

ネットワーク中立性

基本フレームワークと最新動向

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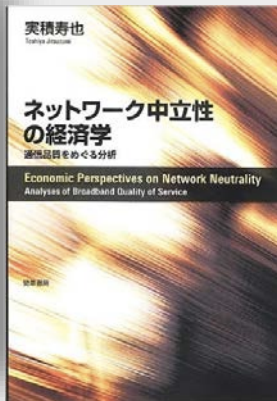
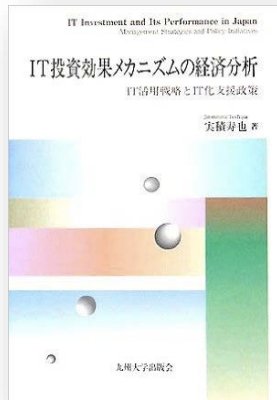
専門

通信経済学、通信政策

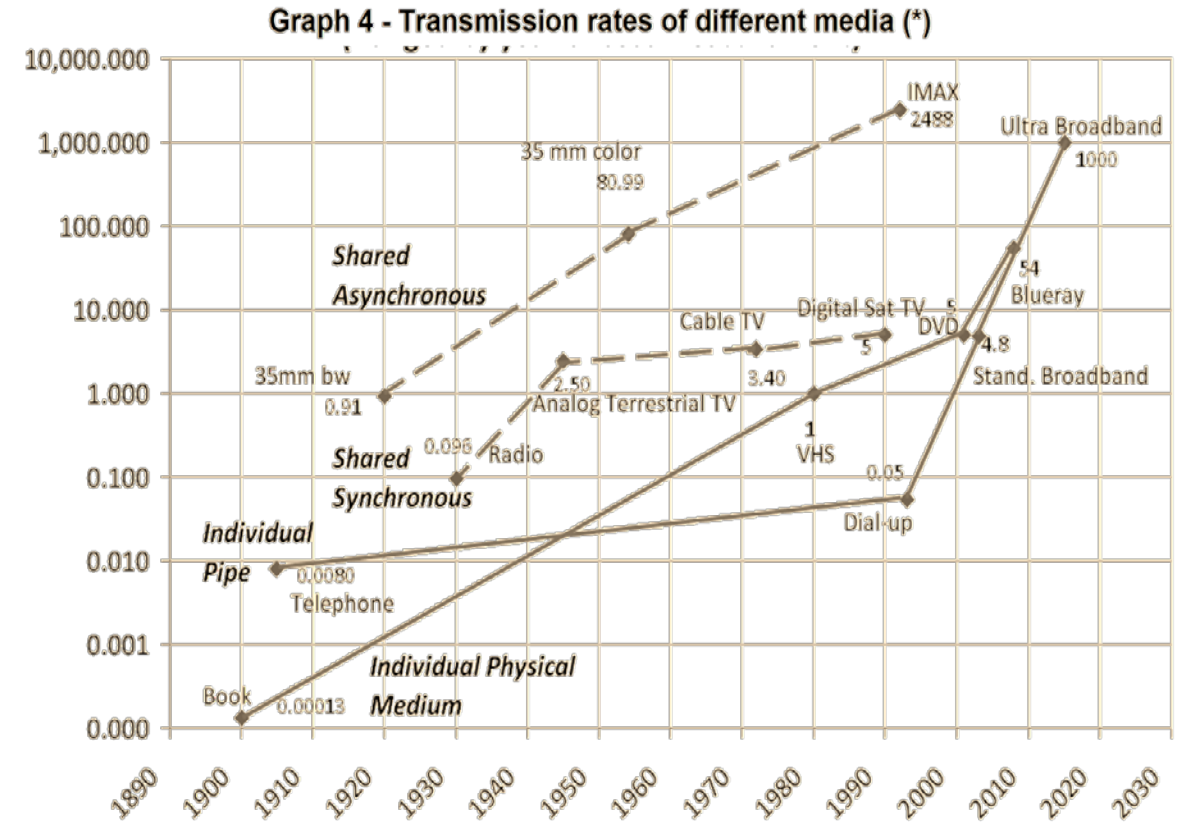
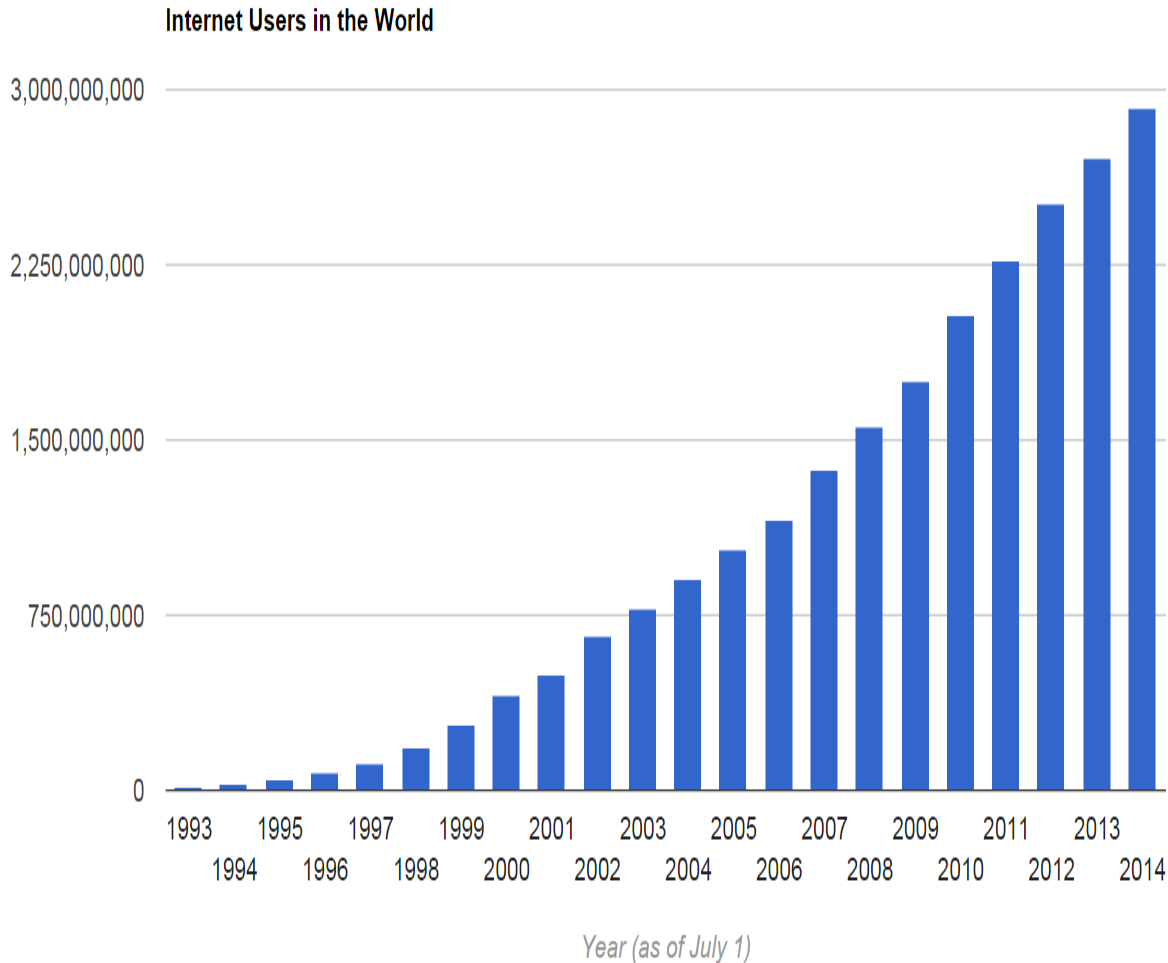
最近の研究キーワード

