.3	75.0
Total advertising expenditure (A$ m)	12,434	12,378	12,376	12,662	12,946	14,155	14,611	14,977	15,345
% of programmatic adspend going to mobile*	-	-	1.0	1.2	1.8	1.6	3.0	6.0	11.6
% of Total adspend delivered via mobile	-	-	-	-	7.8	12.7	16.8	18.6	19.6
Adspend delivered via mobile devices (A$ m)	-	-	-	-	1,012	1,800	2,454	2,786	3,014
Mobile display	-	-	-	-	*410*	*827*	*1,148*	*1,168*	*1,319*
Mobile classified	-	-	-	-	*167*	*284*	*386*	*491*	*528*
Mobile search	-	-	-	-	*435*	*690*	*920*	*1,127*	*1,167*

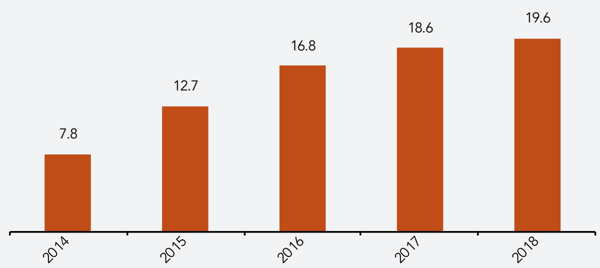
Source: Zenith

**shared Australia/New Zealand area data*

Mobile as % of daily internet consumption



Mobile as % of total adspend



Over 15 million Australians own a smartphone. Apple and Samsung continue to battle it out in fierce rivalry, collectively holding 73% of the Australian smartphone market. The major mobile service providers are Telstra, Optus, Vodafone and Virgin Mobile.

According to the latest IAB Australia and Nielsen Mobile Ratings Report, the amount of time spent on smartphones is now higher than on any other digital device, accounting for 43% of total time. Desktop usage, by contrast, was 39%, while tablet usage was 18%.

66% of Australian marketers use programmatic for mobile advertising, and expect to use mobile video in 43% of their mobile campaigns in 2016. 70% of media buyers also expect to use in-app advertising in 2016. (Source: IAB Australia and Hoop Research)

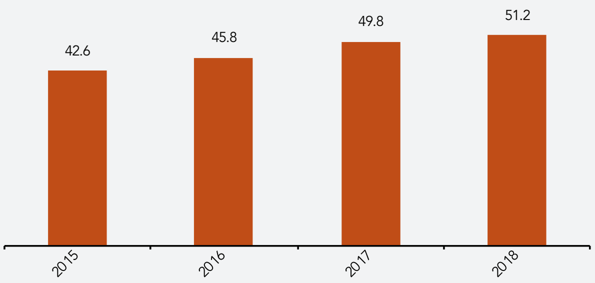
Innovation in the mobile space continues to grow at a record pace. The future of mobile will be in predictive mobile apps and services that address needs - without the user having to request them explicitly - through bots tech. Markets including China have already embraced this technology via messaging apps such as WeChat. The popularity of messaging apps combined with bots means that products, services, and functions can now be requested from within the app, therefore relying less on other apps, websites or interfaces.

Austria

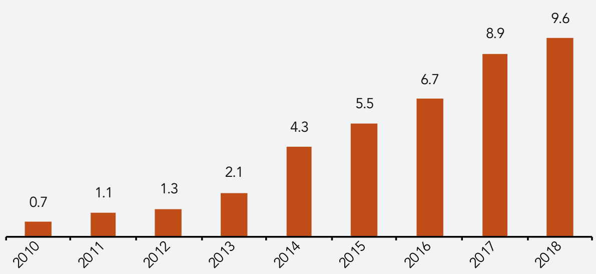
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	20.0	26.0	37.0	48.0	58.0	66.0	74.0	80.0	84.0
Tablet penetration (%)	2.0	5.0	10.0	17.0	27.0	34.0	38.0	42.0	45.0
Internet - Average daily minutes of consumption	-	-	-	-	-	188	201	203	205
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	80	92	101	105
% of average daily internet consumption via mobile	-	-	-	-	-	42.6	45.8	49.8	51.2
Total advertising expenditure (€ m)	1,688	1,810	1,789	1,793	1,786	1,801	1,820	1,851	1,888
% of programmatic adspend going to mobile	-	-	2.0	5.0	15.0	25.0	35.0	40.0	45.0
% of Total adspend delivered via mobile	0.7	1.1	1.3	2.1	4.3	5.5	6.7	8.9	9.6
Adspend delivered via mobile devices (€ m)	11	20	24	38	77	98	121	165	181
Mobile display	*5*	*6*	*7*	*8*	*27*	*41*	*57*	*75*	*83*
Mobile search	*6*	*14*	*17*	*30*	*50*	*58*	*64*	*89*	*99*

Source: Media-Analyse, Media Server, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



In Austria, there are three main mobile service providers - A1, T-Mobile and Hutchinson 3. About 50% of internet traffic is now via mobile devices.

Both men and women use mobile devices almost equally. Around three quarters of mobile device users are between 14-49 years old. The higher the social status, the higher the usage of mobile devices: 73% of people in the social class ABC1 use mobile devices regularly. Students and people who are working or well educated are over-represented. In Austria, the average daily usage of mobile devices is around 80 minutes. (Source: Media-Analyse, MediaServer)

In terms of advertising, mobile devices are most commonly used for Facebook ads, branding campaigns (understitial, medium rectangle) and CPC campaigns (interstitial, MMA-banner).

New trends in Austria include hyperlocal targeting and real data targeting supplied by the mobile service providers.

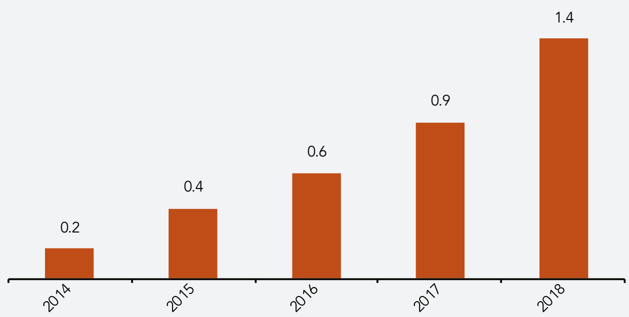
Within the next few years, we expect a boost of beacon/near field communication, especially in the retailer industry. We also think that the creation of digital creatives has to move more into 'mobile first' thinking. Videos should be produced as verticals, banners should be always optimized for mobile usage, and voice search requests will increase dramatically.

Belarus

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	-	-	54.4	57.0	58.5	60.0
Internet - Average daily minutes of consumption	-	-	-	-	327	319	329	338	349
Total advertising expenditure (US$ m)	98	70	81	108	116	83	93	111	132
% of Total adspend delivered via mobile	-	-	-	-	0.2	0.4	0.6	0.9	1.4
Adspend delivered via mobile devices (US$ m)	-	-	-	-	0.2	0.3	0.6	1.0	1.8
Mobile display	-	-	-	-	*0.2*	*0.3*	*0.6*	*1.0*	*1.8*

Source: Zenith, Ministry of Communications and Informatization of Belarus, Gemius, WebExpert

Mobile as % of total adspend



Smartphone and tablet usage is highly skewed towards the young (aged 15-34) and urban population, but usage is rising rapidly among all demographic groups.

Big advertisers commonly use full-screen formats to communicate with consumers, though performance campaigns focus on banners in apps.

The amount of time people spend accessing the internet on their phones is growing rapidly, but most people who do so use desktop internet as well. Only a small proportion of internet users are mobile-only.

Bosnia & Herzegovina

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	11.0	13.9	16.8	18.5	22.0	27.6	35.0	37.0	39.5
Tablet penetration (%)	-	-	0.5	1.0	2.0	3.0	4.5	6.8	10.1
Total advertising expenditure (BAM m)	634	723	814	796	826	830	845	848	850

Source: GfK BH 2006, Zenith

The main mobile providers are BH Mobile (owned by BH Telekom), m:tel (owned by Telekom Srpske) and HT Eronet (owned by HT Mostar).

Total penetration of mobile devices is about 94%, but the level of smart device penetration remains low. In 2015, 27.6% of citizens older than 15 years of age owned a smartphone. Android is the most popular system; Samsung phones account for about 42% of all appliances. Mobile penetration is higher among urban and younger populations. Of those in the 15-24 age group, 78.9% have smart devices v. 6.9% for those in the 65+ age group. For many younger users, using social media to connect and communicate is core to the mobile experience and second-screening is entrenched.

Display is still the dominant type of mobile advertising, especially on local web sites. Smartphone penetration being relatively low, and flat-rate data plans being relatively uncommon, there is much less demand for advertising formats like online videos, animations and interactive.

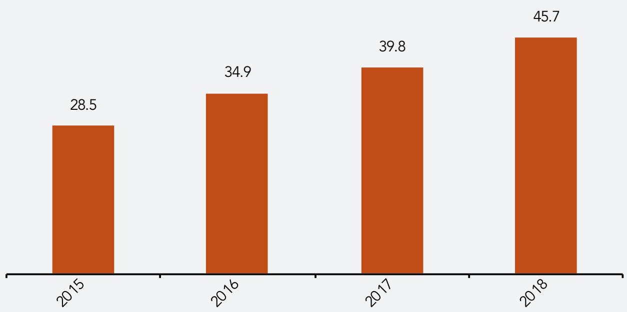
As smartphone penetration continues to increase, we can expect that mobile advertising and opportunities to develop will grow, assuming mobile operators give customers access to reliable data packages.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	28	33	48	53	-	-
Tablet penetration (%)	-	-	-	8	15	22	26	-	-
Internet - Average daily minutes of consumption*	772	732	733	623	525	432	430	440	460
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	123	150	175	210
% of average daily internet consumption via mobile	-	-	-	-	-	28.5	34.9	39.8	45.7
Total advertising expenditure (Lev m)	994	1,039	1,125	1,244	1,329	1,353	1,431	1,484	1,569
% of programmatic adspend going to mobile	-	-	-	17	22	22	26	25	-

Source: Gemius, Consumer barometer, GARB, Piero, Zenith

** desktop only until 2015*

Mobile as % of daily internet consumption



The key mobile operators in this market are Mtel, Telenor and Vivacom. 100% of under-25s use a mobile phone, 91% of these a smartphone. The percentages are slightly smaller among older age groups, and although 93% of those in the 55+ age group own mobile phones, only 21% of them have a smartphone. Smartphone user growth is greater than tablet user growth, however.

Standard banner advertising is the most commonly used ad format on smartphones, and popular rich media formats include spin cube format, slide banner and expand banner.

In-article ads are also very popular in mobile advertising due to their non-aggressive positioning, making them more acceptable to the user. Clients' websites are developed specifically with mobile in mind.

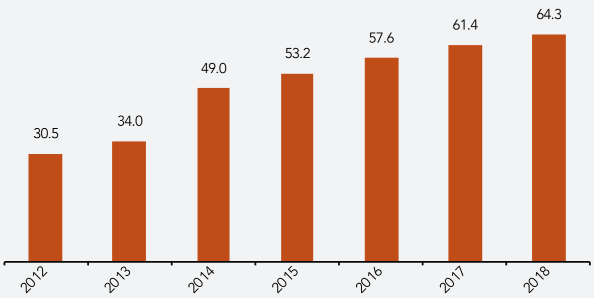
Mobile is expected to account for 50% of online consumption at some point over the next few years. Currently, 32% of all monthly page views happen on mobile devices and 14% of users go online on a mobile device only, while 64% go online on both a mobile device and a desktop.

Canada

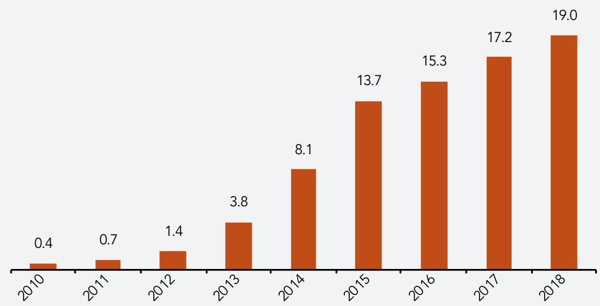
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	17.7	24.3	34.5	39.4	50.2	55.7	59.9	62.8	64.6
Tablet penetration (%)	-	6.0	15.0	22.5	42.0	48.2	52.0	55.6	57.4
Internet - Average daily minutes of consumption	88	93	121	137	133	139	144	150	158
Mobile internet - Average daily minutes of consumption	-	-	37	47	65	74	83	92	101
% of average daily internet consumption via mobile	-	-	31	34	49	53	58	61	64
Total advertising expenditure (C$ m)	10,391	10,851	11,219	11,164	11,174	11,233	11,456	11,715	11,999
% of Total adspend delivered via mobile	0.4	0.7	1.4	3.8	8.1	13.7	15.3	17.2	19.0
Adspend delivered via mobile devices (C$ m)	47	81	160	427	903	1,535	1,750	2,013	2,274
Mobile display	*19*	*32*	*64*	*170*	*359*	*610*	*694*	*793*	*888*
Mobile video	*3*	*6*	*11*	*29*	*61*	*104*	*123*	*145*	*168*
Mobile classified	*1*	*1*	*2*	*5*	*10*	*17*	*21*	*26*	*32*
Mobile search	*24*	*41*	*82*	*218*	*461*	*784*	*896*	*1,032*	*1,171*
Mobile other	*1*	*1*	*2*	*6*	*12*	*20*	*17*	*16*	*15*

Source: eMarketer Digital Atlas, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



There are about ten mobile wireless service operators in Canada. However, according to CRTC's Media Monitoring report, approximately 90% of revenues are shared by the top three national providers: Rogers, Telus, and Bell; in 2014, Rogers held a 35% market share, followed by Bell (29%), and Telus (28%).

The 'Big Three' have subsidiaries/brands allowing them to differentiate their offerings to reach broader market segments.

Rogers: Rogers Wireless, Fido, Chatr

Telus: Telus Mobility, Koodo Mobile, Public Mobile

Bell: Bell Mobility, Virgin Mobile, MTS Mobility

67% of Canadians aged 12+ personally own a smartphone, and 49% own a tablet. What's interesting is that smartphone penetration peaks at 88% for A18-24, while tablet owners are a bit older, hitting 56% for A35-49.

A12-17 spend about 15 hours a week on mobile devices compared to 10 hours for A12+.

