

NET NEUTRALITY AND THE INTERNET ECONOMY IN SLOVENIA

PRESENTATION FOR AKOS

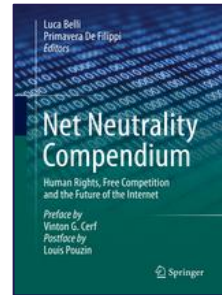
24 JUNE 2016, ROSLYN LAYTON



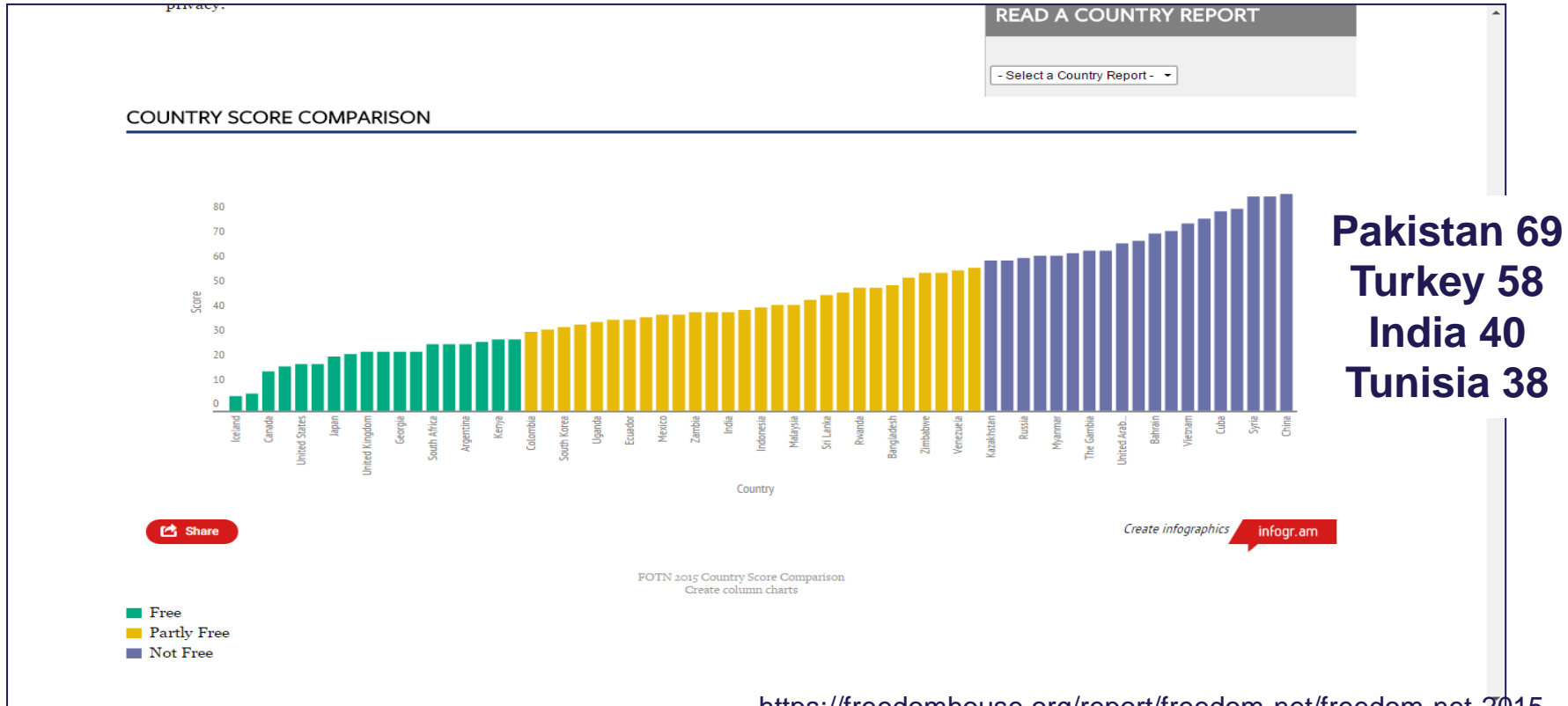
AALBORG UNIVERSITY
DENMARK

Roslyn Layton

- PhD Fellow, Center for Communication, Media and Information Technologies, (CMI) Dept of Electronic Systems, Aalborg University
- 3 year industrial research grant from Danish Innovation Fund to collect empirical evidence about net neutrality around the world
- Test EU net neutrality law: "Guarantee internet as an engine of innovation"
- Technical Framework: data science
- Teachers: Bengt Åke Lundvall ("learning economy", National Innovation System), William Melody (regulatory economist, LIRNE, FCC), Simone Celant (data scientist, La Sapienza, Italy)
- Supervisory Committee: Knud Erik Skouby (5G, mobile in developing countries), Bill Lehr (economist, MIT, USA), Peter Lundgreen (engineer, Denmark Technical University), Jan Fagerberg* (economist, University of Bergen, Norway)



In spite of Open Internet rules in 50 countries, 5 year decline in Internet Freedom (below obstacles experienced)



<https://freedomhouse.org/report/freedom-net/freedom-net-2015>

Rules around the world (pre April 2016)

SOFT LAW	LEGISLATION	REGULATION
<p>NORDICS JAPAN, KOREA UK, FRANCE SWITZERLAND</p>	<p>LATIN AMERICA SLOVENIA NETHERLANDS EU (APR 2016)</p>	<p>USA CANADA</p>
<p>Focus on user rights (closest to Wu paper)</p>	<p>Focus on prohibitions, punishments, asymmetric "regulate my rival"</p>	
<p>No litigation</p>	<p>Some litigation</p>	<p>Much litigation</p>
<p>Little to no violation Carrot & stick approach Best/longest track record since 2009</p>	<p>price controls, privacy regulation, bans on technologies, zero rating wars (none of this was part of what Tim Wu described)</p>	



Trojan Horse of net neutrality

Tim Wu 2003

- Design principle/"Neutral platform"
- Last mile