ネットワーク中立性、QoS/QoE、オープンデータ、ビッグデータ、
IoT、industrie4.0、ビットコイン、ドローン、公衆無線LAN。

Facebook: <https://www.facebook.com/toshiya.jitsuzumi>



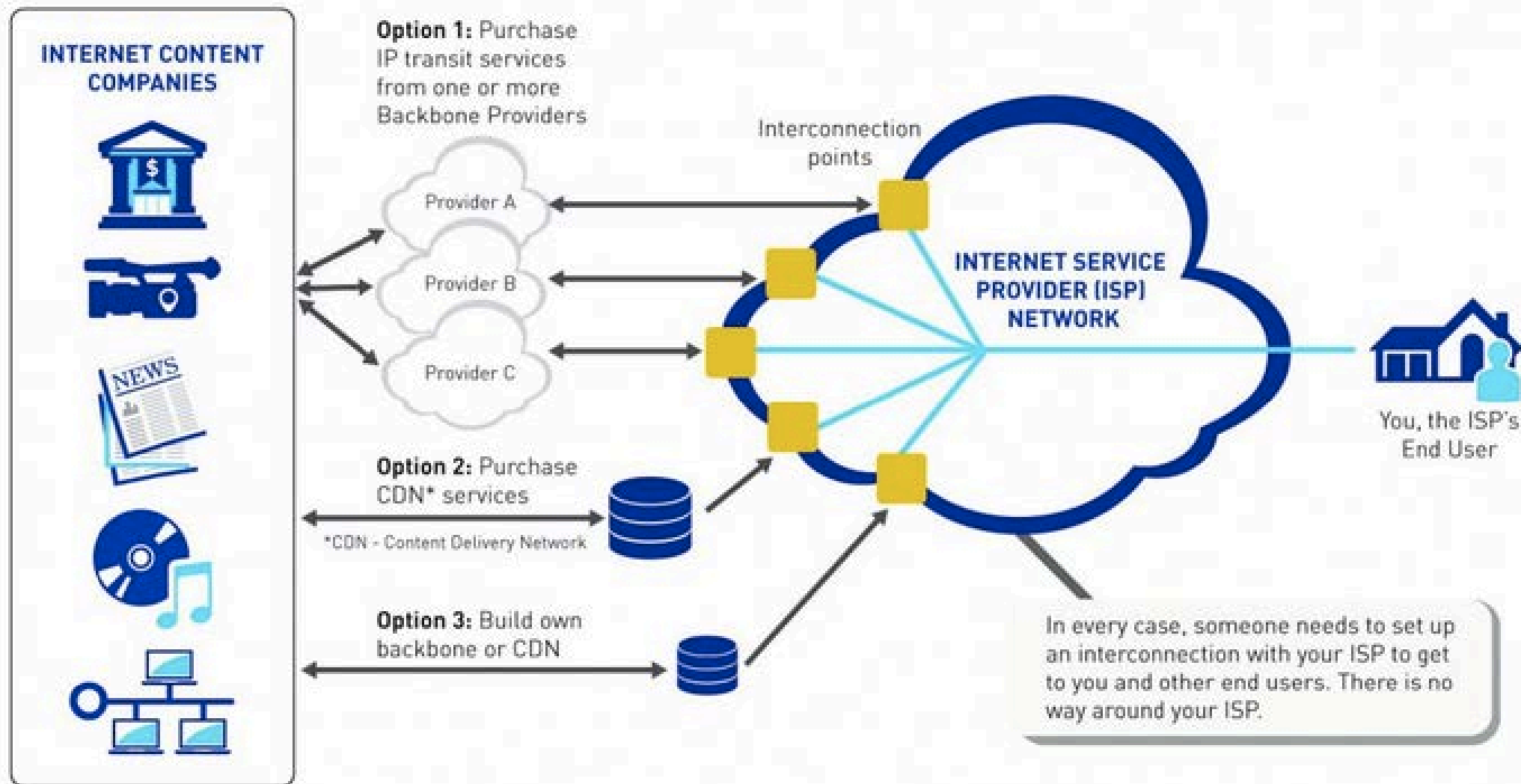
ネット利用の量的&質的拡大



(*) Rates of data transmission for telephone, dial-up internet, DSL, Broadband, etc. from <http://en.wikipedia.org/wiki/Bitrate>. For traditional media, bandwidth is calculated by calculating the number of bit equivalents of the information per second.