Devices owned

	Smartphone	Tablet	Cell phone that is not a smartphone
Total A12+	67.09	48.84	20.75
A12-17	75.42	40.95	13.45
A18-24	87.92	37.68	8.71
A25-34	86.04	52.7	9.79
A35-49	75.33	56.38	14.36
A50-64	56.85	48.90	26.39
A65+	37.43	45.69	41.40

Source: Vividata Q1 2016

Time spent on mobile device

	Average time spent over past 7 days (hours)
Total A12+	10
A12-17	15
A18-24	14
A25-34	13
A35-49	10
A50-64	7
A65+	5

Source: Vividata Q1 2016

Search is the most used mobile advertising format in 2016 with 51% of total mobile ad spend, followed by display (40%) and video (6%).

As mobile advertising matures, the growth in adspend we are seeing right now will slow down. However, with faster internet and decreasing costs of data, it is expected that mobile video will enjoy double digit growth until 2020. Not every format in mobile is enjoying exponential growth - SMS/MMS advertising is actually seeing a decrease in investment. As a whole, mobile advertising is forecast to reach C$4.5 billion by 2020.

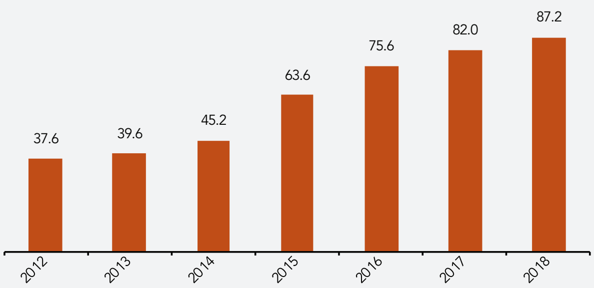
With the advancement of wireless technology, in both hardware and software, the sky is the limit for mobile advertising. And because mobile devices are on you almost all the time, it could become the most important touchpoint for advertisers.

China

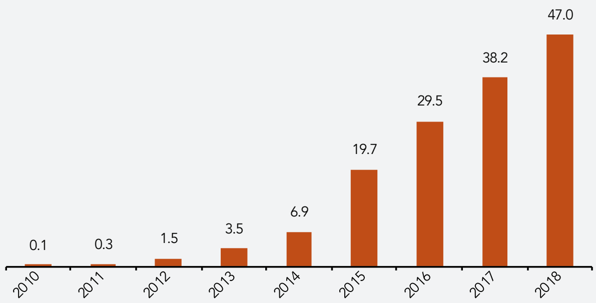
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	23.9	51.0	58.4	69.9	75.5	79.0	82.0
Tablet penetration (%)	-	-	0.7	1.6	2.5	3.1	3.3	3.4	3.5
Internet - Average daily minutes of consumption	-	82	87	116	143	165	187	202	206
Mobile internet - Average daily minutes of consumption	-	-	33	46	64	105	141	166	180
% of average daily internet consumption via mobile	-	-	37.6	39.6	45.2	63.6	75.6	82.0	87.2
Total advertising expenditure (BMB m)	252,970	297,805	335,234	380,015	419,967	458,331	498,389	536,641	576,401
% of Total adspend delivered via mobile	0.1	0.3	1.5	3.5	6.9	19.7	29.5	38.2	47.0
Adspend delivered via mobile devices (RMB m)	284	1,026	5,124	13,184	29,060	90,160	147,125	205,140	271,145

Source: China Marketing & Media Survey 2010-2015, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



According to iResearch, in the first half of 2016, 12 of the 20 apps with the highest reach belonged to Baidu, Alibaba and Tencent (BAT), which have purchased other companies to extend the range of their operations. 360, which focuses on mobile safety, is the next most-popular app.

Tencent, the leading communication service, accounts for almost 60% of time spent with mobile internet. The video apps of Alibaba and Baidu account for most of the remaining time spent.

The penetration of mobile technology continues to grow, as does the frequency of its use, thanks to the spread of 4G communication technology. Mobile penetration grew 20% in 2015.

Mobile phone use is most common among the young, those who have grown up with the technology. It is also slightly higher among the inhabitants of the less-developed cities (of tier 4 and 5) than in the higher-tier cities, since there are fewer alternative available sources of entertainment.

Expenditure on mobile advertising grew 210% in 2015 to reach 90 billion RMB. Most mobile adspend goes to search engines and ecommerce, portals and news sites. Mobile advertising accounted for 20% of all advertising in China in 2015; by 2018 we expect this proportion to rise to 47%.

The iResearch mobile internet report shows that video pre-roll, QR code and picture display ads are the three formats with highest reach. However, the rapidly rising popularity of social media means that HTML 5 ads (common in social media) have great potential, though they currently reach only 17.2% of mobile users.

According to the China Marketing & Media Survey, the number of print newspaper and magazine readers has declined by nearly 5% in the last two years, but newspapers and magazines have gained twice as many readers of their digital publications.

Digital payment has gradually come to complement cash and cards, with the convenience of Alipay and Wechat pay. Taking cinema as an example, according to the Yangtze 2016 survey by Publicis Media China – the largest consumer behaviour analysis in China – almost half of customers choose online payment in cinemas.

The stability of 4G, with its lower data costs, and the introduction of HD cameras in mobile phones have all helped boost the popularity of live streaming apps, which now have over 24 million daily active users. Having evolved from video shooting apps (such as Miao Pai and Xiao Ka Xiu), live streaming apps satisfy the public's desire to be the stars in their own lives. This means not just acting like a star, but taking charge of their life. In Q2 2016, health and wellness apps were the fastest-growing category of apps, up 17% quarter on quarter.

In 2015, people spent an average of 105 minutes using mobile internet per day, 64% more than in 2014. This was 64% of all the time they spent accessing the internet, so the mobile phone was the main point of accessing information.

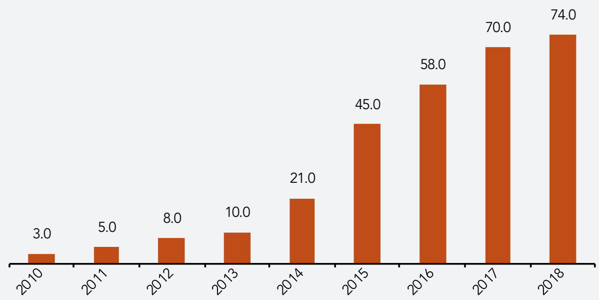
Heavy reliance on mobile phones is changing people's lifestyles substantially. Cross-border online shopping, home delivery services and taxi services have all developed rapidly.

Colombia

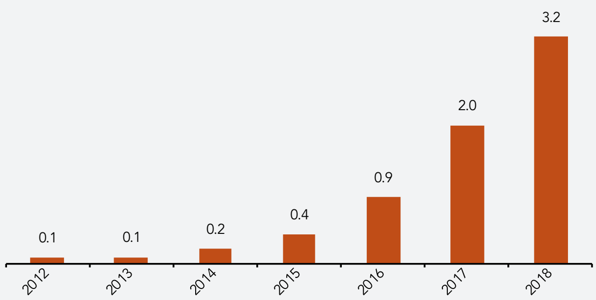
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	5.6	11.6	14.5	24.8	35.0	57.0	65.6	75.4	86.7
Tablet penetration (%)	-	0.8	3.2	11.3	19.4	25.0	26.3	27.6	28.9
Internet - Average daily minutes of consumption	25	30	40	60	75	180	85	90	120
Mobile internet - Average daily minutes of consumption	1	2	3	6	16	81	49	63	89
% of average daily internet consumption via mobile	3	5	8	10	21	45	58	70	74
Total advertising expenditure (COP m)	4,820,534	5,926,076	5,730,230	5,715,631	5,193,534	4,837,100	4,999,969	5,054,339	5,153,434
% of programmatic adspend going to mobile	-	-	-	-	-	-	-	-	-
% of Total adspend delivered via mobile	0.0	0.0	0.1	0.1	0.2	0.4	0.9	2.0	3.2
Adspend delivered via mobile devices (COP m)	139	1,163	4,058	4,625	10,056	19,506	46,390	98,655	165,332
Mobile display	-	-	*3,256*	*3,818*	*6,837*	*13,870*	*25,514*	*54,260*	*90,933*
Mobile classified	-	-	*601*	*293*	*372*	*871*	*9,278*	*19,731*	*33,066*
Mobile search	-	-	*201*	*514*	*2,847*	*4,765*	*11,597*	*24,664*	*41,333*

Source: TGI Colombia, Comscore, IAB Colombia, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



Claro, Movistar and Tigo are the main mobile service providers in Colombia. In the first quarter of 2016, the number of people with mobile internet access was 13,033,155, of which 88% had 3G technology (11,480,503), 6% 4G technology (837,814) and 6% 2G technology (714,838).

Mobile devices are most commonly used for the following types of advertising:

- Search
- Video
- Traditional banners
- Geo-reference rich media banners

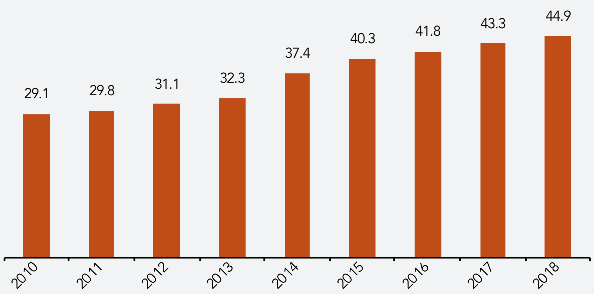
Mobile complements offline activities, and more content is being produced in Colombia now thanks to the easiness of mobile.

New trends include CRM data and geo-reference for segmentation to create personalized communication.

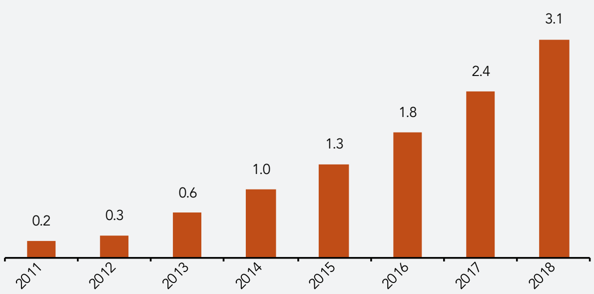
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	28.0	30.0	45.0	48.0	59.0	67.0	75.0	80.0	85.0
Tablet penetration (%)	-	-	-	47.0	55.0	60.0	62.0	63.0	70.0
Internet - Average daily minutes of consumption	131	141	151	148	148	154	158	162	166
Mobile internet - Average daily minutes of consumption	38	42	47	48	55	62	66	70	75
% of average daily internet consumption via mobile	29.1	29.8	31.1	32.3	37.4	40.3	41.8	43.3	44.9
Total advertising expenditure (DKr m)	12,415	13,085	12,706	12,561	12,736	13,291	14,137	15,180	16,412
% of programmatic adspend going to mobile	-	-	-	7.6	7.3	15.0	28.0	-	-
% of Total adspend delivered via mobile	-	0.2	0.3	0.6	1.0	1.3	1.8	2.4	3.1
Adspend delivered via mobile devices (DKr m)	-	30	39	78	122	176	251	358	510
Mobile display/classified	-	30	39	78	122	176	251	358	510

Source: Dansk Online, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



The main mobile service providers in Denmark are: 3, Telia, Telenor, TDC, Tellmore, CBB and Call Me. Almost everybody uses mobile devices, but we see a greater affinity among young people. However, no particular demographic criteria are more obvious than others.

In Denmark, the type of advertising mobile devices are most commonly used for is display ads.

Mobile and tablet internet usage is growing at the slight expense of desktop internet usage. This development can be explained by the fact that smartphones and tablets are more dynamic devices, and are easier for consumers to use in the increasingly complex world we live in.

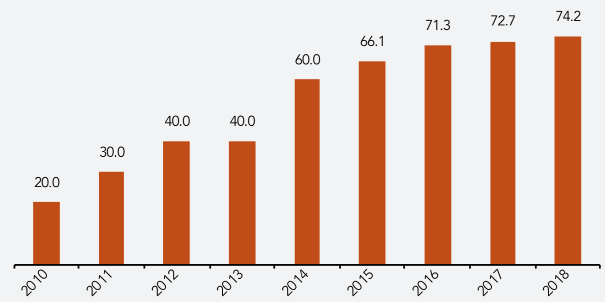
The new trends in mobile include Mobile Pay (mobile used as wallet) and mobile virtual reality. In the future, there will be a move from text to speech (voice search) and augmented experiences.

Ecuador

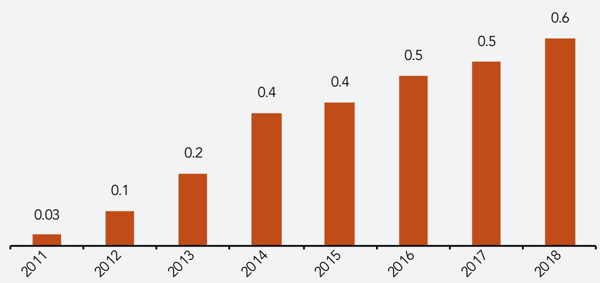
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	8.4	15.4	25.2	39.0	45.0	50.0	55.0	66.0
Tablet penetration (%)	-	2.0	4.0	7.0	10.0	13.0	16.0	18.0	21.0
Internet - Average daily minutes of consumption	120	144	168	180	210	242	278	285	291
Mobile internet - Average daily minutes of consumption	24	43.2	67.2	72	126	160	198	207	216
% of average daily internet consumption via mobile	20.0	30.0	40.0	40.0	60.0	66.1	71.3	72.7	74.2
Total advertising expenditure (US$ m)	368	455	410	422	450	422	389	379	369
% of Total adspend delivered via mobile	-	0.03	0.1	0.2	0.4	0.4	0.5	0.5	0.6
Adspend delivered via mobile devices (US$ m)	-	0.13	0.4	0.9	1.7	1.7	1.9	2.0	2.2
Mobile display	-	*0.02*	*0.1*	*0.7*	*1.1*	*1.1*	*1.2*	*1.3*	*1.4*
Mobile classified	-	*0.02*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Mobile search	-	*0.09*	*0.2*	*0.1*	*0.5*	*0.5*	*0.5*	*0.6*	*0.7*

Source: Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



52% of mobile device owners are Millennials (aged 18-34), 51% are single; geographically, 55% of mobile device users are to be found in the coastal regions, and 42% in the Highlands.

In 2010 mobile internet penetration stood at just 2%; by March 2016, it had risen to 37%. In 2012, 7% of individuals said they used mobile devices to go online, and in 2015 23% did, a tripling of mobile usage in just three years.

Brands are developing their owned/branded apps, apps that can be integrated with specific BTL campaigns to boost the brand experience.