- **Right of users to access content, services, applications of their choice**
- Operator should not interfere with users' use but can "police what they own"
- A hard rule only if necessary (ok if operators uphold the principle on their own)

FCC's Open Internet Order 2015

- Industrial regulation
- Last mile + interconnection
- **Prohibitions/punishments on broadband providers**
- No blocking (price control)
- No throttling (price control)
- No paid prioritization (ban on competitive technologies)
- No unreasonable conduct (open ended authority to police anything)
- Transparency
- Privacy (block to market entry)
- No limiting principle



FCC's Open Internet Order is an "Economics-free zone"

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'Economics-Free' Obamanet

The White House and FCC acted on pure ideology. Cost-benefit analysis? What's that?

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HEALTH CARE 2025: READY FOR THE FUTURE?

By 2025, health care benefits will change. Find out how.

EXPLORE

President Obama with Tom Wheeler; his then-nominee to head the Federal Communications Commission, May 1, 2013. PHOTO: ANDREW HANCOCK/REUTERS

By L. GORDON CROVITZ
Jan. 31, 2016 6:20 p.m. ET **39 COMMENTS**

A Technology Policy Institute conference last month turned into something of a roast. Economist Tom Hazlett proposed a mischievous toast to "our friend, former FCC chief economist Tim Brennan, who wrote every word" of the Federal Communications Commission's new regulations over the Internet. Mr. Brennan denied any involvement with the heavy-handed rules: "Nothing the FCC says necessarily represents the views of Tim Brennan or his staff." He called the rules "an economics-free zone."

**United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

Argued December 4, 2015 Decided June 14, 2016

No. 15-1063

UNITED STATES TELECOM ASSOCIATION, ET AL.,
PETITIONERS

v.