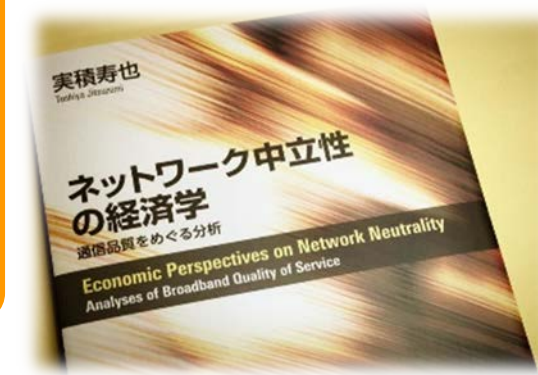
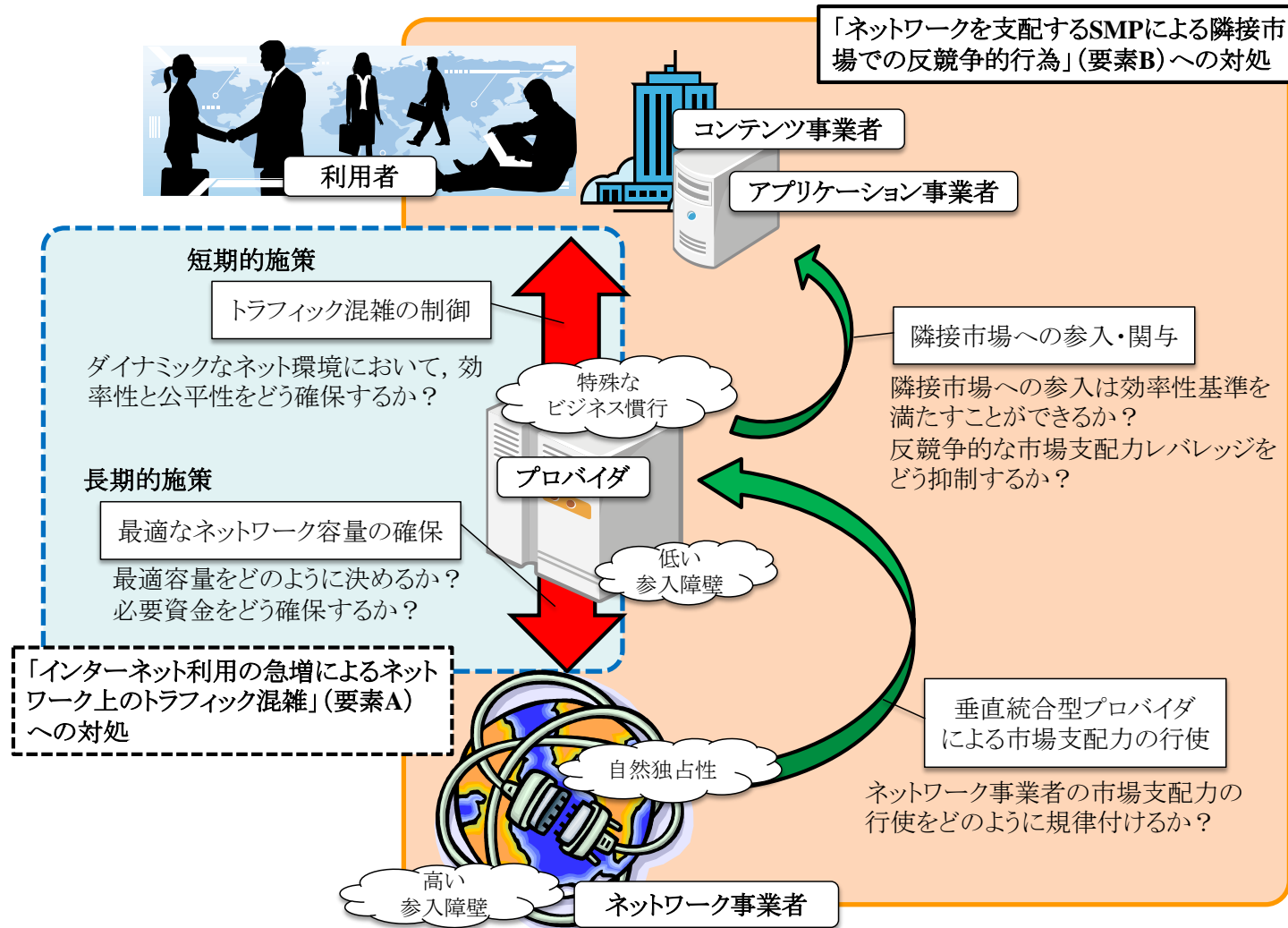
出典: Noam (2008, p.28) © 2008 COMMUNICATIONS & STRATEGIES, originally published in C&S special issue (Nov. 2008), reprinted with permission.

ネット利用者の懸念



<http://blog.level3.com/open-internet/heads-isps-win-tails-you-lose/>

ネットワーク中立性問題の本質



出典: 実積 (2013)『ネットワーク中立性の経済学』の図3-1

Open Internet Order (Feb. 26, 2015)

Federal Communications Commission		FCC 15-24
Before the Federal Communications Commission Washington, D.C. 20554		
In the Matter of)	
Protecting and Promoting the Open Internet)	GN Docket No. 14-28
REPORT AND ORDER ON REMAND, DECLARATORY RULING, AND ORDER		
Adopted: February 26, 2015	Released: March 12, 2015	
By the Commission: Chairman Wheeler and Commissioners Clyburn and Rosenworcel issuing separate statements; Commissioners Pai and O'Rielly dissenting and issuing separate statements.		
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ブロードバンドアクセスに関する 規制権限の強化	<ul style="list-style-type: none"> ●ブロードバンドアクセスを「電気通信サービス」としてより厳しい法規制の下に置く一方、適用条文は最小限に ●プロバイダ間の相互接続も新たに規制対象
プロバイダの行動に関する三つの ルールの設定	<ol style="list-style-type: none"> 1.合法的コンテンツや端末設備等に対する接続拒否の禁止 2.利用者が求めるケースを除き、品質低下措置の禁止 3.有償あるいは関連会社への優遇措置の禁止
将来の個別ケースがオープンインターネット原則に即しているか否かの判断基準の提示	<p>7つの判断基準を設定</p> <ol style="list-style-type: none"> 1.利用者自身による管理の可否 2.競争への影響 3.消費者保護の有無 4.技術開発や投資、ブロードバンド普及への影響 5.表現の自由との関係 6.アプリケーション差別の有無 7.業界標準との合致
より高度な情報開示基準の設定	<p>2010年規則を上回る基準を設定(小規模事業者には一部免除)</p>
苦情処理手続きの拡充	<p>オンブズマンを設置し対応強化</p>

出典:実積 (2015)『電子情報通信学会論文誌』J98-B,10,1030-1037の表1

Open Internet Orderをめぐる議論

法廷闘争

- 2015年12月4日に控訴審口頭弁論

Friday, December 4, 2015 9:30 A.M. Courtroom 20 - Judges Tatel, Srinivasan, Williams
15-1063 United States Telecom Assoc. v. FCC
See Order for Details

大統領選挙における争点化の可能性

- "[President Barack] Obama is salivating to regulate the Internet." He said the FCC now claims the authority to regulate pricing and terms of sale, despite FCC Chairman Tom Wheeler saying he has no intention to regulate broadband pricing. "If they succeed in this, anyone who wants to innovate has to go to government regulators to get permission to launch some new website, to do something novel on the Internet," Cruz said. "That is lunacy." He again blasted net neutrality as "Obamacare for the Internet" and called the order "a disaster."