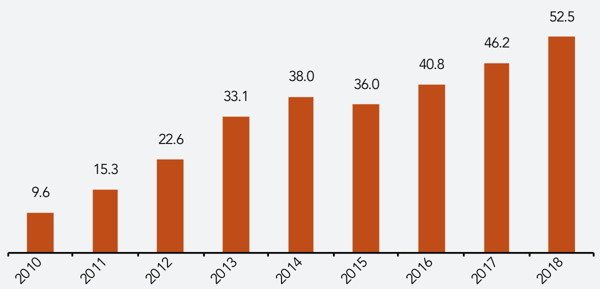
At the moment, digital plans are implemented 70% via desktop and 30% via mobile; by the end of the year we think the distribution will be more like 50%/50%; and over the next two years it could move to 70% mobile and 30% desktop.

Estonia

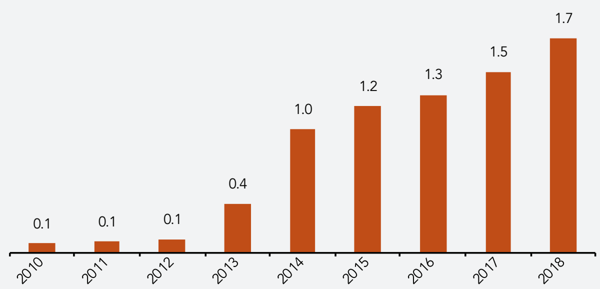
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	6.4	9.1	10.3	17.2	25.0	48.0	55.0	60.0	66.0
Tablet penetration (%)	0.5	1.0	2.5	7.8	15.0	28.2	35.0	42.0	48.0
Internet - Average daily minutes of consumption	114	124	133	142	150	200	213	221	230
Mobile internet - Average daily minutes of consumption	11	19	30	47	57	72	87	102	121
% of average daily internet consumption via mobile	9.6	15.3	22.6	33.1	38.0	36.0	40.8	46.2	52.5
Total advertising expenditure (€ m)	67	72	72	76	80	84	86	89	92
% of programmatic adspend going to mobile	-	-	-	-	-	-	35	40	50
% of Total adspend delivered via mobile	0.1	0.1	0.1	0.4	1.0	1.2	1.3	1.5	1.7
Adspend delivered via mobile devices (€ m)	0.05	0.1	0.1	0.3	0.8	1.0	1.1	1.3	1.6
Mobile display	*0.05*	*0.1*	*0.1*	*0.3*	*0.8*	*1.0*	*1.1*	*1.3*	*1.6*

Source: TNS Emor, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



The main mobile service providers are Telia, Elisa and Tele2.

Mobile devices currently account for 20%-30% of internet traffic.

The most common types of mobile advertising are banners embedded within editorial content. There are several start-ups and more established companies working to offer more attractive and interactive mobile ad formats, such as full-screen takeovers within mobile apps, but these are very expensive and have lower conversion rates than regular banners.

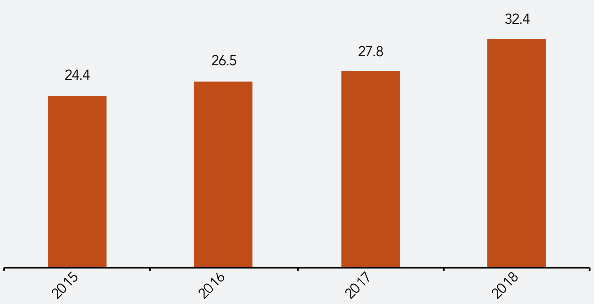
Most websites in Estonia are not optimised for mobile devices, but as penetration increases that must change over the next few years.

Finland

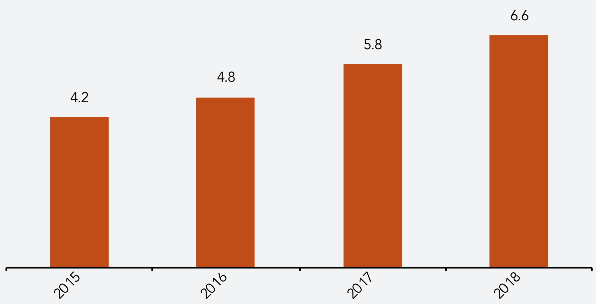
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	42	49	55	65	67	73	75	80
Tablet penetration (%)	4	7	12	22	28	32	43	40	39
Internet - Average daily minutes of consumption	113	126	135	-	150	160	170	180	185
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	39	45	50	60
% of average daily internet consumption via mobile	-	-	-	-	-	24.4	26.5	27.8	32.4
Total advertising expenditure (€ m)	1,276	1,345	1,311	1,208	1,180	1,155	1,180	1,215	1,275
% of Total adspend delivered via mobile	-	-	-	-	-	4.2	4.8	5.8	6.6
Adspend delivered via mobile devices (€ m)	-	-	-	-	-	49	57	70	84
Mobile display	-	-	-	-	-	*32*	*37*	*42*	*47*
Mobile search	-	-	-	-	-	*17*	*20*	*28*	*37*

Source: TNS Atlas 2015, Consumer Barometer, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



Widespace and Sanoma are the two biggest operators in Finland. The Widespace mobile network reaches over 80% of the smartphone-using population and has 2.6 million unique users every week. Sanoma, meanwhile, reaches three million Finns a week. 47% of the population use mobile devices to access the internet; around 73% of those aged 15-29 do, 55% of those aged 30-49, and about 27% of those aged between 50 and 74.

The most common ad formats on smartphones include mobile takeover 600x600, swipe cube, split screen video, stream view and interstitial. Internet usage revolves much more around smartphones than previously. Online videos are watched via mobile more often, especially short-form content (20% of Finns watch videos via mobile phones daily, and 32% less often but at least weekly). Video is used more often in mobile ads due to the new stream view formats being available.

87% of all TV viewers use a second screen whilst watching TV, and mobile phone is the leading second-screen device.

In the future, smartwatches may become a more popular delivery vehicle for mobile advertisements as well. Mobile will have a solid role in all online campaigns as consumption grows. By 2019, mobile consumption will account for 50% of all media consumption.

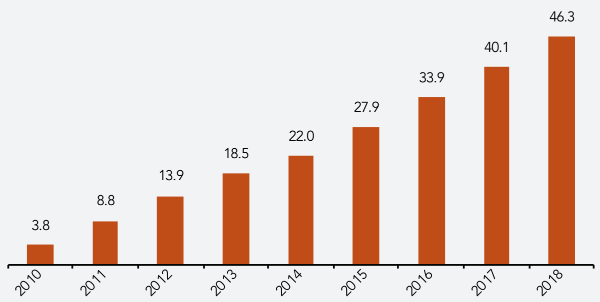
Mobile search is growing: people have more choice than ever, and for navigating through that, search is a lifeline. Soon, mobile will overtake desktop's digital budget.

Mobile usage will grow in the older target group as well (at the moment the core users are 15-29 years old).

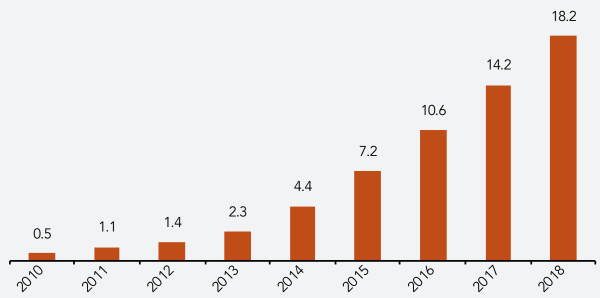
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	12.8	18.0	25.1	33.2	42.7	49.2	55.3	61.2	65.4
Tablet penetration (%)		4.1	12.8	27.7	43.0	50.0	54.0	57.2	59.1
Internet - Average daily minutes of consumption	81	90	102	115	133	143	153	164	175
Mobile internet - Average daily minutes of consumption	3	8	14	21	29	40	52	66	81
% of average daily internet consumption via mobile	3.8	8.8	13.9	18.5	22.0	27.9	33.9	40.1	46.3
Total advertising expenditure (€ m)	10,144	10,449	10,232	9,974	10,164	10,164	10,255	10,298	10,403
% of programmatic adspend going to mobile				3.2	4.2	6.8	18.6	29.2	39.5
% of Total adspend delivered via mobile	0.5	1.1	1.4	2.3	4.4	7.2	10.6	14.2	18.2
Adspend delivered via mobile devices (€ m)	52	112	146	229	444	733	1,083	1,466	1,894
Mobile display	*20*	*32*	*51*	*79*	*180*	*277*	*399*	*523*	*648*
Mobile search	*32*	*80*	*95*	*150*	*264*	*456*	*684*	*944*	*1,246*

Source: Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



The internet is the main driver of adspend growth in France, growing at about 6% a year. The fastest-growing internet formats are mobile (up 48% this year), video (up 27%), and social (31%). Mobile adspend is growing very quickly: it will represent 10.6% of total adspend this year, and 18.2% in 2018, when it will also represent 52.1% of total internet adspend.

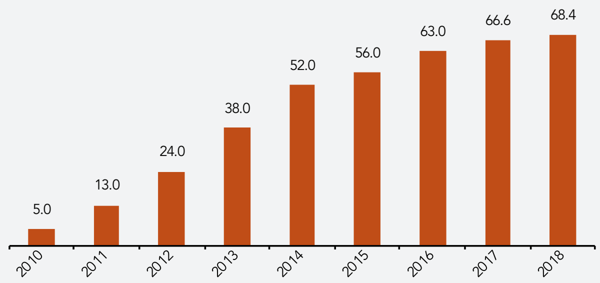
Mobile video advertising is certainly growing quickly, but expenditure figures are not properly monitored. We know that 27% of catch-up views were on mobile devices in 2015, up six percentage points on 2014.

Germany

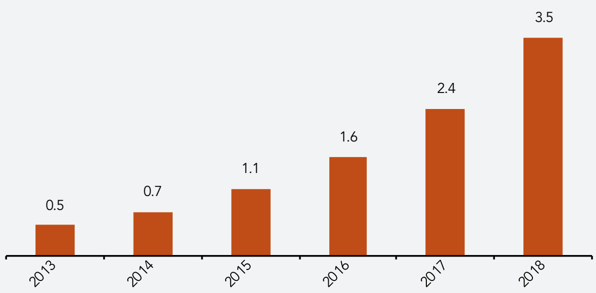
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	12.6	23.0	32.0	40.5	56.0	64.5	71.7	77.3	81.3
Tablet penetration (%)	2.0	4.8	17.8	25.9	32.6	37.5	42.1	45.9	47.6
Internet - Average daily minutes of consumption	77	80	83	108	111	108	110	114	115
Mobile internet - Average daily minutes of consumption	4	10	20	41	58	60	69	76	79
% of average daily internet consumption via mobile	5.0	13.0	24.0	38.0	52.0	56.0	63.0	66.6	68.4
Total advertising expenditure (€ m)	17,961	18,482	18,212	18,252	18,939	19,296	19,832	20,259	20,780
% of Total adspend delivered via mobile	-	-	-	0.5	0.7	1.1	1.6	2.4	3.5
Adspend delivered via mobile devices (€ m)	-	-	-	88	134	209	317	483	736
Mobile display	-	-	-	*88*	*134*	*204*	*310*	*472*	*719*
Mobile classified	-	-	-	-	-	*5*	*7*	*11*	*17*

Source: Statista, OVK, BVDW, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



In February 2016, around 83% of male mobile phone users and 75% of female ones were using smartphones. Service providers include T-Mobile (whose resellers are Congstar and Lebara), Vodafone (otelo, FYVE, allmobil, BildMobil, EDEKA mobil, Rossmann mobil) and the merged O2 (Telefonica)/KPN/eplus (simyo, BASE, blau.de, Aldi Talk, Ay Yildiz, SimTim, ring, Ortel, netzclub, MTV mobile, Fonic, Alice Mobile, ADAC mobile for members).

50% of tablet users watch videos at least once a week on their device (48% of smartphone owners do the same). 66% of smartphone users use their device at least once a day to organise their everyday lives (52% of tablet users).

The type of content consumed over mobile tends to be low involvement: mostly 'snackable' and situation-specific content i.e. incentives or promotions. Mobile shopping is also part of this, especially for FMCG products. On the other hand, the more high involvement and intensive search/research takes place on 'big' screens (i.e. desktop and TV).

Growth will slow down, with a 30%-35% shift from desktop to mobile expected within the next three years. We expect mobile will reach its final utility level at a maximum of 80%-85% of the average online usage. Mobile ad blockers will not reduce reach as much as desktop versions do, and in-app ad-blocking will have little effect. There will be even more granular and local advertising.

One to one messaging will be possible from 2018 due to loosened data security regulations. Many won't notice or won't care, but most people will probably like it. NFC will be used for check-in/out via smartphone: POS, parking decks, job/office, and there will be a synchronisation of DOOH and mobile. Augmented and virtual reality will drive innovation and growth.

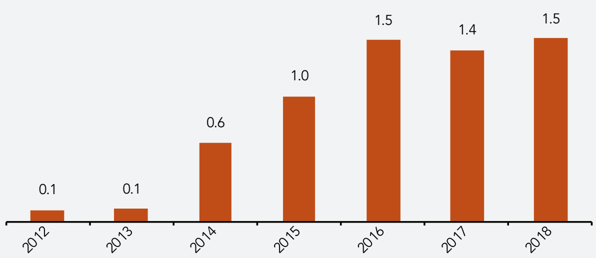
The future of mobile

- Mobile data will be the basis of cross-device-tracking
- Mobile DSPs will be used for meta-DSPs and -DMPs
- There will be a fusion of owned- and paid-touchpoints via mobile data
- Apps will become even more important, while browser usage will decrease
- Mobile devices will find their way into many occupations (e.g. diagnostic use)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	30.0	38.0	48.0	57.0	62.0	66.0	70.0
Tablet penetration (%)	-	-	2.4	7.1	12.9	20.5	25.0	28.0	31.0
Internet - Average daily minutes of consumption	-	-	123	128	134	140	188	195	200
Total advertising expenditure (€ m)	1,940	1,505	1,062	1,015	1,095	980	1,017	1,073	1,143
% of Total adspend delivered via mobile	-	-	0.1	0.1	0.6	1.0	1.5	1.4	1.5
Adspend delivered via mobile devices (€ m)	-	-	1	1	7	10	15	15	17

Source: Media Services, Zenith

Mobile as % of total adspend



Cosmote, Vodafone and Wind are the main mobile service providers in Greece. They had all launched 4G services by the beginning of 2015.