FEDERAL COMMUNICATIONS COMMISSION AND UNITED
STATES OF AMERICA,
RESPONDENTS

INDEPENDENT TELEPHONE & TELECOMMUNICATIONS
ALLIANCE, ET AL.,
INTERVENORS

Consolidated with 15-1078, 15-1086, 15-1090, 15-1091,
15-1092, 15-1095, 15-1099, 15-1117, 15-1128, 15-1151,
15-1164

On Petition for Review of the Federal Communications Commission's Order

Peter D. Keisler
States Telecom Ass'n
briefs were *Michael A. Estrada, Theodore*

One prominent critic of the ban on paid prioritization—Timothy Brennan, the Commission's chief economist at the time the Order was initially in production, who has called the rules "an economics-free zone"⁵—offered an alternative that addressed these concerns. His argument goes as follows. If some potential content providers might refrain from entry for fear that poor service might stifle advantageous interactions with other sites (thus thwarting the virtuous cycle), that fear could be assuaged by requiring that ISPs meet minimum quality standards. Brennan writes that



VOIP pioneer suing FCC over Open Internet Order, says ban on prioritization violates free speech, makes his app unworkable



Dan Berninger



U.S. Supreme Court



Why compare Denmark and Netherlands on Net Neutrality

Denmark

- Pop 5.5 million/\$60k GDPP
- #1 ITU Digital Nation Index
- #1 EU Scoreboard, egovernance
- **Self-regulation, 2011**
- Previous success with self-regulation on premium SMS
- Operators wanted to "get ahead" of regulation, make better standard
- **User rights**
- **Transparency**
- **Speed quality guarantee**
- No violations on record
- Regulators don't want NN rule and updated competition framework to include intermodal competition with OTT

Netherlands

- Pop 17 million/\$51k GDPP (USA \$53k)
- #6 ITU Digital Nation Index
- #1 OECD intermodal broadband network competition, #3 in EU egovernance
- **Hard law, 2012**
- Law made 2 months after operator mistatement
- **No blocking/throttling**
- **No stand alone services (zero rating), added 2015**
- Vodafone fined €200k for zero rating HBOGo (2014)
- KPN fined €250k for airport wifi settings (2014)
- KPN Spotify deal required to end (2015)
- NL had a 3 year head start on apps because iPhone and Android came to NL first



Which rules create more innovation?

	All apps, DK, NL, 2011-2016		Across 53 countries			USA	Total
	Denmark	Holland	No Rules	Hard Rules	Soft Rules		
Entertainment	15	8	5	0	5	13	46
Finance	10	11	0	0	1	2	24
Games	10	7	86	8	83	87	281
Health-Lifestyle	21	21	5	1	12	6	66
Music	7	0	3	0	13	10	33
News-Weather	5	15	1	0	1	0	22
Other	2	0	0	0	1	6	9
Photo.and.Video	1	4	6	3	3	36	53
Productivity	5	5	3	0	3	37	53
Social Networking	0	1	6	0	9	65	81
Tools	14	9	14	1	11	28	77
Travel-Shopping	25	21	8	0	8	12	74
Total	115	102	137	13	150	302	819

Locally made apps, Rank analysis, Denmark vs. Holland

		DK 2012	DK 2016	NL 2011	NL 2016
Mean	Internal	41.97	26.50	31.17	42.57
	USA	21.37	20.03	18.37	14.43
	SL	42.29	53.20	47.80	43.13
	HL	'-	'-	'-	'-
	No NN	37.80	53.93	51.86	41.97
Median	Internal	43.5	27	34	46
	USA	23	21	16.5	13.5
	SL	40	59	48.5	38.5
	HL	'-	'-	'-	'-
	No NN	42	53	49	45.5



Top locally made apps 90 days, downloads + revenue (global results)