FCCによる介入を、Obamacare for the Internetと指摘

The screenshot shows the top portion of a Wall Street Journal article. The header includes the WSJ logo and navigation links for Home, World, U.S., Politics, Economy, Business, Tech, Markets, Opinion, Arts, Life, and Real Estate. Below the header is a banner that reads "YOU ARE READING A PREVIEW OF A PAID ARTICLE. SUBSCRIBE NOW TO GET MORE GREAT CONTENT." The article title is "Ted Cruz's Fight to Protect the Open Internet" and the sub-headline is "The Texas senator blocks legislation that could lead to world-wide censorship of the Web." A large photograph of Sen. Ted Cruz speaking at a podium is featured. To the right of the photo is a "NEWSMART" sidebar with the text "REFINE YOUR AMBITION" and "Master Business English with The Wall Street Journal". At the bottom of the sidebar is a "30-Day Free Trial" offer with a "Sign Up Today!" button.

Communications Daily (January 25, 2016)

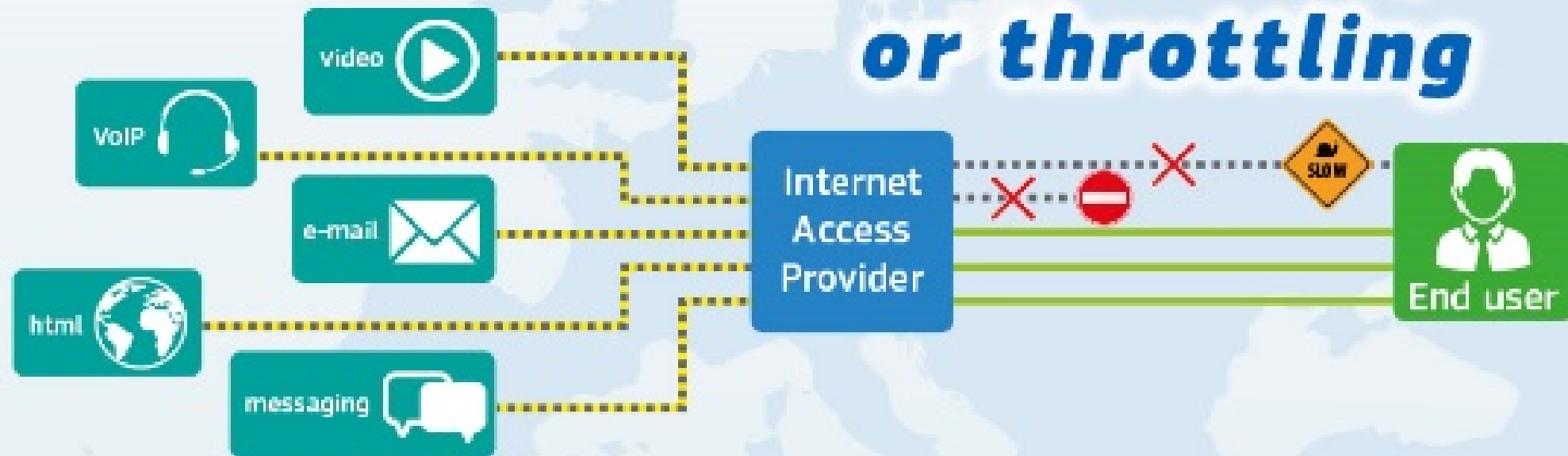
<http://www.wsj.com/articles/ted-cruzs-fight-to-protect-the-open-internet-1438551531>



European
Commission

Net neutrality in the EU

***No blocking
or throttling***



Every European must have access to the open Internet

All Internet traffic will be treated equally

EUのネット中立性規則 (2015/11/29発効、2016/4/30適用開始)

規制目的

- トラヒックの同等で非差別的な取扱い、及び、関連するエンドユーザーの権利を守るための共通ルールの確立 (§ 1)

インターネット利用者の権利

- 地理的状況とは無関係に、情報とコンテンツにアクセス・配信し、アプリケーションとサービスを利用・提供可能 (§ 3 I)

サービス提供者の義務

- 送信者・発信者、コンテンツ内容、アプリケーションやサービスの内容、利用端末にかかわらず、差別、制限あるいは干渉なしに、全てのトラヒックを同等に扱う。ただし、トラヒックカテゴリー毎の技術的条件に基づく妥当なトラヒック管理 (reasonable traffic management measures) の実施を妨げない。 (§ 3 III)
- 契約上の情報開示義務 (§ 4 I)
 - トラヒック管理方法、実効品質情報 (固定網とモバイル網で水準差あり)、品質悪化への救済措置
- 苦情申立てプロセスの確立 (§ 4 II)

特別協定の容認

- 一定範囲内で、料金・データ量・通信速度等の技術的側面や商業的側面に関する特別協定の締結は差し支えない (§ 3 II)
- 特定サービスの特別制御等 (optimization) は、ネットワーク容量に余裕がある範囲で提供可能 (§ 3 V)

National Regulatory Authorityの義務

- § 3および § 4の遵守を監督。そのためには、最低限の実効品質を定めることも可能 (§ 5 I)
- 2016年8月30日までにNERECがNRAが従うべきガイドラインを作成 (§ 5 III)

米国よりもISP寄りに見えるEU規制？

The screenshot shows the Guardian website interface. At the top, there are navigation links for 'home', 'tech', 'UK', 'world', 'sport', 'football', 'opinion', 'culture', 'business', and 'lifestyle'. The main headline reads 'EU net neutrality laws fatally undermined by loopholes, critics say'. Below the headline, there is a sub-headline: 'New rules requiring internet traffic to be treated equally are voted... amendments aimed at closing a series of exemptions are defeated...'. A large photograph of the European Parliament in session is visible. A green text box is overlaid on the image.