Although the great majority of the population has a mobile phone, smartphone ownership is much more common among the young. 93% of 13-24 year-olds have smartphones, compared to just 28% of the over 55s. Mobile phones and tables are the main internet devices among the young, but older people use them to complement their desktop access.

In Greece it is possible to target advertising to specific mobile devices, but this is not much used since it significantly decreases audience reach, especially for mass-market products.

The BMI Research report launched in September 2016 showed that there were 960,000 new mobile subscribers in 2016, a very healthy number compared to the 2014 loses. Early data suggests that there were 62,000 new subscribers in Q1 2016. Low-cost pre-paid services are becoming more popular, particularly among the young, so consumers are spending less.

The mobile wallet is becoming a reality in Greece. With capital controls in place since July 2015, new opportunities have opened for the evolution of mobile wallets. Services that are currently available include Winbank, which is owned by the biggest financial institution in Greece, Piraeus Bank. The market is still small, but has great potential.

Advanced technologies available in social media – especially Facebook and Instagram (live broadcast, 360° videos etc.) – have increased mobile usage and have changed the way brands are communicating their stories to people.

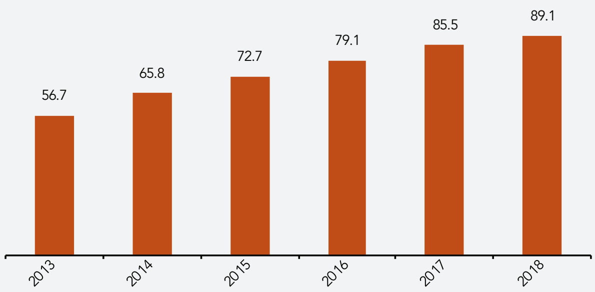
Our phones have become the centres of our lives, and may eventually be smarter than we are. Mobile technologies make our lives easier; with the rise of mobile wallets, everyday payments are becoming more flexible, and with voice search growing fast our searches are made more easily and naturally. The increased opportunities provided by social media have allowed people to become creators, offering real value in user-generated content. The next generation of mobile technology, based on augmented reality, will immerse consumers in a whole new world of opportunities, offering them even more power.

Hong Kong

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	30.0	45.0	58.0	62.8	67.8	72.9	78.0	83.1	88.2
Tablet penetration (%)	1.5	4.3	15.0	23.6	29.5	33.0	36.2	42.3	45.1
Internet - Average daily minutes of consumption	-	-	-	141	155	150	158	165	174
Mobile internet - Average daily minutes of consumption	-	-	-	80	102	109	125	141	155
% of average daily internet consumption via mobile	-	-	-	56.7	65.8	72.7	79.1	85.5	89.1

Source: Zenith

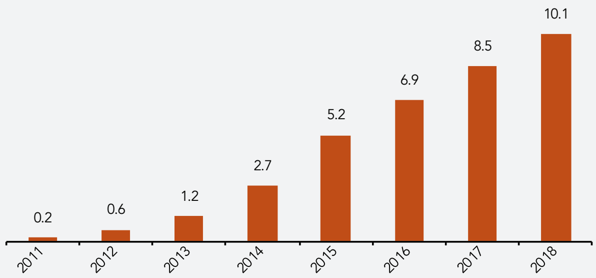
Mobile as % of daily internet consumption



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	5.0	17.0	23.0	26.8	39.0	44.1	51.5	55.6	58.4
Tablet penetration (%)	-	-	-	5.7	9.0	11.9	12.1	12.6	12.9
Internet - Average daily minutes of consumption	71	141	116	123	127	129	133	135	140
Total advertising expenditure (HUF m)	150,400	144,592	135,426	137,766	149,271	153,545	162,060	169,699	178,954
% of Total adspend delivered via mobile	-	0.2	0.6	1.2	2.7	5.2	6.9	8.5	10.1
Adspend delivered via mobile devices (HUF m)	-	221	762	1,652	4,014	7,936	11,110	14,443	18,053

Source: Kantar, TGI, GemiusAudience, IAB, Zenith

Mobile as % of total adspend



Over the past few years mobile has enjoyed extensive growth in the Hungarian market; in 2016, the majority of mobile owners always have their smartphones with them as the primary screen. Advertisers are becoming more adept at exploiting mobile ad possibilities both in terms of formats and buying methods. Programmatic buying drives mobile spending further, and m-commerce is becoming more popular.

In the upcoming years we do expect further increases in mobile ad spending, albeit at a slower rate. The principal drivers will be programmatic (from the technology side) and video (with regard to formats).

Fast facts

- Smartphone penetration: there are 3.5 million smartphones in Hungary, representing two thirds of total internet users. Two million mobile internet subscriptions means an increasing need for 4G services.

- What do we know about Hungarian smartphone users?
  75% never switch off their smartphone
  90% downloads apps regularly
  31% never have their phone more than one metre away from them
  19% use mobile devices in the toilet regularly
  15% would choose to be able to use their mobile over sex

- Frequently used apps are: navigation, communication, games, social media.

- Formats: standard mobile ads are widely used, and new rich media formats are developed by sales houses or adapted from those used in other markets.

- Buying methods: although CPM and flat fee buying methods are the most common in direct buys, many sales houses are starting to use programmatic mobile advertising. Currently these are mainly via open auction.

- Overall, e-commerce is increasing, although consumers still have a low level of trust in online payment systems.

- Mobile providers: three key mobile providers in the market, who are the top three mobile advertisers as well: Telekom, Telenor and Vodafone.

- Operating systems: approximately seven out of ten devices run Android, two iOS, and the rest run Windows or Symbian.

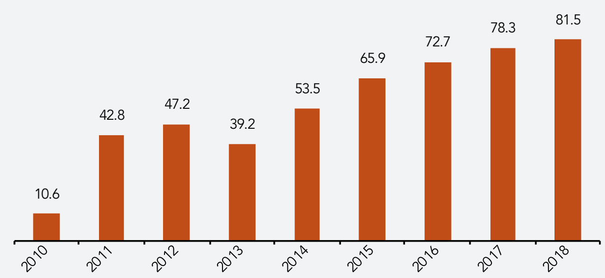
- Sales houses: one dedicated mobile sales house exists on the market: MadHouse. IT is a pioneer in some mobile surveys and ad formats. The top sites sell their own inventory.

India

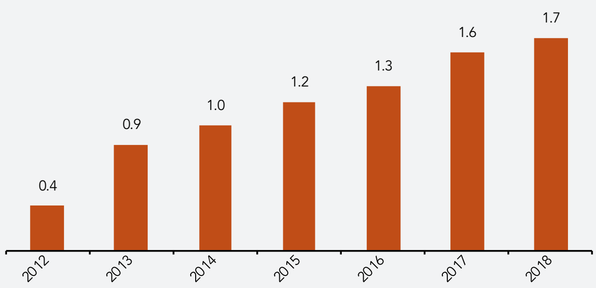
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	12.0	20.5	29.0	33.0	36.0	38.0	40.0
Tablet penetration (%)	-	-	1.0	2.8	4.1	5.3	6.0	6.5	7.0
Internet - Average daily minutes of consumption	11	15	16	24	36	41	48	56	65
Mobile internet - Average daily minutes of consumption	1	7	8	9	19	27	35	44	53
% of average daily internet consumption via mobile	10.6	42.8	47.2	39.2	53.5	65.9	72.7	78.3	81.5
Total advertising expenditure (INR m)	244,700	268,685	290,093	313,146	372,889	442,690	500,459	561,863	627,809
% of Total adspend delivered via mobile	-	-	0.4	0.9	1.0	1.2	1.3	1.6	1.7
Adspend delivered via mobile devices (INR m)	-	-	1,044	2,685	3,773	5,343	6,678	9,032	10,838
Mobile display	-	-	*562*	*1,484*	*2,058*	*2,881*	*3,601*	*4,823*	*5,787*
Mobile classified	-	-	*172*	*432*	*622*	*898*	*1,122*	*1,543*	*1,852*
Mobile search	-	-	*311*	*769*	*1,094*	*1,564*	*1,955*	*2,666*	*3,199*

Source: Emarketer, TGI (urban India), Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



India is the largest mobile market in the world, with more than a billion connections. With 402 million internet users, India is also the second-largest internet-using country in the world. Internet growth in India has been driven by the growth in smartphone availability and usage. The following factors have driven growth in smartphone usage:

- Availability of low-cost devices

- Aggressive expansion of 3G and 4G networks by telecom operators along with invitation pricing to expand usage of internet (wireless and wireline). Mobile service providers in the country, led by the pack of Airtel, Vodafone Idea, have added 4G/LTE to their services. India's biggest private sector company, Reliance Industries Limited, has also launched Reliance JIO VoLTE services, and its offerings are expected to disrupt the market. Its focus is on creating a complete mobile ecosystem with LYF as the mobile handset brand, JIO the service provider, and JIO Live as an OTT platform for entertainment.

- Better quality browsing: The upgrading of mobile networks and increase in bandwidth availability has improved stability of connections and browsing quality.

- Growing importance of local language
  Increasing localization of content (adaptation of global/national formats)
  Availability of variety in content consumption

- Increasing cross-media consumption has led to an overall increase in total media minutes
  There is increased on-the-move consumption happening
  Multi-screening has become commonplace

- Mobile internet is gaining thanks to
  Flexibility of access location and time (anywhere, anytime)
  Depth and variety of content associated with primary programming
  Instant and real time access to content

The growth has been seen across all demographic groups. Among those at the lower end of the socioeconomic scale, mobile phones function as the first screen interacting with the external world, and also drives economic and social inclusion.

On the advertising front, all formats are currently available and are used across the range of advertisers and publishers. Rich media and videos are important formats used in the urban markets, while non data or voice led solutions like, SMS, OBD calls, missed calls etc. are highly prevalent for the rural markets. Programmatic on mobile remains little used.

We have witnessed 'Appification' syndrome - three key areas have driven appification:

- ecommerce or mcommerce (Flipkart, Amazon India, Snapdeal, OLX, Zomato, Uber, Ola etc)

- Most media owners have understood that one touch access to their content is critical to audience aggregation. There has been a slew of app launches including HOTSTAR, DITTO TV, VOOT, NETFLIX etc. Oot is the most recent app launch by the VIACOM18 group.

- Mobile wallets (like PAYTM, MOBIKWIK, M-PESA, AIRTEL MONEY etc.) are leading the payment revolution in the country.

With programs like DIGITAL INDIA and SMART CITIES driven by the Prime Minister of India, access to infrastructure solutions relevant for smart cities (e.g. wi-fi, fibre networks, and backhaul networks) will improve and lead to more high growth for the mobile industry (both OEMS and service providers). This in turn would provide a plethora of opportunity for marketers to leverage the platform more effectively for the brands.

Voice calling has fallen drastically over the past two years. We expect this trend to continue over the next two to three years as operators, as well as smartphone vendors, push for 4G fuelled by increasing availability and falling prices.

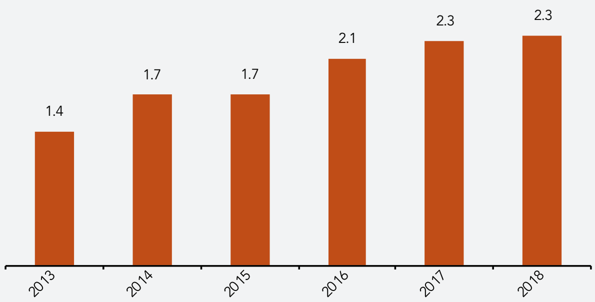
Growing at a CAGR of about 32% till 2020, the used smartphone market is forecast to grow to about 46 million units from 20 million units currently, generating an estimated US$4 billion for its owners.

Israel

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	38.5	42.2	48.5	57.0	62.0	67.0	70.0	72.0	74.2
Tablet penetration (%)	1.0	4.6	6.9	22.0	25.0	28.0	31.0	35.0	39.2
Total advertising expenditure (ILS m)	4,064	3,918	3,506	3,663	3,520	4,257	4,242	4,315	4,424
% of programmatic adspend going to mobile	-	-	-	-	7.5	19.2	24.6	26.2	29.2
% of Total adspend delivered via mobile	-	-	-	1.4	1.7	1.7	2.1	2.3	2.3
Adspend delivered via mobile devices (ILS m)	-	-	-	50	61	74	89	99	104
Mobile display	-	-	-	*50*	*61*	*74*	*89*	*99*	*104*

Source: Zenith

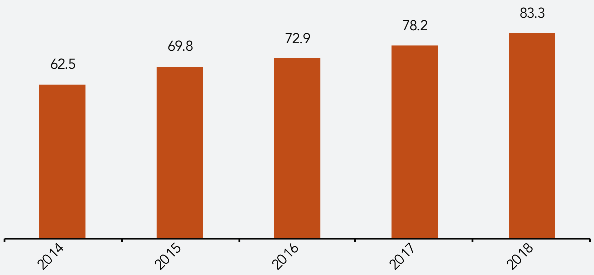
Mobile as % of total adspend



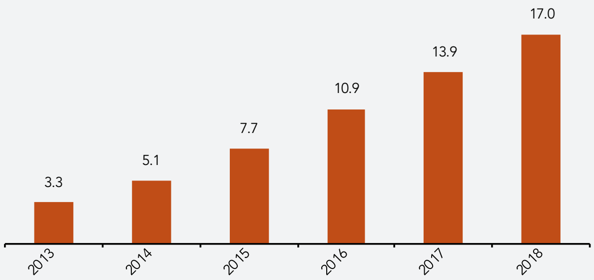
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	13	24	31	41	49	57	62	65	68
Tablet penetration (%)	2	5	15	20	25	29	32	35	37
Internet - Average daily minutes of consumption	43	37	41	34	40	43	48	55	60
Mobile internet - Average daily minutes of consumption	-	-	-	-	25	30	35	43	50
% of average daily internet consumption via mobile	-	-	-	-	62.5	69.8	72.9	78.2	83.3
Total advertising expenditure (€ m)	8,575	8,361	7,528	6,893	6,870	6,999	7,242	7,391	7,559
% of programmatic adspend going to mobile	-	-	-	-	9	15	25	29	32
% of Total adspend delivered via mobile	-	-	-	3.3	5.1	7.7	10.9	13.9	17.0
Adspend delivered via mobile devices (€ m)	-	-	-	228	351	538	792	1,030	1,287
Mobile display (included video adv)	-	-	-	*130*	*200*	*371*	*554*	*721*	*927*
Mobile messaging	-	-	-	*11*	*11*	*11*	*16*	*10*	*10*
Mobile search	-	-	-	*86*	*140*	*156*	*222*	*299*	*350*

Sources: eMarketer, Audiweb, Politecnico, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



The main mobile operators in Italy are Vodafone and Tim. In August 2016 Tre and Wind signed a partnership becoming the third mobile company.