Denmark

App Name	Publisher Name	Release Date	Downloads		Revenue Last 30 Days		Revenue Last 90 Days	Revenue %
			Last 30 Days	Last 90 Days	Revenue	Revenue %		
Subway Surfers	Games Kiloo	2012	1,561,075	4,525,800	64%	\$1,066,692	\$3,625,042	75%
MovieStarPlanet	Games MovieStarPlanet	2011	304,001	830,427		\$110,372	\$360,595	
Cookie Cats - a singi	Games Tactile Entertainn	2016	19,972	177,488		\$86,423	\$110,932	
Skyline Skaters	Games Tactile Entertainn	2014	76,109	226,093		\$68,085	\$201,217	
Bee Brilliant	Games Tactile Entertainn	2014	45,811	184,613		\$55,713	\$211,338	
Yatzy	Games Spigo ApS	2011	20,921	63,207		\$36,988	\$114,941	
Disco Ducks	Games Tactile Entertainn	2015	28,046	84,472		\$22,425	\$131,713	
Hugo World	Games Hugo Games A/S	2014	6,810	25,040		\$12,459	\$40,867	
Hugo Retro Mania	Games Hugo Games A/S	2011	8,835	35,227		\$10,032	\$40,455	
Hugo Troll Race 2.	Games Hugo Games A/S	2010	100,921	664,305		\$2,365	\$9,063	
		2013	2,347,883	7,116,607	86.62%	\$ 1,511,554	\$ 4,846,163	86.79%
Running and Walkin'	Health Endomondo.com	2009	333,086	1,040,257	98%	\$240,202	\$704,760	99.5%
Hypnose	Health Human Progress	2010	2,289	5,936		\$514	\$2,061	
Sov godt - få en go	Health Human Progress	2013	4,361	13,733		\$354	\$843	
Stressfri	Health Human Progress	2012	679	3,820		\$279	\$892	
		2011	340,415	1,063,746	12.95%	241,349	708,556	12.69%
My Little Pony - Cuti	Kids Egmont Kids Medi	2015	721	6,071		\$3,030	\$25,016	87.23%
Rasmus Klump	Kids Egmont Kids Medi	2011	4,955	15,622		\$1,075	\$3,662	
Sophie's Friends	Games Egmont Kids Medi	2014	407	1,574		\$17	\$42	
		2013	5,676	21,693	0.26%	\$ 4,105	\$ 28,678	0.51%
Hendes Verden	Lifestyle Egmont Magasine	2015	5,031	13,897	0.17%	\$141	\$283	0.01%
	Ave	2013	256,828	781,884		\$ 167,342	\$ 531,768	
	TOTAL		2,699,005	8,215,943		\$ 1,757,149	\$ 5,583,680	

Netherlands

App Name	Publisher Name	Release Date	Downloads		Revenue Last 30 Days		Revenue Last 90 Days	
			Last 30 Days	Last 90 Days	Revenue	Revenue %	Revenue	Revenue %
Online Soccer Manager (O	Games Gamebasics BV	2010	220,729	587,226	47.53%	\$104,734	\$461,158	31.45%
WordOn HD	Games Huckleberry BV	2012	23,647	75,509		\$82,536	\$254,353	
Governor of Poker 3	Games Youda Games Ho	2014	51,674	163,854		\$42,429	\$259,560	
Governor of Poker 2 HD - T	Games Youda Games Ho	2012	12,159	32,410		\$50,994	\$155,594	
City Island 2 - Building Sim	Games Sparkling Society	2014	36,749	113,159		\$73,850	\$234,412	
Governor of Poker 2 Premi	Games Youda Games Ho	2014	7,795	20,604		\$30,171	\$82,664	
Troll Face Quest Unlucky	Games SPIL GAMES	2015	86,627	242,604		\$16,635	\$18,735	
		2013	439,380	1,235,366	45.76%	\$401,349	\$1,466,476	40.28%
My Dolphin Show - sea ani	Kids SPIL GAMES	2013	253,449	741,516	99.01%	\$141,449	\$473,121	94.31%
LetterSchool - letters en cij	Kids Sanoma Media N	2012	935	3,262		\$6,541	\$22,807	
Miffy files	Kids Sanoma Media N	2012	1,441	3,397		\$1,433	\$3,384	
Transport Photo Jigsaw Pu	Kids Banana Apps Kid	2013	235	752		\$744	\$2,373	
		2013	256,060	748,927	27.7%	\$150,167	\$501,685	23.1%
De Telegraaf krant	News De Telegraaf B.V.	2010	112,414	359,846	71.31%	\$305,908	\$1,006,732	97.23%
De Telegraaf	News De Telegraaf B.V.	2010	17,275	53,040		\$8,498	\$25,498	
NRC Handelsblad digitale e	News NRC Media	2011	30,201	91,730		\$1,248	\$3,169	
		2010	159,890	504,616	18.69%	\$315,654	\$1,035,399	28.44%
Week Calendar	Producti WeekCal B.V.	2010	56,901	163,782	85.16%	\$208,870	\$469,372	88.96%
Easy Calendar	Producti T. van Zummerer	2011	8,225	22,358		\$21,364	\$57,031	
CalCube - Quick, Slick & Ea	Producti Appsuperb	2014	2,280	6,178		\$525	\$1,239	
		2012	67,406	192,318	7.12%	\$230,759	\$527,642	14.49%
EQu - the quality equalizer	Utilities elephantcandy	2010	7,591	18,536	0.69%	\$72,864	\$109,800	3.02%
	Ave	2012	84,230	244,590		\$ 103,124	\$ 326,009	
	Total		490,947	2,699,763		\$ 769,444	\$ 3,641,002	



