

Evolução e Desafios Futuros do Ciberespaço

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Maio 2024



Yandex with Alice



“Cobarde! (...) não responde a questões simples”

Gestores da Yandex podem ser considerados “agentes estrangeiros”

Agenda

1. A Evolução do Ciberespaço
2. Visões e Actores
3. Estratégias de Poder
4. Desafios Futuros

Agenda

- 1. A Evolução do Ciberespaço**
2. Visões e Actores
3. Estratégias de Poder
4. Desafios Futuros

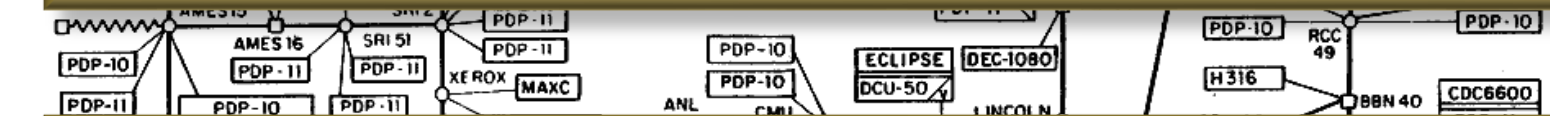
Agenda

CIBERESPAÇO

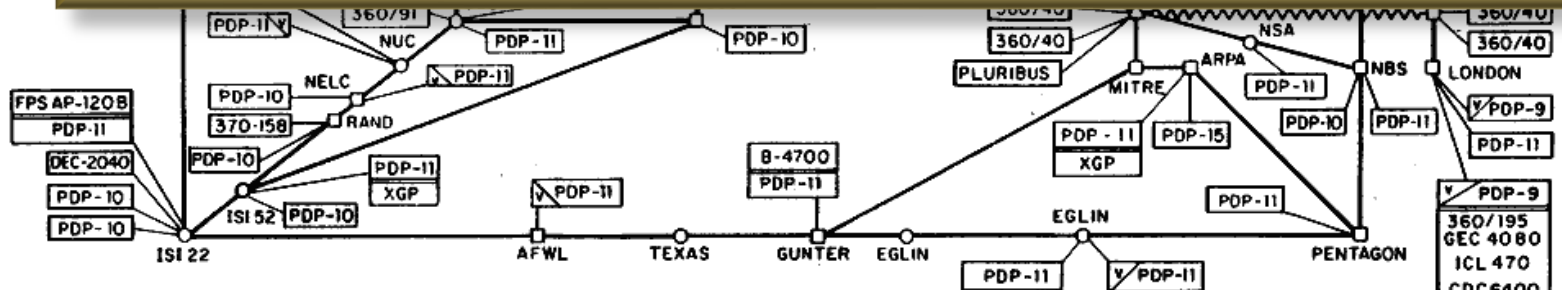
Conjunto de Actores e de Sistemas Físicos e Aplicacionais que permite a conexão em rede a uma escala global.

Evolução da ARPANET

1969 – A ARPA (Advanced Research and Projects Agency) cria a ARPANET para fins militares