Net neutrality

EU net neutrality laws fatally undermined by loopholes, critics say

New rules requiring internet traffic to be treated equally are voted... amendments aimed at closing a series of exemptions are defeated...

しかしながら、米国の場合も case-by-case の FCC 判断に委ねる形をとっており、最終的にどちらがより厳しい規制であるのかは現時点では不明

The European Parliament in Strasbourg. The parliament voted to enshrine net neutrality in EU law. Photograph: Frederick Florin/AFP/Getty Images

Allied for Startupsによる指摘(2015/10/25)

Specifically, the current proposal permits the following harmful practices:

● **Fast Lanes:** Allows ISPs to offer fast lanes to companies that can afford to pay through the broadly defined “specialized services” exception. If some companies can pay to be in a fast lane, it will be more difficult for EU residents to access websites that can’t afford to pay extra fees. EU-based startups and small businesses would be left behind, unable to compete.

and gives regulators very limited ability to police it, without protection against all but the most... the practice of not counting a consumer’s usage of... users’ monthly bandwidth caps, creates the same... competition as fast lanes as it is typically provided for

● **Impending Congestion Management:** Allows ISPs to define classes and speed up or slow down traffic in these specified classes, even if there is no network congestion. This class-based discrimination distorts competition, stifles innovation, harms users, and hurts providers who encrypt traffic by putting all encrypted traffic in the slow lane.

● **Impending Congestion Management:** Allows ISPs to prevent “impending congestion”; this highly subjective standard effectively gives ISPs the right to slow down traffic anytime, not just during times of actual congestion.

<http://www.theguardian.com/technology/2015/oct/27/eu-net-neutrality-laws-fatally-undermined-by-loopholes-critics-say>
<https://cyberlaw.stanford.edu/files/publication/files/TechLettertoEUOct.2015%20%281%29.pdf>

Zero-rating

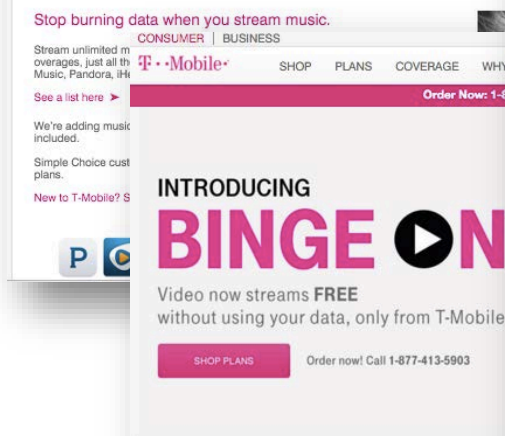
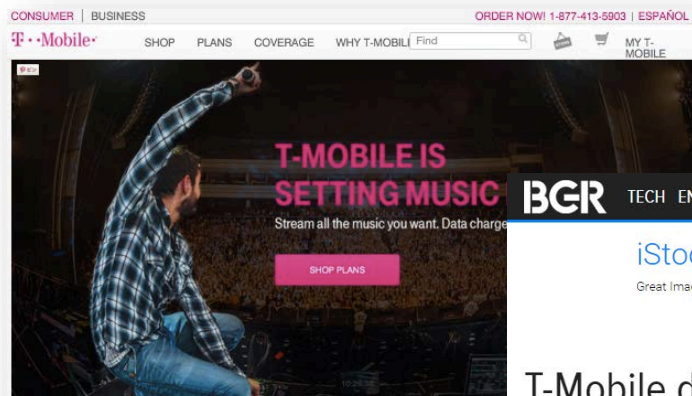
先進国におけるzero-rating

- 携帯ブロードバンド等における特定のアプリやコンテンツの利用に関し、月間データ利用量のカウントから除外するサービス。コンテンツ利用促進のマーケティングとして利用され、コンテンツ事業者と携帯事業者間で特別の取り決めを結ぶことによって実施
- コンテンツ事業者が費用負担を行うケースが多い。T-Mobileが提供するBinge Onはコンテンツ事業者への費用負担を求めないが、伝送品質の低下を要請
- BYODとの関連で利用される場合もある。

途上国におけるzero-rating

- 一定のウェブサイトやアプリの利用に関し、データ利用料金の負担なしにネット利用を可能にするサービス。本サービスの対象となるためにはコンテンツ事業者が一定の技術基準に従うことが要求されることがある。また、BuzzFeed Newsによれば、同サービスの費用は主として携帯事業者が負担している。

米国の例

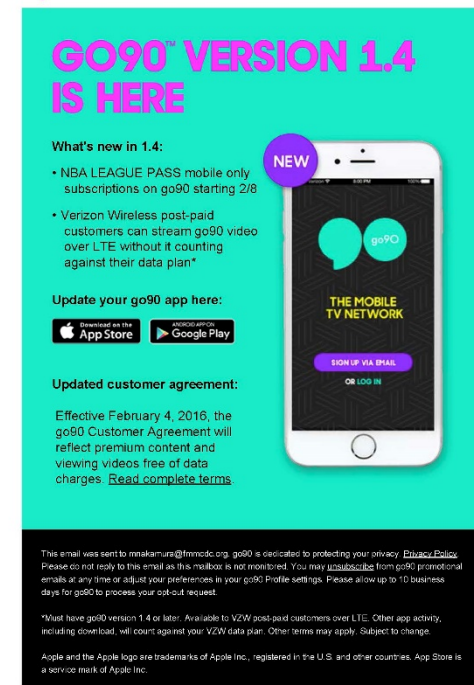
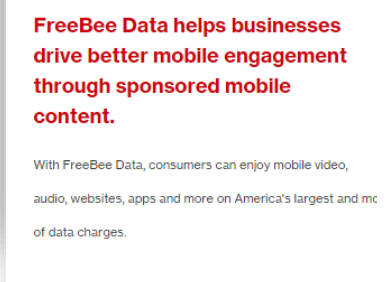
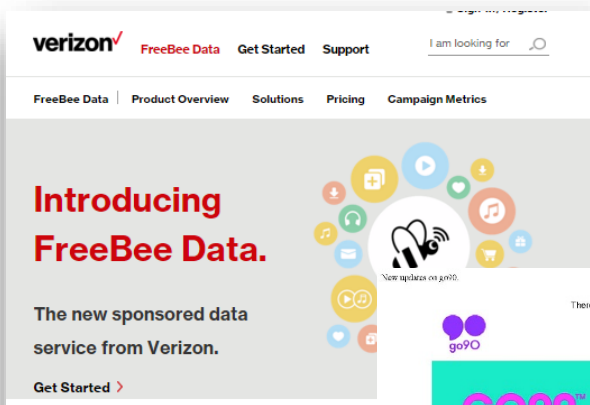