Comparing app performance

Denmark

- 18 apps by 10 publishers
- 8,215,943 downloads
- \$5,583,680 (\$1.47 per app)
- Ave app launch year: 2013
- Global Killer apps & Category leaders
 - Kiloo (games)
 - Endomondo (Health/Fitness)
 - Egmont (Multiple)

Netherlands

- 18 apps by 14 publishers
- 2,699,763 downloads and \$3,641,002 (\$0.47 per app)
- Ave app launch year: 2012
- Total revenue of NL= DK's top app
- Missing out of 13 apps, or additional 12% of NL app economy



Preliminary explanation: Mobile operators allowed to partners with startups

Allowed in Denmark



The image shows a collection of mobile devices displaying various content services. At the top, there's a smartphone with a woman's face and a tablet with a game. Below, a large tablet shows a Spider-Man character, another shows a 'EUROMAN' magazine cover, and a smartphone shows a news article. Further down, there's a smartphone with a music interface, a tablet with a HBO logo, and another smartphone with a game. A large red circle contains the text '249,- pr. måned' and a smaller grey circle contains '99,- 1. måned'. At the bottom, logos for HBO NORDIC, T2/PLAY, G MORE PLAY, TELMORE, and Musik are listed, along with POLITIKEN, EUROMAN, EUROWOMAN, gastro, RUM, and MUNDO. Below the logos, it says 'Fri tale, sms, mms, 4g og 5gb data'.

(Users get \$125 of content for \$15)

Banned in Netherlands

- Vodafone HBOGo
- KPN Spotify
- Called the "innovation-free zone"
- Dutch law blocks startups and content providers from joining complementary assets with telcos



Slovenian made apps reduced by half, rank fell one-third. Top Free, Apple AppStore (AppAnnie)

	June 2012 (20 apps)		June 2016 (9 apps)
	AVE RANK 84		AVE RANK 117
8	Najdi.si Zemljevid 1 TSmedia, d.o.o.	39	DRAJV 13 Zavarovalnica Triglav, d.d.
9	eKartica 4 Kultura d.o.o.	89	24ur.com 18 Produkcija Plus d.o.o.
10	iQpon Mobile Couponing 3 Mobilni kuponi d.o.o.	99	Radio1 - Radar Alarm 5 TOP APP d.o.o.
15	Komunikator 4 Telekom Slovenije	107	Milijonar Slovenija 32 Pribozic
22	Dan zaščite pred soncem 3 MediaClinic	114	RTV Slovenija – RTV 4D 46 RTV
34	RTV Slovenija – RTV 4D 1 RTV Slovenija	118	VOYO 15 Produkcija Plus d.o.o.
35	KjeSiTaksi 12 RS5 ltd	134	Moje Kartice 40 cnej.si
54	Si.info 20 Si.mobil d.d.	167	Drži - Ne Drži? Kviz Slovenija 21 zebi24
68	SPAR plus 71 SPAR Slovenija d.o.o.	184	Daljinec+ 21 Telekom Slovenije
77	AdriaWeather 4 Undabot d.o.o.	117	
80	Promet 20 Jernej Fijačko		
89	Parkirišča 60 Makro Plus d.o.o.		
105	VOYO.SI 28 POP OnLine		
107	Pons slovar 54 Zalozba Rokus Klett,d.o.o.		
122	M Trgovine 53 Mercator d.d.		
151	LPPbus Ljubljana public transit 94 Guerrilla Code		
164	Tecajnica BSI (new) Matjaz Tercelj		