Mobile devices are widely available in the country, with an estimated 62% penetration this year. Ownership is evenly balanced between men and women, while 18-34 year-olds are most likely to use mobile internet.

In 2015 roughly 70% of mobile adspend went to display (including video), with almost all the rest going to search. These proportions are likely to remain fairly stable.

Mobile devices are changing TV viewing habits; 44% of television viewers sometimes use smartphones to connect to the internet while watching television at home, and 14% sometimes use tablets.

Start-ups are cooperating with telecoms companies to develop social and behavioural profiles for mobile users. The data provider Audiens is fast becoming one of the leading Italian suppliers of third-party data, and now has profiles for 10 million mobile internet users in Italy.

Native advertising will be one of the most important types of mobile advertising in the near future. The native format is extremely efficient on small mobile screens, generating an immersive experience. Users' interactions with native advertising are from 20% to 60% higher than with traditional banners.

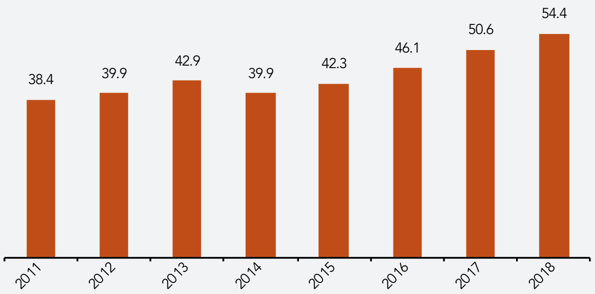
One of the new features available in the mobile environment is hyper-local targeting. Mobile DSPs like StrikeAd and Adform allow ads to be targeted to the most relevant individuals, in real time, in the right place. The same data can inform media strategy, enabling engagement and retargeting activities based on the users' patterns of consumptions. Furthermore, platforms like Beintoo and BeAudience allow clusters of device IDs to be classified by brand affiliation, purchasing attitude and frequency of buying.

Japan

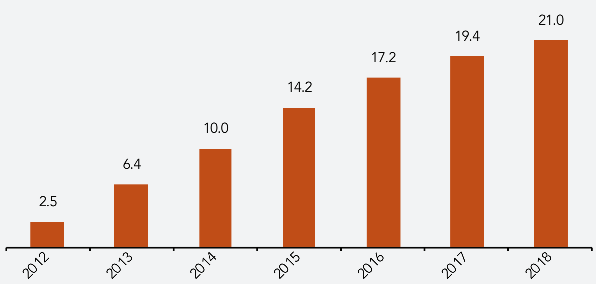
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	9.7	29.3	49.5	62.6	72.5	77.3	80.0	82.4	84.2
Tablet penetration (%)	7.2	8.5	15.3	21.9	34.2	37.4	39.5	41.1	42.0
Internet - Average daily minutes of consumption	69	74	79	81	61	61	63	66	69
Mobile internet - Average daily minutes of consumption	-	28	31	35	24	26	29	33	37
% of average daily internet consumption via mobile	-	38.4	39.9	42.9	39.9	42.3	46.1	50.6	54.4
Total advertising expenditure (JPY m)	4,051,300	3,986,300	4,144,600	4,228,100	4,392,000	4,429,000	4,442,200	4,530,900	4,621,600
% of Total adspend delivered via mobile	-	-	2.5	6.4	10.0	14.2	17.2	19.4	21.0
Adspend delivered via mobile devices (JPY m)	-	-	104,800	270,000	440,200	627,900	764,000	878,500	971,600

Source: Ministry of Internal Affairs and Communication, Dentsu, D2C, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend

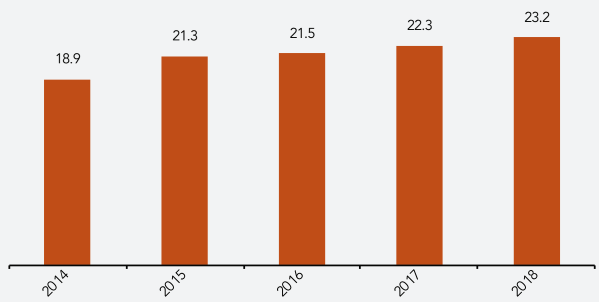


Latvia

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	12	19	27	47	55	60	64
Tablet penetration (%)	-	-	-	7	11	19	22	24	26
Internet - Average daily minutes of consumption	112	111	101	82	111	94	93	94	95
Mobile internet - Average daily minutes of consumption	-	-	-	-	21	20	20	21	22
% of average daily internet consumption via mobile	-	-	-	-	18.9	21.3	21.5	22.3	23.2

Source: TNS, Gemius, Zenith

Mobile as % of daily internet consumption



The main mobile service providers in Latvia are Tele2, LMT and Bite. According to TNS, Tele2 accounts for 39% of connections, LMT for 30% and Bite for 23%.

Mobile internet users tend to be young (73% of them are aged 15-44), either working or in full-time study, have higher incomes, and if they are married they are more likely to have children. While 94% of retired people have mobile phones, only 11% have smartphones and use them to access the internet.

Mobile advertising is still at an early stage of development. The most common mobile ad formats are simple squares or full screens. Interactive options such as scratch or shake to activate are also used.

In the near future we expect to see more precise targeting and the implementation of programmatic buying for mobile advertising.

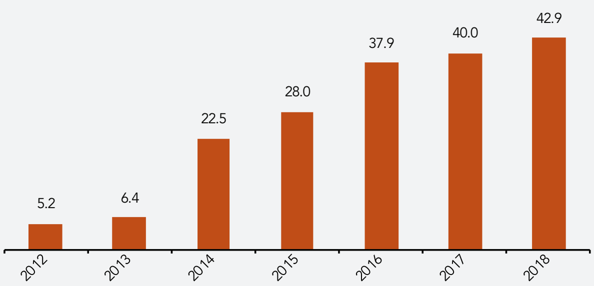
Lithuania

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	13.6	17.0	28.8	35.1	44.7	47.6	51.0	59.0
Tablet penetration (%)	-	0.5	1.2	3.1	7.3	13.7	20.1	25.0	35.0
Internet - Average daily minutes of consumption	73	85	97	110	120	125	140	155	170
Mobile internet - Average daily minutes of consumption	-	-	5	7	27	35	53	62	73
% of average daily internet consumption via mobile	-	-	5.2	6.4	22.5	28.0	37.9	40.0	42.9
Total advertising expenditure (€ m)	94	99	99	99	99	101	103	105	107
% of Total adspend delivered via mobile	-	0.2	0.7	1.2	1.6	2.0	2.1	2.7	3.2
Adspend delivered via mobile devices (€ m)	-	0.2	0.7	1.2	1.6	2.0	2.2	2.8	3.4

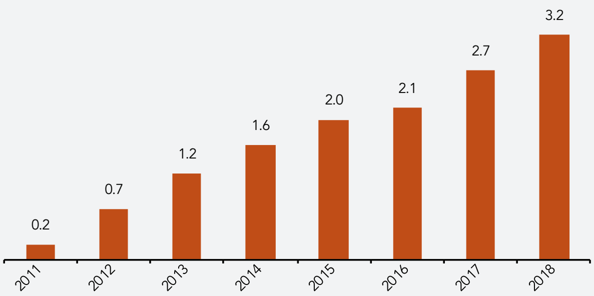
Source: TNS Altas, TNS Media day, TNS net data, Zenith

Total adspend figure includes all traditional media and online display only. (No search, VOD, or mobile are provided in official TNS data)

Mobile as % of daily internet consumption



Mobile as % of total adspend



In Lithuania there are three main mobile service providers: Omnitel, Tele2 and Bitė. According to the Communications Regulatory Authority of the Republic of Lithuania's official data (2016 HY), Tele2 takes the biggest market share (by income) - 40.4%, to Omnitel's 31.1% and Bitė's 26.7%.

Mobile device users tend to be younger people (15-39 years old), have a higher income and higher social status (A-C), live in bigger cities, and are specialists, managers or students. Mobile consumption is rising every year, although Lithuania still lags Western Europe. Nevertheless, about half of Lithuania's population have smartphones – and this number is growing.

The favourite mobile ad formats are animated banners and video.

Only 0.2% of the population (around 5,000 people) have a wristband device and 0.5% a smartwatch, so these are still relatively niche interests. If the prices of these sorts of devices come down a little, they could start to become much more popular.

In coming years, we expect to see more and more people in older age groups using mobile devices and for these devices to gradually replace stationary computers.

The main mobile service providers in Malaysia are Maxis, Celcom, Digi and U-Mobile. Popular apps and services include Google, Facebook, Twitter, Instagram, inMobi, Vserve and Waze, Mobme and Imagine Mobile.

	Mobile phone demographics (%)
Male	57
Female	43
Malay	65
Chinese	17
Urban	62
Rural	38

Source: Malaysian Communications and Multimedia Commission 2014

	Mobile phone ownership (% of each age group)
Less than 15 years old	1.8
15–19 years old	10.0
20–29 years old	35.1
30–39 years old	22.7
40–49 years old	15.5
50–59 years old	9.4
Over 59 years old	50.1

Source: Malaysian Communications and Multimedia Commission 2014

Trend reports (from Comscore, GWI, TNS) reveal that Malaysians have increased their access to the internet via mobile devices - from 23% in 2012 to 45% today - and decreased access via desktop/laptop.

Mobile devices are most commonly used for the following types of advertising: location-based ads; SMS advertising; video advertising; social media; display banners (both standard and rich banner); interstitials; and interactive ads.

There are more options available in the mobile market today compared to five years ago. Commonly used features include location-based ads, high impact ads (for example, rich banner with video) and interactive formats (shake and tilt ads, scratch mobile screen to unveil xxx, etc.)

Clients have also moved into real-time dynamic ads, for example, working with a weather-API website to serve ads according to the weather of the day, every day.

Some combine more than one feature, such as a telecoms company serving real-time dynamic ads in an airport, trying to capture new users - especially foreigners - entering the market. Ads are published within 'x' metre radius from the arrival hall using location-based technology.

Mobile will grow further in terms of usage. Malaysia's mobile penetration rate has already exceeded 150%, and the trend has not accelerated in recent years compared to five years ago. Phone call ARPUs have declined over time. Hence, telecom companies are inclined to push data plans (to increase usage per head), rather than to focus on heavy recruitment.

Indications of the positive growth of mobile include:

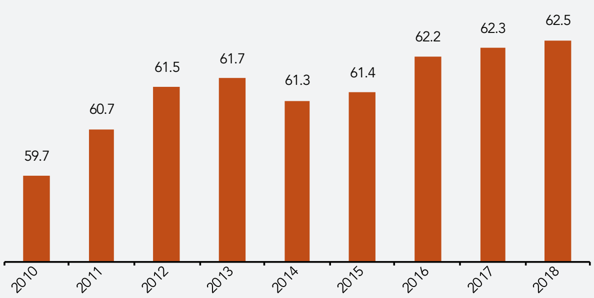
- Offering data plans with a free device is now very common. The more features/screen size a phone offers, the larger the data plan being bundled.
- More data sizes have been offered in the last one and a half years with no subscription price increase.
- Appetite for video viewing has also increased over time.
- So has usage of broadband at home, or wifi in public places. Mobile is the key device used apart from desktop/laptop in these areas.
- The second screen trend has increased (70% of internet users use their mobile as a second screen while watching TV, compared to 37% via desktop).
- Mobile apps are increasingly being connected to non-mobile devices or for lifestyle reasons – for example, Spotify in our car, wrist wearables, banking accounts and government-related facilities (car park paying app, etc.).

Mexico

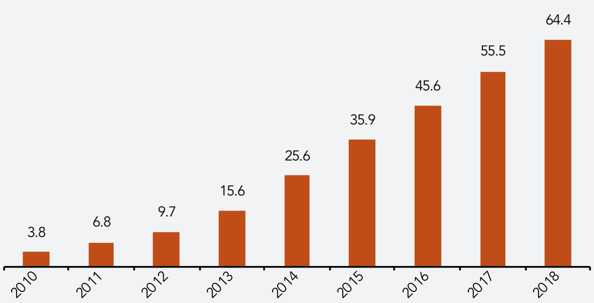
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	12.7	21.1	33.8	42.7	52.0	57.9	62.5	66.0	68.8
Tablet penetration (%)	2.2	5.0	15.6	25.7	37.0	39.0	39.5	40.0	40.5
Internet - Average daily minutes of consumption	221	234	247	256	266	280	296	308	320
Mobile internet - Average daily minutes of consumption	132	142	152	158	163	172	184	192	200
% of average daily internet consumption via mobile	59.7	60.7	61.5	61.7	61.3	61.4	62.2	62.3	62.5
Total advertising expenditure (MXN m)	221.1	309.6	442.7	619.8	805.8	1,007.2	1,188.5	1,366.8	1,530.8
% of Total adspend delivered via mobile	3.8	6.8	9.7	15.6	25.6	35.9	45.6	55.5	64.4
Adspend delivered via mobile devices (MXN m)	8.4	21.0	43.0	97.0	206.5	361.3	542.0	758.7	986.4

Source: E-Marketer, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



Mexico's mobile market will grow 1.9% this year.

America Móvil remains dominant in the market, with a 68% share, while Movistar has 23.1% and AT&T has 8.1%, according to The Competitive Intelligence Unit (CIU).

Mobile telecommunications operators generated MXN140 per user of its services during the fourth quarter of 2015, equivalent to an annual decrease of 8.8%, partly driven by a general fall in prices.

85% of smartphone respondents use a wi-fi connection to watch digital; just 15% do so via mobile network. According to InMobi, games and entertainment are the categories that had the largest impressions shares in 2015, with more than 37% each.

Smartphones were the most commonly used device to connect to the web; laptop ownership slipped nine percentage points to 58%, while desktop dropped by 11 percentage points (according to IAB México and Millward Brown).

For agencies and brands, the fact that mobile devices like smartphones use LTE technology is a revolution in generating content. At the end of 2015, according to the Visual Network Index (VNI) of Cisco6, more than half (55%) of mobile data traffic in Latin America consisted of reproductions of videos, and by 2020 this could be as high as 70%. The rate of mobile connections in several countries in the region will be multiplied by four or more by the end of the decade, according to Google.