利用者に選択可能性を与えているためネット中立性違反にはあたらないと主張

T-Mobile's Binge On program is yet another move from the "Un-carrier" that's...

iPhone prices from around the world: Cheapest to most expensive

mi



Binge Onは、すべての動画トラフィックのビットレートを一律480pに制限。Binge Onをオフにすればフル画質の動画を視聴可能(その場合は、データ消費分に加算)

<http://bgr.com/2015/12/30/t-mobile-binge-on-youtube-throttling/>

微妙な例

The screenshot shows the Ars Technica website with the article "Comcast launches streaming TV service that doesn't count against data caps". The article is dated Nov 20, 2015, and is written by Jon Brodtkin. The main image shows a woman looking at a tablet displaying a news broadcast. The article text discusses Comcast's Stream TV service and its data cap policy. There are social media sharing options and a "WATCH ARS VIDEO" section at the bottom.

<http://arstechnica.com/business/2015/11/comcast-launches-online-tv-service-that-doesnt-count-against-data-caps/>

The screenshot shows the Xfinity TV Go website interface. The top navigation bar includes "Shop/Upgrade", "My Account", "Support", and "My XFINITY". The main content area is titled "Streaming Now Online" and features a grid of program listings. The listings include "Highway Thru Hell", "AMHQ Early", "Fox and Friends First", and "Early Start With John Berman". Each listing includes the program title, time slot, and a brief description. There are also "On Now" and "Up Next" sections.

微妙な例 2

Personal Business About AT&T Coverage Maps Store Locations & Appointments Language

Shop myAT&T Support Search

Wireless TV Bundles Internet Home Phone Digital Life Accessories Offers Shopping Help

Data Perks
Earn extra data from your favorite brands

Download on the App Store GET IT ON Google play

Try the app today and receive 25MB to get started!

Data Perks It's easy to earn extra data! Watch video

¹Compatible smartphone required. Data rates may apply to app download and use. Other restrictions apply. See Data Perks details.

Welcome FAQ

Data Perks, brought to you by AT&T and Aquato, makes it easy to add extra data to your account

You can earn extra data, measured in megabytes (MB), by:

- Taking surveys
- Shopping and more!

Your data is stored within the app and is easily transferred to your AT&T account for use within your current bill period.²

² Transferred data (maximum 1,000MB per bill period) is only for use by the individual smartphone line registered with the app and expires within the same bill period it is transferred.

Actual offers will vary.

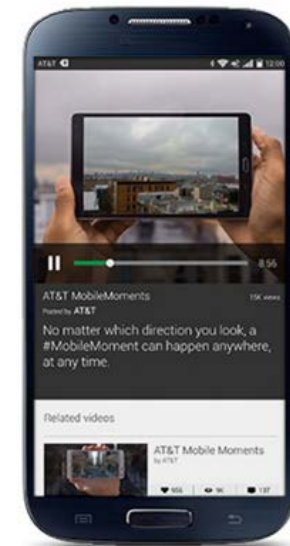
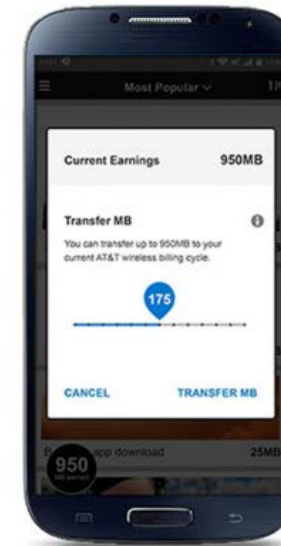
Using Data Perks gives you extra data when you want it

Here's how it works:

Earn
Earn data by taking surveys, shopping, and more.

Transfer
Transfer the number of MB you want (in 25MB increments — up to 1,000MB per period) to use within your current bill period.

Go
Use your data to browse, stream, share, and more.



Try the app today and receive 25MB to get started.³



インドの話

Prannoy Roy (@PrannoyRoyNDTV) NDTV is committed to net neutrality and is therefore exiting, and will not be a part of, Facebook's Internet.org initiative.

Cleartrip (@Cleartrip) Time to draw a line in the sand, Cleartrip is pulling out of Internet.org & standing up for #NetNeutrality cltp.co/1Hry8Lm

ネット中立性を支持しているという観点から Facebookの計画への不参加を表明

Simplified ver. for Internet.org

Facebook with Free Data

Search Facebook

Home Profile Messages Notifications Chat(39) Friends(50) Menu

Share with: Friends

Friend Requests

- Mzwandile Shezi Mzwa [Confirm] [Delete Request]
- Thabang Masinga [Confirm] [Delete Request]
- Lulu Lukhele [Confirm] [Delete Request]

See All Friend Requests (16) Hide

Lucian Matshepo Hlakudi and Vukile Gogo have birthdays today.

Clear Notifications

Menzi Theo

I hope everyone that is reading this is having a really good day. And if you are not, just know that in every new minute that passes...



Standard version

SoftBank 19:12

https://m.facebook.com/

Add Photos Check In More

What's on your mind?

Kanye West · Trending

TechCrunch shared a link. 58 mins ·

EMOTION CON AUTOCORRECT

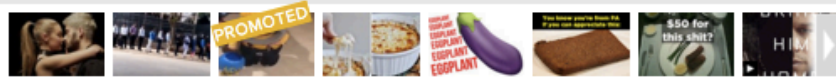
Here Are 7 Startups That Kanye West Wants To Build tcrn.ch

37 8 Comments 1 Shares

Free Basicsの現状＝実質的には値下プラン

BuzzFeedNEWS

News Buzz Life Quizzes Videos More [Get Our App!](#)



TECH

Here's How Free Basics Is Actually Being Sold Around The World

BuzzFeed News takes a look at how and why Facebook's "Free Basics" offering is being used by cell phone owners around the globe.

posted on Jan. 28, 2016, at 2:31 a.m.