Testing charges against zero rating

Slovenia	
The operator that offers zero rating wins market share.	No. The incumbent with two zero rated offers experienced reduced market share.
The zero rated service wins market share.	Telecom Slovenia's TViN: fell from 67 to 85 between 2013 and 2015 Deezer fell from 116 to 133 for the period. VOYO fell from 116 to 125. For Hangar Mapa, Tsukabina, and TV.Si, they either never appear or show briefly with a low rank. For HBOGo, it rises from 282 to 68. As of Aug 15, 2015, it ranks at 291 for Apple.
The presence of zero rating will preclude the emergence of new applications and services.	No. New apps from a variety of countries appear each month in the ranking. As of Aug 15, 2015 for Slovenia apps in Google Play, the market Bohla appears at 48, and 24ur.com, Slovenian news at 76. For Apple, the ASfalt traffic app at 19, bohla.com at 30, BOX app by Telekom Slovenija to manage TV programs, and 24ur.com at 90.

ZERORATING

Do hard rules protect or harm consumers and competition? Evidence from Chile, Netherlands and Slovenia

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SILVIA ELALUF CALDERWOOD
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London, United Kingdom

AUGUST 15, 2015

Outcome of zero rating in Slovenia

- Allowed



Telecom Slovenia



- Banned



Telecom Slovenia



TusMobil



Si Mobil



Zero rating empowers blacks from South Africa to America



Gustav Praekelt, social entrepreneur, Free Basics creator, battling AIDS in South Africa



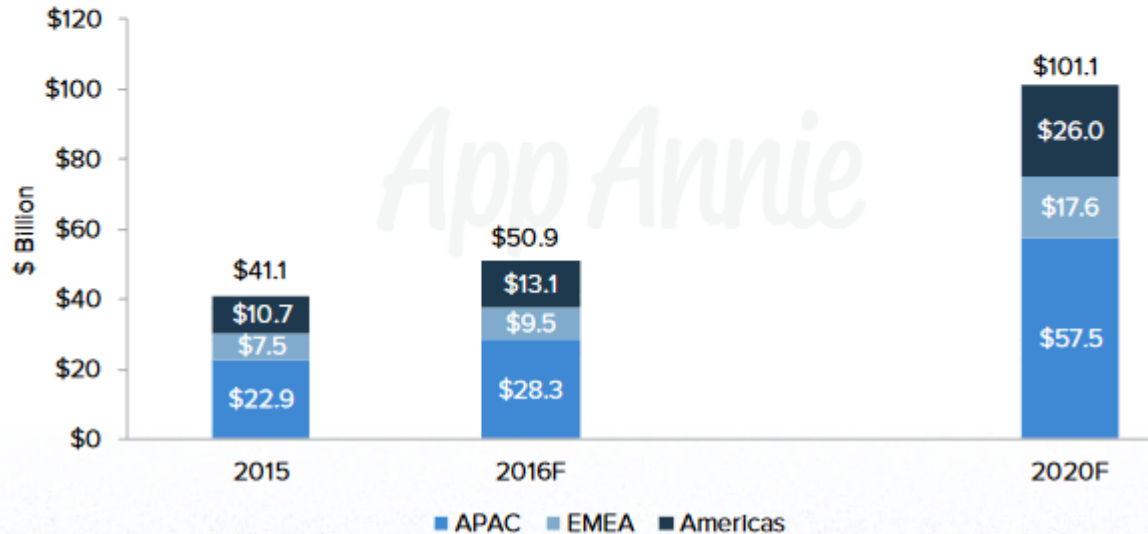
Nicol Turner Lee, Minority Media Telecom Council, 20-40% of mobile data is advertising; movement for free data for poor