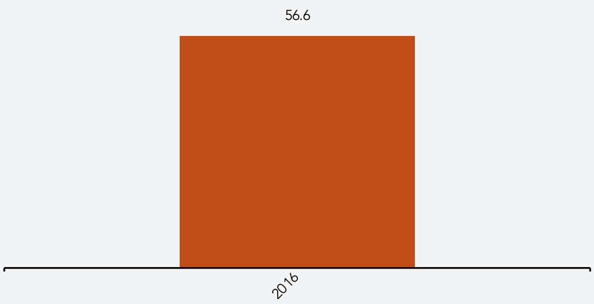
Mobile participation in Mexico continues to grow this year as the options for those using them have increased, i.e. having options to pay anywhere in the cell, as already happens in other countries, including Japan. Augmented reality will be an important factor in 2017.

New Zealand

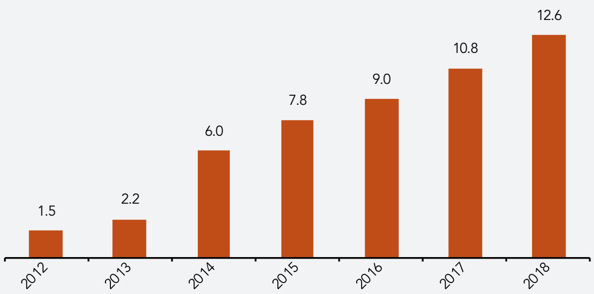
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	9.9	41.2	45.1	50.0	60.0	70.0	73.5	77.2	81.0
Tablet penetration (%)	-	2.8	8.6	18.8	20.7	22.8	25.0	27.6	30.3
Internet - Average daily minutes of consumption	68	70	83	90	100	128	132	142	145
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	-	75	-	-
% of average daily internet consumption via mobile	-	-	-	-	-	-	56.6	-	-
Total advertising expenditure (NZ$ m)	2,029	2,074	2,065	2,176	2,349	2,349	2,379	2,426	2,444
% of programmatic adspend going to mobile									
% of Total adspend delivered via mobile	-	0.03	1.5	2.2	6.0	7.8	9.0	10.8	12.6
Adspend delivered via mobile devices (NZ$ m)	-	1	31	47	142	183	214	261	309
Mobile display	-	*1*	*3*	*6*	*12*	*15*	*18*	*20*	*30*
Mobile classified	-	-	-	-	*27*	*43*	*52*	*70*	*90*
Mobile search	-	-	*28*	*41*	*103*	*125*	*144*	*171*	*189*

Source: Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



The main mobile service providers are Vodafone, Spark, 2Degrees and Skinny mobile.

The most common mobile formats are micro moments, native, in-feed, video, display, interstitial and geo-location.

Mobile is complementary to outdoor and TV. It is becoming common to access the internet using a mobile device while watching TV, and using location-based mobile advertising in combination with bus stops and billboards to deliver a consistent message to consumers is highly effective.

New trends in mobile advertising include using the in-built accelerator to create motion in advertising positions; using beacons for interaction with outdoor ads and at the point of sale; geo-fencing; and using look-back data based on the device ID for personalised advertising.

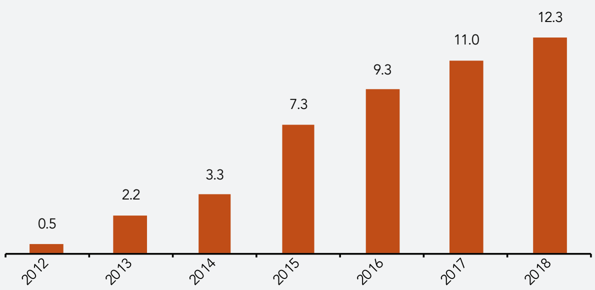
Augmented reality, virtual reality and 360 experience will be coming to the mobile ad market soon.

Norway

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	33.0	54.0	66.0	72.2	81.0	83.4	85.9	88.5	91.2
Tablet penetration (%)	2.0	11.0	28.6	44.2	56.8	58.5	60.3	62.1	63.9
Total advertising expenditure (NOK m)	14,598	15,687	15,949	16,356	16,425	16,425	16,530	16,570	16,858
% of Total adspend delivered via mobile	-	-	0.5	2.2	3.3	7.3	9.3	11.0	12.3
Adspend delivered via mobile devices (NOK m)	-	-	84	356	543	1,204	1,537	1,820	2,069
Mobile display	-	-	*84*	*356*	*543*	*1,204*	*1,537*	*1,820*	*2,069*

Source: Zenith

Mobile as % of total adspend

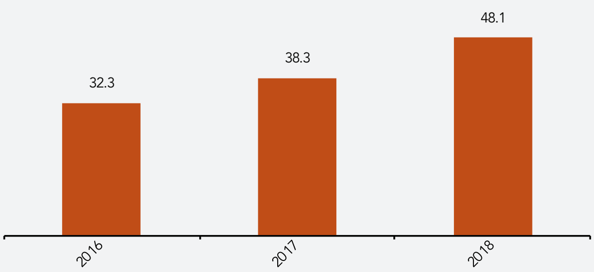


Poland

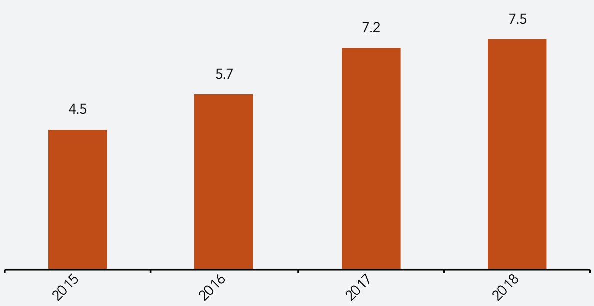
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	22.6	30.4	37.7	43.3	48.5	52.3
Tablet penetration (%)	-	-	-	0.0	18.5	24.2	28.9	32.3	34.7
Internet - Average daily minutes of consumption	-	-	-	-	-	-	162	182	202
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	-	52	70	97
% of average daily internet consumption via mobile	-	-	-	-	-	-	32.3	38.3	48.1
Total advertising expenditure (PLN m)	7,000	7,141	6,747	6,392	6,545	6,729	6,933	7,166	7,395
% of programmatic adspend going to mobile	-	-	-	-	-	5.0	13.0	20.0	28.0
% of Total adspend delivered via mobile	-	-	-	-	-	4.5	5.7	7.2	7.5
Adspend delivered via mobile devices (PLN m)	-	-	-	-	-	306	394	516	552

Source: Gemius/PBI, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



Better infrastructure and faster data connections allow consumers to view mobile video even when they are not connected to a Wi-Fi network. Mobile video content has become important for advertisers, giving them an ideal opportunity to provide compelling and concise messages to consumers with short attention spans. 56% of Poles watch video on their smartphones, and 26% watch on their tablets.

It is not unusual for brands to offer their own mobile apps, but it will become more important for these apps to offer real utility to consumers, generating brand loyalty and enabling personalised communication.

Women are slightly more likely to own smartphones than men.

Android is the dominant mobile operating system in Poland, running on about 65% of smartphones, followed by Windows, which runs on 16% of smartphones.

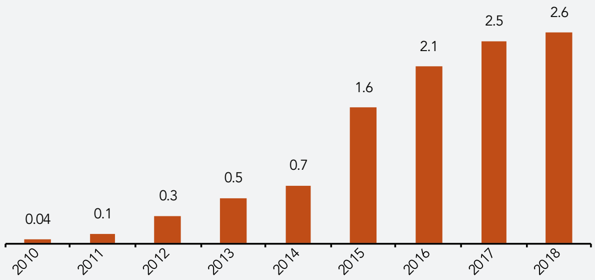
Smartphones accompany their users throughout the day. Usage is lowest between 2am and 5am; it grows as the end of the working day approaches and peaks between 7pm and 8pm.

Romania

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total advertising expenditure (RON m)	345	331	297	288	320	320	351	370	391
% of Total adspend delivered via mobile	0.0	0.1	0.3	0.5	0.7	1.6	2.1	2.5	2.6
Adspend delivered via mobile devices (RON m)	0.2	0.4	1.0	1.6	2.3	5.3	7.5	9.1	10.0
Mobile display	*0.1*	*0.2*	*0.6*	*0.8*	*1.0*	*2.1*	*2.7*	*3.7*	*4.1*
Mobile search	*0.0*	*0.1*	*0.4*	*0.8*	*1.3*	*3.2*	*4.9*	*5.4*	*5.9*

Source: Zenith

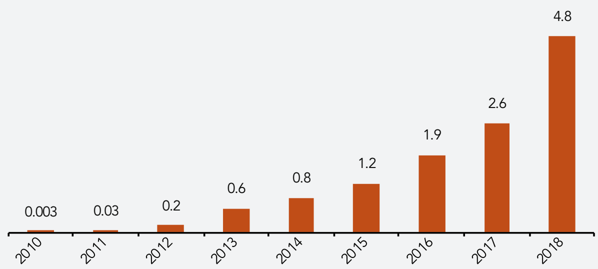
Mobile as % of total adspend



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	19.0	24.0	29.0	32.0	38.0	47.7	60.4	65.5	68.0
Tablet penetration (%)	-	-	0.5	5.0	10.0	16.0	24.7	31.2	35.2
Total advertising expenditure (RSD m)	18,025	17,646	19,665	18,329	19,067	19,067	19,924	20,773	21,974
% of programmatic adspend going to mobile	-	-	-	-	-	10	16	33	42
% of Total adspend delivered via mobile	0.003	0.03	0.2	0.6	0.8	1.2	1.9	2.6	4.8
Adspend delivered via mobile devices (RSD m)	1	5	30	106	159	227	375	550	1,050
Mobile display	*1*	*4*	*23*	*81*	*120*	*171*	*282*	*414*	*790*
Mobile classified	-	-	-	-	*1*	*2*	*4*	*5*	*10*
Mobile search	-	*1*	*7*	*25*	*38*	*54*	*89*	*131*	*250*

Source: Brand Puls, Zenith, iAB Serbia

Mobile as % of total adspend



Serbia has three mobile service providers - two international companies, and one domestic one, which developed from the previously existing public telecommunications company. These are:

- Telenor (100% owned by Telenor Group)
- Vip Mobile (100% owned by Telekom Austria)
- MTS - Mobile Telephony of Serbia (100% owned by Telekom Srbija)

With penetration of 130.76% and steady growth of 2% per year, over 90% of people use mobile phones. Smartphone penetration is at around 60% but is growing significantly.

Both sexes are equally represented in the mobile phone-using population, which nevertheless skews slightly towards high-school educated, younger people living in the northern regions of the country and in urban areas.

Display is still the dominant type of mobile advertising, especially on local news/portal applications.

The second-screen habit is noticeable among the younger population. Sharing experiences, impressions about TV programmes and especially sports matches on social networks as it happens are becoming standard among this group. Checking social networks on a smartphone is one of the most popular multi-tasking activities performed while watching TV.

Programmatic advertising has been available since the end of 2015, so is still very new.

Slovakia

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	29.3	32.4	44.7	50	52	55
Tablet penetration (%)	-	-	1.7	3.7	16	22.2	22.5	23	24
Internet - Average daily minutes of consumption	34	43	61	76	79	75	78	81	85

Source: MML-TGI SR

There are three main mobile providers in Slovakia: Orange, Telekom and O2. These have been joined by a new provider called 4ka. There are also three virtual providers: Tesco Mobile, FunFon (owned by Orange) and Juro (owned by Telekom).

Mobile devices are used by the whole population, but the younger the person, the more they use mobile internet. Young people are becoming accustomed to seeing the mobile internet as an everyday necessity.

High-speed (4G/LTE) internet connections are becoming cheaper and have greater coverage. More low-price models of smartphones and tablets are becoming available.

Mobile advertising most frequently takes the form of advertising in apps, advertising on mobile versions of webpages and advertising on standard formats, which are visible as normal on mobile devices.

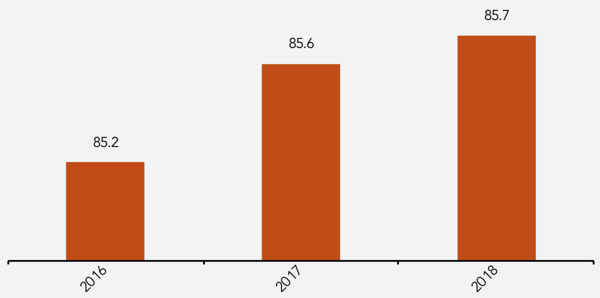
It is clear that mobile consumption is growing rapidly and is displacing some traditional media consumption, but there are no data available to quantify these trends.

Spain

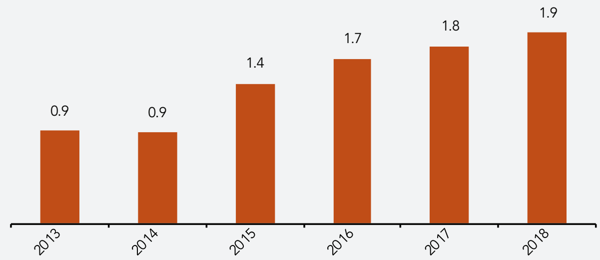
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	37.6	51.0	65.8	78.2	86.7	87.0	87.5	88.0	88.5
Tablet penetration (%)	-	-	11.9	24.7	31.8	32.0	32.3	32.5	32.8
Internet - Average daily minutes of consumption	57	63	73	90	100	103	124	125	126
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	-	106	107	108
% of average daily internet consumption via mobile	-	-	-	-	-	-	85.2	85.6	85.7
Total advertising expenditure (€ m)	5,858	5,505	4,631	4,261	4,671	5,017	5,315	5,622	5,963
% of programmatic adspend going to mobile	-	-	-	2.4	6.0	18.0	34.0	40.0	46.0
% of Total adspend delivered via mobile	-	-	-	0.9	0.9	1.4	1.7	1.8	1.9
Adspend delivered via mobile devices (€ m)	-	-	-	40	43	71	89	101	115
Mobile display	-	-	-	*28*	*33*	*35*	*45*	*56*	*64*
Mobile search	-	-	-	*12*	*10*	*37*	*44*	*45*	*51*

Sources: Mobilens, EGM, comScore, Infoadex, IAB, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



In Spain, the main mobile service provider is Movistar, followed by Vodafone. According to CNMC's 2015 report, Movistar had a market share of 31.6%, more than two percentage points down on 2014. On the other hand, Vodafone (25.5%) increased its market share by two points following its acquisition of Ono. In third position is Orange, whose market share has not moved much (22.7%).