Caroline O'Donovan
BuzzFeed News Reporter



Sheera Frenkel
BuzzFeed News World Correspondent



If you watched TV in Bolivia or read a newspaper in Ghana or listened to the radio in Panama in the last year or so, there's a chance you saw an ad for something called Free Basics by Facebook.



youtube.com

Free Basics is available via app or mobile website, through which the Facebook-led organization Internet.org provides free access to some content, like Wikipedia, the weather, and of course Facebook itself. In an op-ed published by the *Times of India*, CEO Mark Zuckerberg writes that Free Basics is about helping people to "start using the Internet" and claims that its launch worldwide has brought 15 million people online.

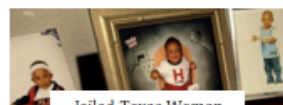
BuzzFeedNEWS

In The News Today

- Republican presidential candidates faced off — without Donald Trump — in the last debate before the Iowa caucuses on Feb. 1
- The Zika virus could infect 3 to 4 million people in the Americas in the next 12 months, health officials warn.
- Do you know what happened in the news this week? Take our quiz.

Get The News App

BuzzFeedNEWS



Jailed Texas Woman Featured In BuzzFeed News Investigation Is Granted Parole

by Alex Campbell

Connect With **BuzzFeed** Tech

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- パナマの携帯電話事業者であるDigiCellは、利用者のデータ利用量が上限に達すると自動的にFree BasicsのWebページに転送されるようなサービスを提供し、実質的にデータ利用料金キャップとして活用。
- イラクのKorekのケースではFree Basicsの利用も求めてくる毎週数百人ユーザーのうち他のデータプランを持たないユーザーは一名か二名のみ。全くの新規利用者は存在しない。



<http://www.buzzfeed.com/carolineodonovan/heres-how-free-basics-is-actually-being-sold-around-the-world#.eo1AV3W7V>

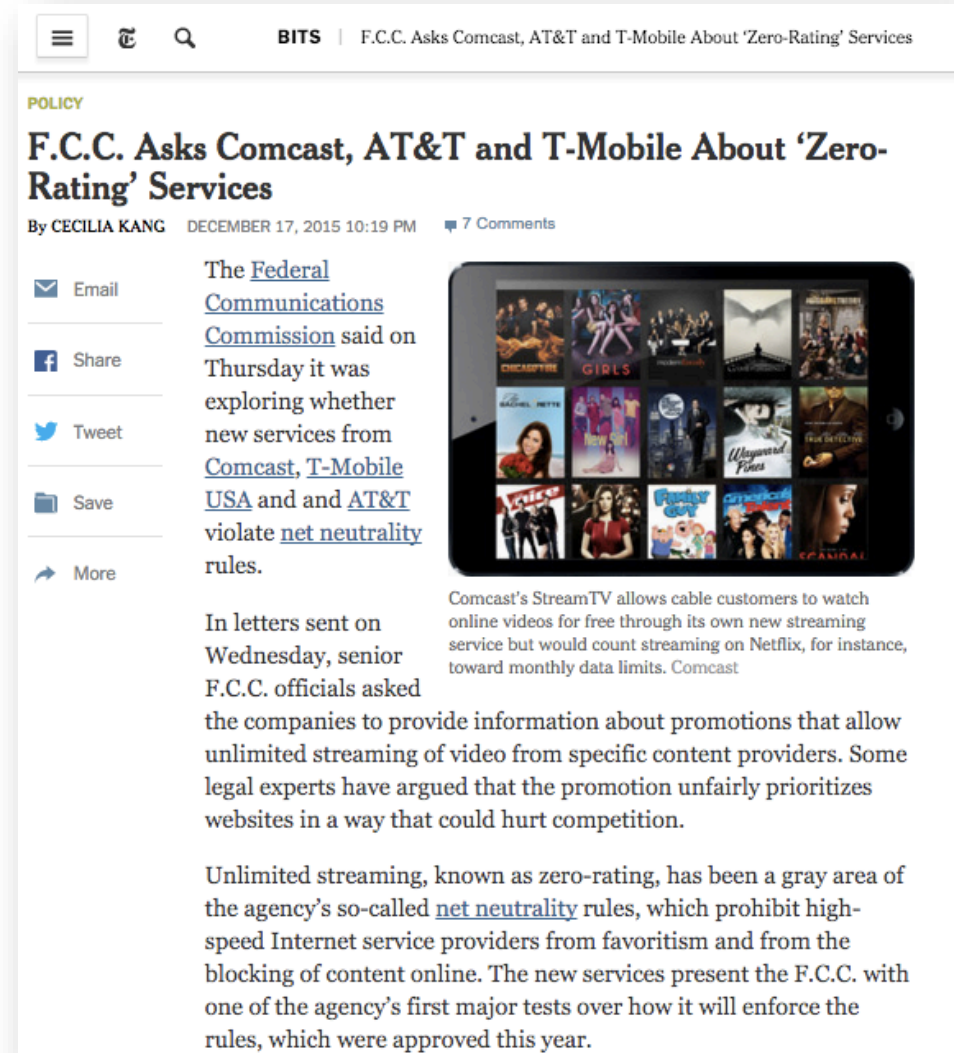
Zero-ratingに対する規制庁の対応

既に法律で禁止した国もある

- チリ、オランダ、スロベニアでzero-ratingを禁止する法規制を導入済み。
- **ただし、EUの規則制定を受け、オランダは同条項の撤廃を予定**

FCCは情報収集中

- 2015年12月14日に各社に情報提供を求めるレター一発出
- FCC委員長は単なる情報収集であることを強調
- 仮に何らかの中立性違反があればOpen Internet Orderの一般規定によって個別対応を行う方針？

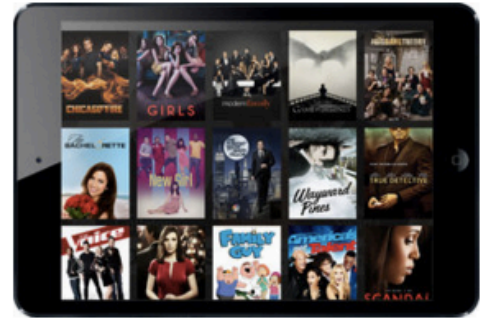


The screenshot shows a news article from the BITS blog. The title is "F.C.C. Asks Comcast, AT&T and T-Mobile About 'Zero-Rating' Services" by Cecilia Kang, dated December 17, 2015. The article discusses the Federal Communications Commission's (F.C.C.) inquiry into whether new streaming services from Comcast, T-Mobile USA, and AT&T violate net neutrality rules. It mentions that Comcast's StreamTV service allows free streaming but counts against data limits, and that legal experts argue such promotions unfairly prioritize certain websites. The article also notes that unlimited streaming (zero-rating) has been a gray area under net neutrality rules.