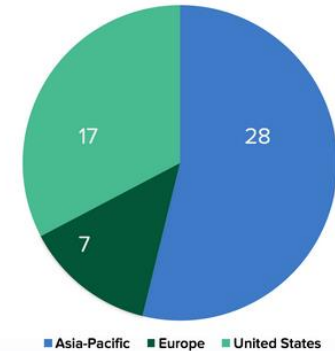
Banning QoS technologies in Open Internet, US/EU now disadvantaged for app future. No such bans in China, JP, SK.

App revenue in APAC is expected to grow 2.5x to \$57.5 billion from 2015 to 2020, with China already leading app store monetization in the region.

Mobile App Forecast – Annual Gross Revenue
By Region, in Billions



App Annie 52: 2015 Geographic Breakdown



US vs. Chinese mobile app experience

China Travel...Ctrip =
Expansive One-Stop-Shop for Travelers...

Priceline App (USA)



The Priceline app (USA) interface shows three main categories: Hotels, Flights, and Rental Cars, set against a blue background with a scenic landscape image at the bottom.

Ctrip App (China)



The Ctrip app (China) interface is a grid of colorful icons representing various travel services. Annotations on the right side link these icons to specific services:

- Hotel**: 酒店 (Hotels), 海外酒店 (Overseas Hotels), 团购 (Group Buy)
- Transport**: 机票 (Flights), 火车票 (Train Tickets), 汽车票/船票 (Car/Ferry Tickets)
- Tour**: 跟团游 (Group Tours), 目的地攻略 (Destination Guides), 自驾 (Self-driving)
- Attraction**: 景点门票 (Attraction Tickets), 美食 (Food), 交换酒店 (Exchange Hotels)
- Restaurant**: 订座 (Reservations), 出境WiFi (Outbound WiFi), 保险 (Insurance)
- Shopping / Currency Conversion**: 自由行 (Independent Travel), 主题游 (Themed Tours), 一日游 (Day Tours), 跟团游 (Group Tours)
- 24/7 Customer Service**: 紧急求助 (Emergency Help), 在线客服 (Online Customer Service)

Additional annotations on the right include: B&B, Hostel; Train / Bus / Ferry Ticket; Destination Guide; Portable Wi-Fi for Roaming; and Travel Visa / Insurance.

@KPCB Source: Priceline, Ctrip

Hillhouse Capital | PAGE 121

Does EU net neutrality conform to standards of good policy?

	EU	BEREC
Aligned with national laws and institutional goals	Could contravene competition law	Introduces new terms, interpretations not found in law
Based on rational, comprehensive data and evidence—both quantitative and qualitative	EP report advised light touch approach; EC raid found no evidence of abuse	contract disclosures survey; user survey
Clearly states the reasons why it's needed and the proposed outcome	"Guarantee internet as an engine of innovation"	
Has framework for achieving outcome		Based on stakeholders with "best arguments"
Concise, clearly communicated and widely understood	"end-users should be free to agree with providers of internet access services on tariffs for specific data volumes and speeds of the internet access service."	BEREC: "zero rating is neither allowed nor prohibited"
Creates value and benefits with measurable outcomes	No discussion of metrics, openness is subject to judgement	
Monitored, evaluated and reviewed regularly		Proposes substantive annual reporting but no metrics

BEREC's "interpretation" of Specialised Services (SpS) and IAS

- Appears to violate "technological neutrality" in EU Open Internet law by saying that VoLTE, IPTV and telemedicine get more scrutiny when provided by telecom operators; tilts regulatory favor to Internet away from operator's facilities, when there are valid reasons why users and innovators may want an operator's facilities (privacy, security, quality etc)
- Walled gardens expressly forbidden but two vulnerable communities desire these: children and the elderly