Mobile devices are extensively used by the Spanish population (87% of people). Generally, more people under the age of 44 use mobile devices to access the internet and high- and middle- social class.

Mobile ads often follow the desktop ads pattern, though adjusted to the mobile device's unique features. Integrated ads, interstitials, interactive ads or video ads are the most commonly used. Nevertheless, smartphones are very personal devices, and often where social networks and instant messaging are our preferred daily activities, so native content is gaining force.

Internet access is changing. Since 2014, mobile has been the most popular way to access the internet, and this trend is increasing year-on-year while access to the internet via PC/laptop is in decline.

In the future, content adjustment to mobile screens and high loading speeds are going to be key factors e.g. Facebook Instant Articles, Google AMP or Pulse. Changes in video (360 and mute) or virtual and augmented reality are also important.

The big revolution is going to come in data: the collection, storage, treatment and mining of data. This data processing should allow us to talk about omnichannel strategies.

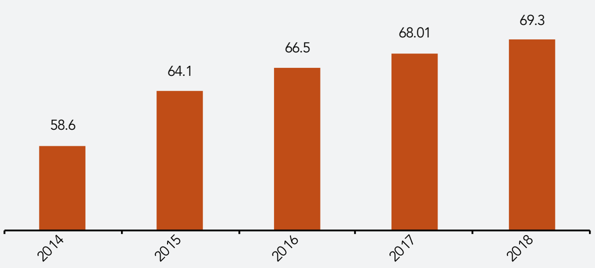
All this adds up to development in mobile payments, biometric technology, usability and voice that could consolidate mobile as an extension of ourselves.

Sweden

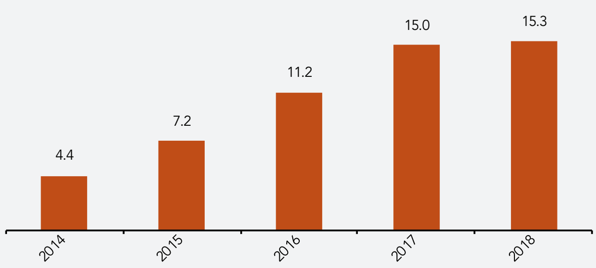
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	36.0	52.0	56.2	65.0	72.0	75.1	78.8	81.2	82.0
Tablet penetration (%)	1.5	7.1	18.8	31.0	50.1	50.4	50.5	51.0	52.0
Internet - Average daily minutes of consumption	79	83	84	88	120	128	131	143	155
Mobile internet - Average daily minutes of consumption	-	-	-	-	51	60	63	65	66
% of average daily internet consumption via mobile	-	-	-	-	58.6	64.1	66.5	68.0	69.3
Total advertising expenditure (SEK m)	23,088	24,756	24,693	24,508	26,566	26,566	28,377	29,963	30,693
% of Total adspend delivered via mobile	-	-	-	-	4.4	7.2	11.2	15.0	15.3
Adspend delivered via mobile devices (SEK m)	63	189	517	1,083	1,174	1,912	3,181	4,504	4,710
Mobile display	-	-	-	-	*603*	*808*	*1,018*	*1,178*	*1,211*

Source: TNS Sifo Orvesto Konsument, IRM

Mobile as % of daily internet consumption



Mobile as % of total adspend



Telia Sonera is the largest mobile provider, accounting for 26.5% of connections. Tele2 is next (with 13.5%), followed by Telenor (12.2%) and 3 (10.3%).

Most of the population uses smartphones, but the young use them more frequently. The mobile internet has a 52% daily reach among 55-80 year-olds.

Common advertising formats include banners, video and social media, with a larger share of budgets going to social media that for desktop advertising.

Mobile internet consumption is taking over from desktop consumption. It is also eroding traditional media, particularly print.

Faster internet connections allow users to consume more data, which has promoted a large increase in video and audio streaming. Social media platforms are introducing innovative formats, such as Facebook 360 video. The internet of things and virtual reality promise new opportunities for marketers in the future.

Mobile internet consumption will continue to increase especially among older users (55+) and the very young (1-5 years old). Mobile expenditure is expected to increase to a quarter of total digital expenditure by 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	34	43	54	65	70	78	86	92
Tablet penetration (%)	-	6	9	23	39	43	47	50	53
Internet - Average daily minutes of consumption	-	-	-	-	-	65	-	-	-
Mobile internet - Average daily minutes of consumption	-	-	-	-	-	24	-	-	-
% of average daily internet consumption via mobile	-	-	-	-	-	36.9	-	-	-
Total advertising expenditure (CHF m)	4,892	5,197	5,316	5,373	5,638	5,638	5,731	5,783	5,880
% of programmatic adspend going to mobile	-	-	-	-	0.0	8.0	12.0	20.0	35.0

Sources: IGEM digiMonitor, Zenith

The main mobile providers in Switzerland are Swisscom, Sunrise and Salt. There is not much competition in the Swiss mobile market, and as a result prices are very high compared to other European markets.

Mobile devices are used by almost everyone aged under 50; there is still growth potential among the over-50s.

Mobile is becoming a regular part of cross-device strategies, especially for video or performance marketing. Mobile display is mostly used to drive awareness at the moment. As cross-device measurement improves it will be able to demonstrate its ability to drive conversions. In-app targeting will have to be improved over the next few years.

The most important technological innovation is mobile payment. Two large competing systems (Paymit and Twint) have been launched in the last few years, but this year all market players have agreed on one standard system for Switzerland, which is Twint. Many points of sale (mainly in grocery stores, post offices and kiosks) have already been equipped with Twint terminals.

As everywhere in the western world, Pokémon GO has been a big success in Switzerland. Although we don't have any usage figures yet, the topic was huge in the media, the app topped the Swiss app store and you can observe people gaming all over Switzerland. We also expect further investment in mobile infrastructure by the providers, so mobile online usage will be even faster and more convenient in the future.

As it's hard to buy a feature phone these days and users normally get a new device every two years, we expect smartphone penetration to rise even more in the next few years – as well as mobile advertising expenditure.

Taiwan

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	7.6	15.0	27.4	45.3	62.8	74.5	83.0	88.0	91.0
Tablet penetration (%)	-	4.4	8.6	15.9	21.9	23.6	24.3	25.0	25.0
Internet - Average daily minutes of consumption	133	131	134	156	188	198	204	208	211
Mobile internet - Average daily minutes of consumption	-	-	-	59	92	110	119	125	128
% of average daily internet consumption via mobile	-	-	-	37.9	49.1	55.7	58.3	60.0	60.9
Total advertising expenditure (TWD m)	58,299	60,451	57,667	59,752	60,921	61,059	59,188	59,820	61,629
Adspend delivered via mobile devices (TWD m)	-	-	605	1,108	2,287	4,926	9,000	14,000	19,000
Mobile display	-	-	*605*	*1,108*	*2,287*	*4,926*	*9,000*	*14,000*	*19,000*

Source: Nielsen Media Research, Digital Marketing Association (DMA), Zenith

There are several mobile service providers in Taiwan. Chunghwa Telecom, Taiwan Mobile, and Far Eastone are the largest three. Taiwan Star Telecom and Asia Pacific Telecom are relatively new to the market and are trying to win over subscribers from the largest three.

The distribution of male and female mobile users is quite even. In general, people aged 20-39 are the most active users. Mobile internet is popular across the island, but is most heavily used in the north.

Display ads and video ads are most common advertising formats in Taiwan. Video ads are enjoying explosive growth owing to mature 4G network that allows rapid transmission of data. According to data from a digital ad vendor, nearly 80% of promotion content is in the form of video ads. Advertisers are also increasing expenditure on interstitial ads rather than traditional banners. Interstitial ad expenditure accounts for nearly half of the display advertising in 2015, up from only 21% in 2014.

Mobile internet consumption is growing ferociously. The Taiwanese are spending more time on mobile devices than ever before. We expect the average consumer to spend two hours a day using mobile internet in 2016, twice as much as in 2013. The consumption of all other media is shrinking as mobile internet use takes up more and more of the consumer's day.

The smartphone has not only become the primary screen for internet use, but it is going to become the primary platform for payment in the near future. Mobile payment currently is not that popular among Taiwanese consumers, but the government is determined to promote financial technology, and many players from different industries (banking, gaming, credit cards, e-commerce and telecom) are competing to grab a share of the prospective market.

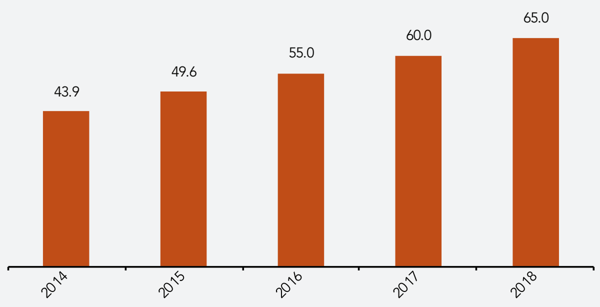
Mobile devices will develop into hubs connecting everything. Wireless technology has made machine-to-machine connectivity possible. And mobile devices will play an important role connecting the internet of things and making them central to the consumer's daily life.

Thailand

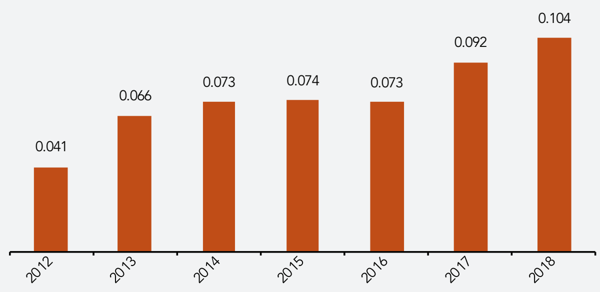
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	-	28.2	44.4	48.0	50.0	54.0
Tablet penetration (%)	-	-	-	-	3.7	3.4	2.8	3.0	3.0
Internet - Average daily minutes of consumption	118	127	131	132	148	158	168	178	189
Mobile internet - Average daily minutes of consumption	0	0	0	0	65	79	92	107	123
% of average daily internet consumption via mobile	0.0	0.0	0.0	0.0	43.9	49.6	55.0	60.0	65.0
% of programmatic adspend going to mobile	107,066	110,527	121,351	121,963	134,594	134,594	137,700	141,006	144,313
% of Total adspend delivered via mobile	-	-	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Adspend delivered via mobile devices (THB m)	-	-	*50*	*81*	*98*	*99*	*100*	*130*	*150*

Source: AGBNielsen IMS, Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



The main mobile carrier is AIS (Advanced Info Service plc).

Smartphone usage is most common among 15-30 year-olds.

The most common mobile ad formats are Admob (banners in mobile apps), Facebook News Feed posts, and mobile search.

Mobile internet consumption is growing at the expense of all other media, including desktop. Mobile video viewing is displacing viewing of traditional TV.

The new i-beacon technology allows advertisers to link mobile apps with the user's location.

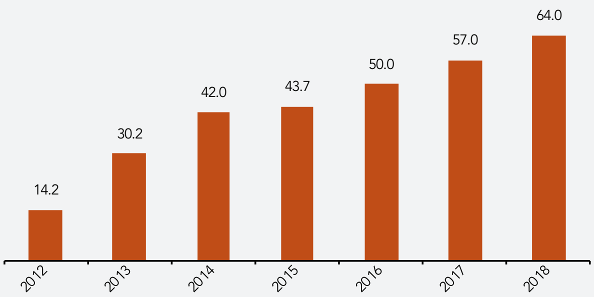
In future, the mobile device will be the consumer's central service platform, facilitating payments (through Line Pay and NFC), e-commerce, transit (Uber and Grab) and deliveries (Scootar, Line Man and Lalamove).

United Kingdom

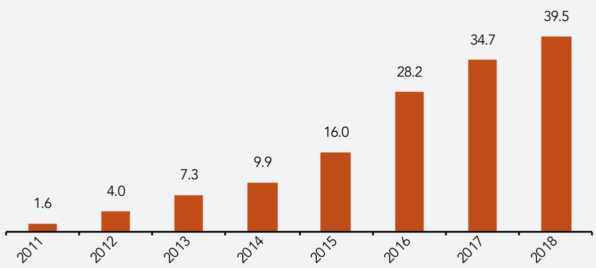
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	23.0	31.0	41.0	43.0	49.0	55.0	60.0	65.0	69.0
Tablet penetration (%)	3.5	9.4	20.1	29.7	39.7	51.0	58.4	62.8	65.3
Internet - Average daily minutes of consumption	82	88	93	110	127	199	213	224	231
Mobile internet - Average daily minutes of consumption	-	-	13	33	53	87	107	128	148
% of average daily internet consumption via mobile	-	-	14.2	30.2	42.0	43.7	50.0	57.0	64.0
Total advertising expenditure (£ m)	12,136	12,531	13,065	13,777	16,290	16,290	17,166	17,742	18,492
% of programmatic adspend going to mobile	-	-	-	25.3	30.2	33.1	35.2	38.7	40.2
% of Total adspend delivered via mobile	-	1.6	4.0	7.3	9.9	16.0	28.2	34.7	39.5
Adspend delivered via mobile devices (£ m)	-	197	518	1,005	1,606	2,601	4,848	6,154	7,301
Mobile display	-	*60*	*153*	*424*	*769*	*1,287*	*1,739*	*2,237*	*2,796*
Mobile search	-	*137*	*365*	*581*	*837*	*1,314*	*3,109*	*3,918*	*4,505*

Source: Zenith

Mobile as % of daily internet consumption



Mobile as % of total adspend



Consolidation is the watchword at the moment in the UK mobile phone market. In July 2015, EE declared that the process of merging Orange with T-Mobile had finally come to an end, only for BT to buy the business in January 2016. Meanwhile, Hutchison's bid for O2 was rejected by the EU authorities on competition grounds. Owners Telefónica had hoped to sell to pay down its debt pile, but finally admitted defeat after the Brexit vote created an aura of uncertainty and has shelved plans to sell O2 for now.

In Q1 2016, around 66% of people used their mobile handset to access the internet, up from 61% in Q1 2015 and 57% in Q1 2014.

Mobile viewing is currently dominated by short form content and is used as a channel to dip in and out of. However, we are already seeing a shift in the way people are consuming longer form content.

The uptake of SkyGo's services shows that people are increasingly looking to watch premium content on the move. This is a trend that will continue, but will be limited by technology and the data packages available in the market.