POLICY
F.C.C. Asks Comcast, AT&T and T-Mobile About 'Zero-Rating' Services
By CECILIA KANG DECEMBER 17, 2015 10:19 PM 7 Comments

Email
Share
Tweet
Save
More

The [Federal Communications Commission](#) said on Thursday it was exploring whether new services from [Comcast](#), [T-Mobile USA](#) and [AT&T](#) violate [net neutrality](#) rules.



Comcast's StreamTV allows cable customers to watch online videos for free through its own new streaming service but would count streaming on Netflix, for instance, toward monthly data limits. Comcast

In letters sent on Wednesday, senior F.C.C. officials asked the companies to provide information about promotions that allow unlimited streaming of video from specific content providers. Some legal experts have argued that the promotion unfairly prioritizes websites in a way that could hurt competition.

Unlimited streaming, known as zero-rating, has been a gray area of the agency's so-called [net neutrality](#) rules, which prohibit high-speed Internet service providers from favoritism and from the blocking of content online. The new services present the F.C.C. with one of the agency's first major tests over how it will enforce the rules, which were approved this year.

http://bits.blogs.nytimes.com/2015/12/17/f-c-c-asks-comcast-att-and-t-mobile-about-zero-rating-services/?_r=0

In theory, ...

一定の市場支配力を有するプラットフォーム事業者にとっては自社のプラットフォームをできるだけ利用してもらうことが利潤最大化につながるのので、本来であれば、隣接市場の競争を阻害するような独占カレバレッジは行う理由がない。

- にもかかわらず、あえて隣接市場への介入を行うのであれば、それには相応の効率性改善が期待されているはず
- Internalizing Complementary Efficiency 理論
 - Farrell, J. & Weiser, P.J. (2003). Modularity, vertical integration, and open access policies: Towards a convergence of antitrust and regulation in the Internet age. *Harvard Journal of Law and Technology*, 17(1), 85–134.



日本のケース

特定コンテンツに対する優遇



コンテンツ部門の切り離し

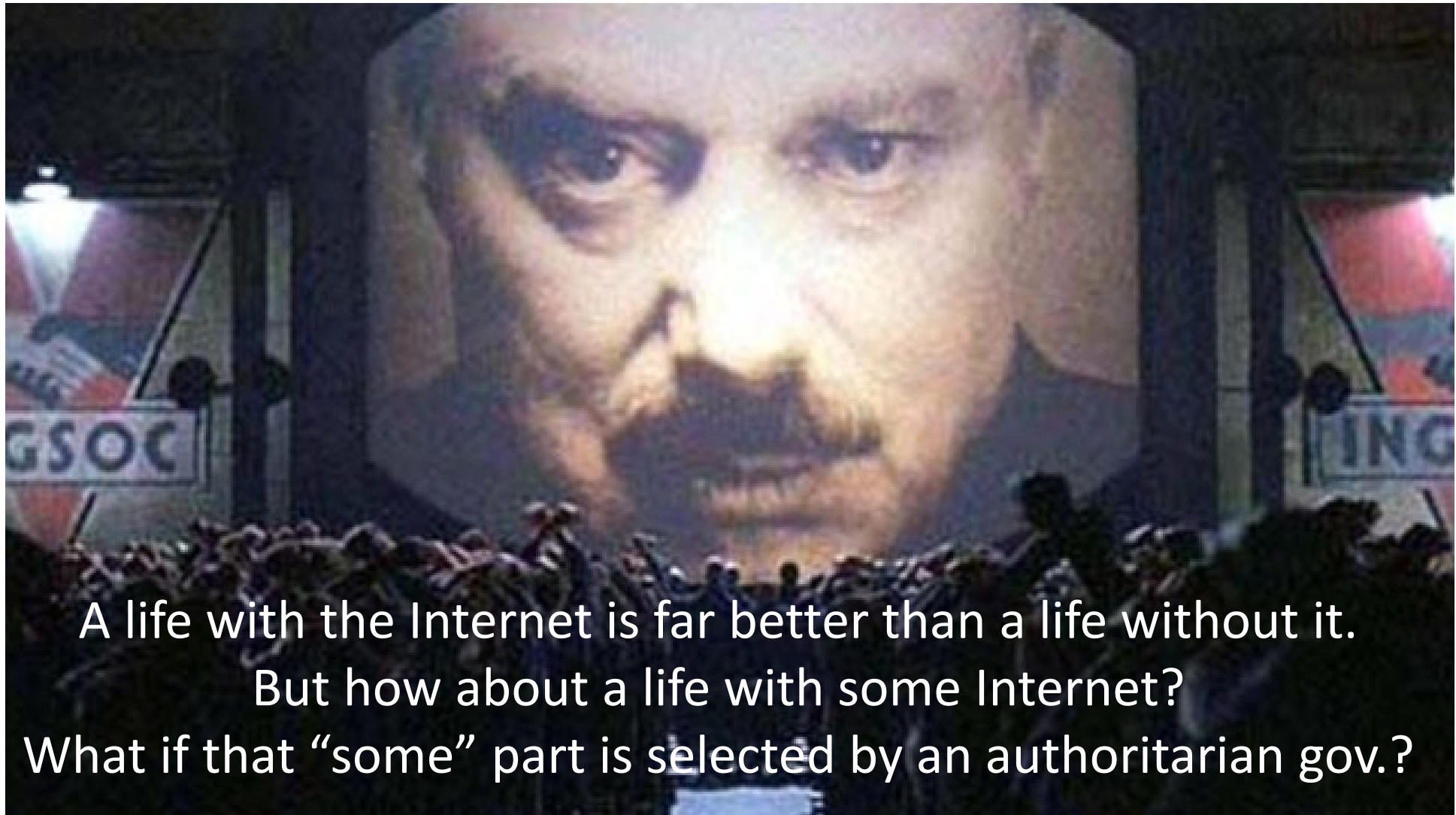


VS.

先進国における問題点

This content has been blocked
by your service provider.

途上国における問題点



A life with the Internet is far better than a life without it.
But how about a life with some Internet?
What if that “some” part is selected by an authoritarian gov.?

<http://i.kinja-img.com/gawker-media/image/upload/ywv5kpzywbe6ieqwzoxj.jpg>