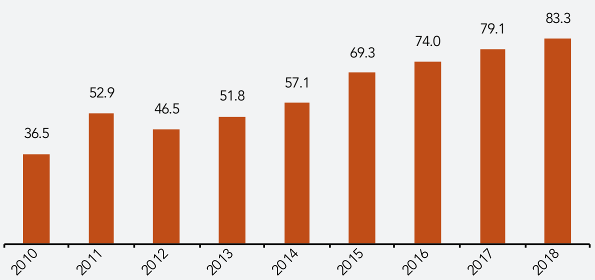
As these costs start to reduce we will see a rise in the amount of content consumed on mobile devices.

The real breakthrough will be when we start to see more robust solutions to multi device linking. Consumers will be looking to seamlessly switch between multiple devices in different locations whilst watching a single piece of content. The consumer journey and targeting capabilities this will allow will be the real breakthrough moment in mobile video.

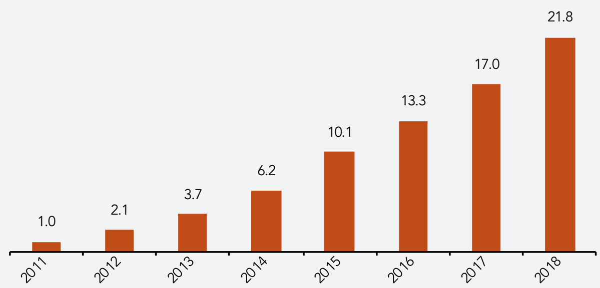
United States of America

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	33.5	45.8	46.3	53.6	59.3	63.9	67.3	69.6
Tablet penetration (%)	-	13.1	17.6	41.8	46.7	49.4	51.4	52.7	53.7
Internet - Average daily minutes of consumption	85	85	127	141	154	179	196	215	234
Mobile internet - Average daily minutes of consumption	31	45	59	73	88	124	145	170	195
% of average daily internet consumption via mobile	36.5	52.9	46.5	51.8	57.1	69.3	74.0	79.1	83.3
Total advertising expenditure (US$ m)	152,116	154,647	161,815	167,936	176,236	182,615	190,691	197,962	204,861
% of programmatic adspend going to mobile	-	-	15	30	52	60	65	70	75
% of Total adspend delivered via mobile	-	1.0	2.1	3.7	6.2	10.1	13.3	17.0	21.8
Adspend delivered via mobile devices (US$ m)	-	*1,513*	*3,463*	*6,250*	*10,851*	*18,439*	*25,361*	*33,649*	*44,699*
Mobile display	-	*783*	*1,237*	*1,905*	*2,914*	*4,459*	*5,524*	*7,047*	*9,055*
Mobile video	-	*107*	*340*	*659*	*1,079*	*1,943*	*3,017*	*5,341*	*8,403*
Mobile classified	-	*33*	*65*	*129*	*473*	*638*	*811*	*1,034*	*1,311*
Mobile search	-	*492*	*1,479*	*2,708*	*4,289*	*6,246*	*8,722*	*9,594*	*10,554*
Mobile radio	-	*16*	*35*	*78*	*256*	*680*	*816*	*1,026*	*1,190*
Mobile podcast	-	*33*	*33*	*33*	*33*	*34*	*34*	*36*	*37*
Mobile social media	-	*50*	*273*	*738*	*1,806*	*4,439*	*6,436*	*9,571*	*14,148*

Mobile as % of daily internet consumption



Mobile as % of total adspend



The United States is one of the largest mobile markets in the world. Currently the United States accounts for 12% of all worldwide smartphone shipments, second only to China. In 2016, 63.9% of A18+ used a smartphone and 51.4% used a tablet. With many mobile users continuing to 'trade up' (the practice of trading in older smart phones for newer models), these numbers are only expected to grow. By 2018 69.6% of the population is expected to be using a smartphone and 53.7% will be using tablets. With increased device penetration, mobile now represents 65% of digital media time. Conversely, desktop has lost 12 percentage points since 2013 and has fallen to 35 percent of digital time spent in 2016. According to comScore, mobile now represents almost two out of three digital media minutes, and smartphone apps alone are approaching half of all digital time spent.

With an average age of 41, a median HHI of US$73K and a fairly even split between male and female, mobile users continue to flock to Verizon and AT&T. Verizon and AT&T dominate the market with a 35% and 32% market share respectively in Q2 2016. T-Mobile's 4G LTE network expansion has continued to fuel its growth, which now stands at 17%, up from 10% in 2012. Samsung and Apple are the two main vendors in the US smartphone market. As of June 2016, Apple accounted for 43% of all devices used in the country, while Samsung had a 29% share.

In the US, a third of mobile advertising spend comes from paid search as devices become increasingly ubiquitous and are part of people's everyday lives. This, too, has given rise to the increase in mobile social media spending, which now accounts for a quarter of all mobile advertising revenue; two thirds of social media time spent occurs on mobile devices. Display follows, at 22% of all mobile spending, then mobile video at 12%. Although it barely registers a double-digit share, mobile video grew by over 50% from 2015 to 2016 as more advertisers take advantage of the increasing social video options provided by publishers.

United States of America

The future of mobile is bright, with innovation coming from many different places. One major area of growth will be with mobile augmented reality, which is expected to experience massive growth. Many brands have already experimented with AR and with the right strategy, brands have the ability to create an amazing engagement platform by inviting customers to an interactive experience.

Armenia

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	4	6	8	10	12	14	16	18	22
Tablet penetration (%)	4	4	5	7	9	12	14	16	18

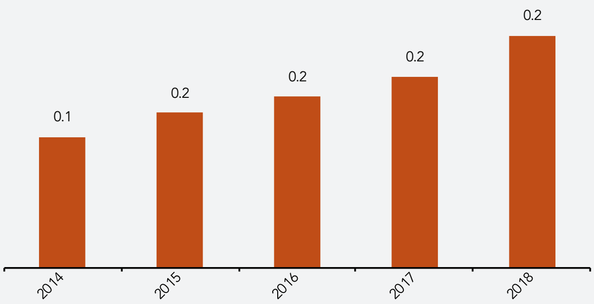
Source: Zenith

Belgium

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total advertising expenditure (€ m)	3,467	3,588	3,609	3,700	3,764	3,824	4,033	4,126	4,234
% of Total adspend delivered via mobile	-	-	-	-	0.1	0.2	0.2	0.2	0.2
Adspend delivered via mobile devices (€ m)	-	-	-	-	5	6	7	8	10
Mobile search	-	-	-	-	*5*	*6*	*7*	*8*	*10*

Source: Zenith

Mobile as % of total adspend



Brazil

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	10.0	14.0	18.2	23.3	31.4	36.2	41.6	47.8	55.0
Tablet penetration (%)	0.1	0.6	2.0	4.9	6.0	6.9	7.9	8.6	9.3

Source: Zenith

Chile

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	8.4	18.2	28.5	36.1	50.2	57.3	63.6	69.3	71.4

Sources: Ministerio de Transportes y Telecomunicaciones - Subsecretaría de Telecomunicaciones

Costa Rica

	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	6	16	26	36	46	56	66	76

Source: Zenith

Other markets

Czech Republic

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	10.0	18.0	27.0	32.0	37.0	43.0	50.0	55.0	60.0
Tablet penetration (%)	0.1	1.0	2.6	10.0	19.0	27.0	30.5	34.0	38.0

Source: MML TGI

Demographics (%)

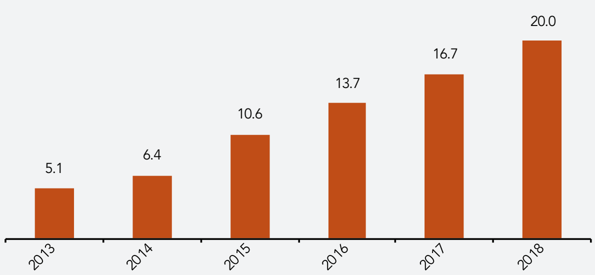
	Have/use a mobile phone	Have a smartphone	Main user of tablet at home
Men	49.2	51.1	50.3
Women	50.8	48.9	49.7
12-15 years	2.3	2.6	4.6
16-24 years	13.5	22.4	18.0
25-34 years	16.8	22.7	22.1
35-44 years	21.7	26.4	23.2
45-54 years	13.6	13.0	13.4
55-64 years	17.0	8.4	11.0
65-79 years	15.1	4.5	7.7
Primary school education	20.2	17.3	16.6
Trained/high school without GCE	33.7	26.9	28.0
High school with GCE	32.8	38.5	37.9
University/college	13.3	17.3	17.6

Ireland

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	35.0	50.0	71.0	83.0	90.0	92.0	93.0	94.0
Tablet penetration (%)	-	8.0	15.0	24.0	35.0	50.0	56.0	60.0	62.5
Total advertising expenditure (€ m)	770	737	736	715	775	836	903	978	1,061
% of Total adspend delivered via mobile	-	-	-	5.1	6.4	10.6	13.7	16.7	20.0
Adspend delivered via mobile devices (€ m)	-	-	-	36	50	89	124	163	212
Mobile display	-	-	-	*12*	*21*	*30*	*49*	*67*	*90*
Mobile classified	-	-	-	*9*	*10*	*9*	*11*	*14*	*20*
Mobile search	-	-	-	*16*	*19*	*50*	*64*	*82*	*103*

Source: comScore, Radical, Core Media outlook

Mobile as % of daily internet consumption



Netherlands

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	32.0	44.0	57.2	67.0	70.4	73.2	74.6	76.0	77.1
Tablet penetration (%)	10.0	14.0	34.0	53.0	58.3	64.1	70.5	74.0	75.0
% of programmatic adspend going to mobile	-	-	3	12	26	29	32	35	38

Source: Zenith

Pakistan

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	1.7	2.5	3.5	5.0	9.0	11.0	12.0	13.0	14.0

Source: Zenith

Panama

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	1	11	21	31	41	51	61

Source: Zenith

Peru

The main service providers in Peru are Telefonica, Claro, Entel, Bitel and Virgin. We expect new service providers to enter the market, increasing competition and leading to lower prices and higher penetration.

The mobile ad formats most commonly used are display, video, social and geolocation.

Mobile internet use is complementing the consumption of other media, not replacing it. Mobile advertising can work well with and support advertising in other media.

The use of messaging platforms (such as Whatsapp and Facebook Messenger) and video platforms (such as YouTube and Snapchat) is becoming common.

Augmented reality promises to provide new opportunities to communicate engagingly with consumers.

Philippines

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	4.1	4.2	9.0	18.7	24.5	37.3	46.6	58.3
Tablet penetration (%)	-	-	0.2	1.4	3.9	4.3	5.7	6.2	7.5

Source: Nielsen Consumer and Media Views; Media Index

Portugal

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	31.4	40.9	52.0	62.4	68.6	75.5
Tablet penetration (%)	-	-	3.8	8.8	15.1	21.1	25.4	30.4	36.5

Source: Zenith

Other markets

Russia

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	-	27.3	39.0	42.9	46.6	50.4	54.2
Tablet penetration (%)	-	-	-	19.2	25.3	26.7	28.2	30.1	32.2
% of programmatic adspend going to mobile	-	-	7	7	8	24	25	25	26

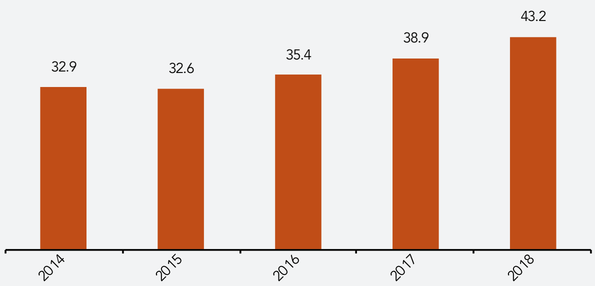
Source: Zenith

Singapore

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	70.0	72.0	79.5	87.0	89.0	90.0	90.5	91.0	91.5
Tablet penetration (%)	4.0	8.0	17.0	47.0	64.0	70.0	75.0	78.0	81.0
Internet - Average daily minutes of consumption	-	-	-	-	419	377	401	437	493
Mobile internet - Average daily minutes of consumption	-	-	-	-	138	123	142	170	213
% of average daily internet consumption via mobile	-	-	-	-	32.9	32.6	35.4	38.9	43.2

Source: Nielsen, Zenith

Mobile as % of daily internet consumption

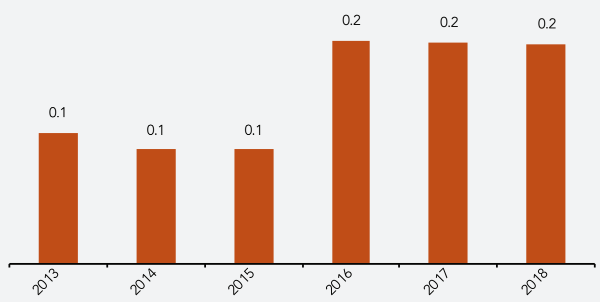


Slovenia

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	-	-	23	32	44	55	60	64	67
Tablet penetration (%)	-	-	7	15	15	17	19	20	21
Total advertising expenditure (€ m)	621	664	649	754	868	868	881	890	896
% of Total adspend delivered via mobile	-	-	-	0.1	0.1	0.1	0.2	0.2	0.2
Adspend delivered via mobile devices (€ m)	-	-	-	1	1	1	2	2	2
Mobile display	-	-	-	*1*	*1*	*1*	*2*	*2*	*2*

Source: TNS, Zenith

Mobile as % of total adspend



South Africa

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	11.2	15.8	21.9	37.2	47.8	51.1	61.9	70.8	79.7
Tablet penetration (%)	-	-	1.8	3.7	5.5	8.9	10.8	13.1	15.4

Source: AMPS

South Korea

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	14.5	42.5	60.0	79.7	82.3	83.0	83.5	83.9	84.2
Tablet penetration (%)	1.0	3.1	7.5	13.9	18.2	20.2	22.0	23.6	25.0

Source: Zenith

Turkey

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	21.3	25.5	26.1	29.6	42.0	59.0	64.0	68.0	73.0
Tablet penetration (%)	-	-	0.8	3.0	5.0	8.0	10.0	12.0	14.5

Source: Zenith

Other markets

Ukraine

	2011	2012	2013	2014	2015	2016	2017	2018
Smartphone penetration (%)	6.7	12.6	17.5	25.2	27.0	30.0	32.0	34.0
Tablet penetration (%)	1.0	1.9	4.5	9.5	13.4	15.4	17.2	18.7

Source: Zenith

Venezuela

	2014	2015	2016	2017	2018
Smartphone penetration (%)	36.0	45.0	46.0	46.0	46.0
Tablet penetration (%)	-	5.0	7.0	8.4	10.1

Source: Zenith

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