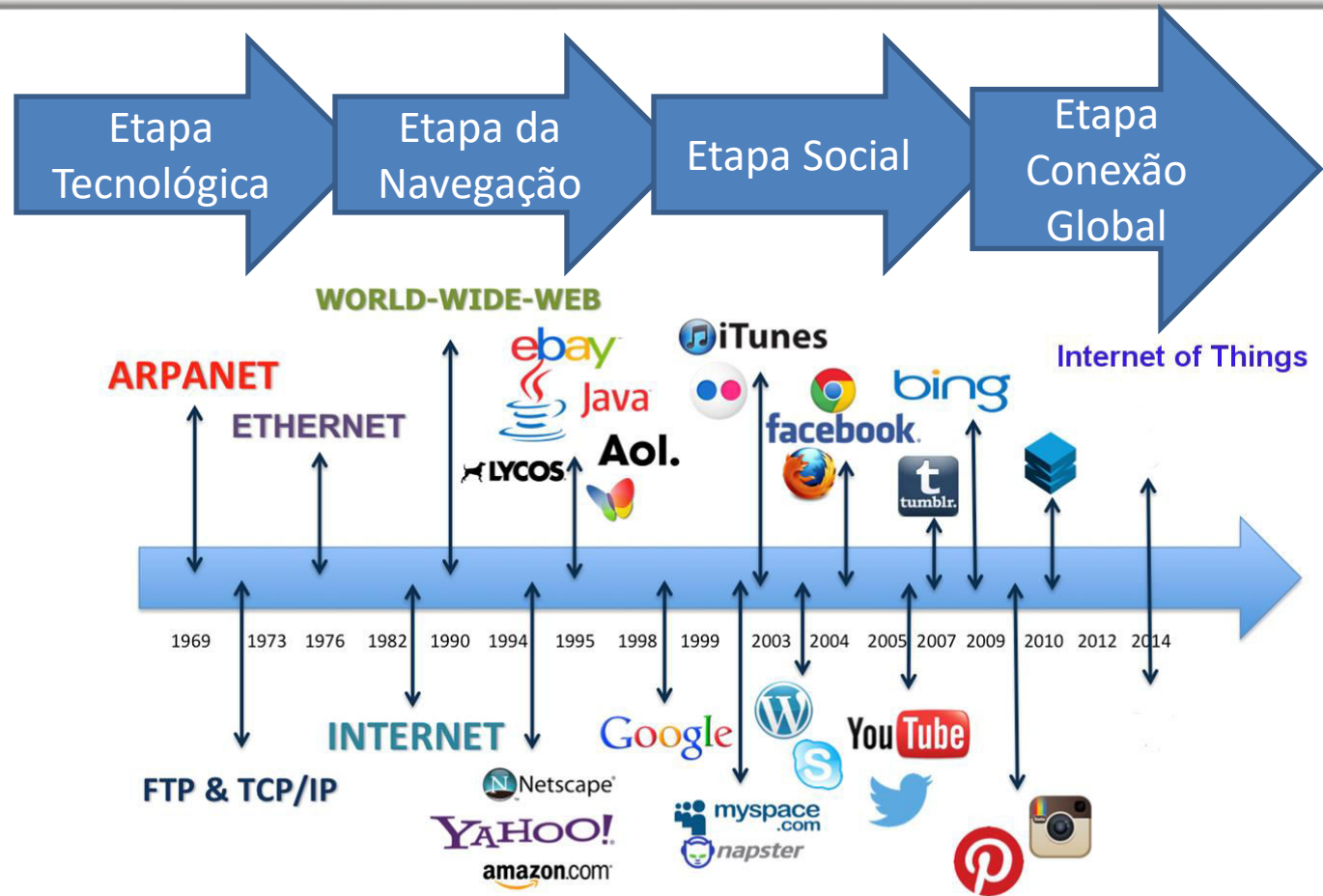


Objectivo: Ligar bases militares a centros de investigação através de uma rede com múltiplas conexões e sem um centro de controlo definido. Estamos na Guerra Fria



Anos 80 – A ARPA dá origem à MILNET (para fins militares) e à INTERNET (para finalidades civis)

A evolução da Internet em 4 etapas



Um Planeta (quase) todo Digital

JAN
2024

ESSENTIAL DIGITAL HEADLINES

OVERVIEW OF THE ADOPTION AND USE OF CONNECTED DEVICES AND SERVICES



TOTAL
POPULATION



we
are
social

8.08
BILLION

URBANISATION

57.7%

UNIQUE MOBILE
PHONE SUBSCRIBERS



Meltwater

5.61
BILLION

vs. POPULATION

69.4%

INDIVIDUALS USING
THE INTERNET



KEPIOS

5.35
BILLION

vs. POPULATION

66.2%

SOCIAL MEDIA
USER IDENTITIES



5.04
BILLION

vs. POPULATION

62.3%

Mobile Phones lideram o acesso

OVERVIEW OF INTERNET USE

ESSENTIAL INDICATORS OF INTERNET ADOPTION AND USE



AVERAGE DAILY TIME
SPENT USING THE INTERNET
BY EACH INTERNET USER



GWl.

6H 40M

YOY: +0.8% (+3 MINS)

PERCENTAGE OF USERS
ACCESSING THE INTERNET
VIA MOBILE PHONES



GWl.

96.5%

YOY: +4.6% (+420 BPS)

PERCENTAGE OF USERS
ACCESSING THE INTERNET
VIA LAPTOPS AND DESKTOPS



we
are
social

61.8%

YOY: -5.8% (-380 BPS)

PERCENTAGE OF THE
TOTAL URBAN POPULATION
THAT USES THE INTERNET



Meltwater

78.8%

YOY: +3.2% (+252 BPS)

PERCENTAGE OF THE
TOTAL RURAL POPULATION
THAT USES THE INTERNET



Meltwater

48.9%

YOY: +7.2% (+340 BPS)

30

SOURCES: KEPIOS ANALYSIS; ITU; GSMA INTELLIGENCE; EUROSTAT; GOOGLE'S ADVERTISING RESOURCES; CNNIC; KANTAR & IAMA; GOVERNMENT RESOURCES; UNITED NATIONS. TIME SPENT AND MOBILE SHARE DATA FROM GWl (Q3 2023). SEE [GWI.COM](https://www.gwi.com). **NOTES:** GENDER DATA ARE ONLY AVAILABLE FOR "FEMALE" AND "MALE". PERCENTAGE CHANGE FIGURES SHOW RELATIVE YEAR-ON-YEAR CHANGE. "BPS" FIGURES REPRESENT BASIS POINTS, AND SHOW ABSOLUTE YEAR-ON-YEAR CHANGE. **COMPARABILITY:** SOURCE AND BASE CHANGES. ALL FIGURES USE THE LATEST AVAILABLE DATA, BUT SOME SOURCES DO NOT PUBLISH REGULAR UPDATES, SO FIGURES MAY UNDER-REPRESENT ACTUAL USE. SEE [NOTES ON DATA](#).

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<https://datareportal.com/reports/digital-2024-global-overview-report>

Desigualdades no acesso à Internet

JAN
2023

UNCONNECTED POPULATIONS

COUNTRIES AND TERRITORIES WITH THE LARGEST UNCONNECTED POPULATIONS AND THE LOWEST LEVELS OF INTERNET ADOPTION



GLOBAL OVERVIEW

ABSOLUTE: LARGEST UNCONNECTED POPULATIONS

#	LOCATION	UNCONNECTED POPULATION	% OF POP. OFFLINE
01	INDIA	730,027,000	51.3%
02	CHINA	374,709,000	26.3%
03	PAKISTAN	150,779,000	63.3%
04	BANGLADESH	105,138,000	61.1%
05	ETHIOPIA	104,073,000	83.3%
06	NIGERIA	98,635,000	44.6%
07	DEM. REP. OF THE CONGO	77,568,000	77.1%
08	INDONESIA	63,514,000	23.0%
09	TANZANIA	45,456,000	68.4%
10	KENYA	36,699,000	67.3%

RELATIVE: LOWEST LEVELS OF INTERNET ADOPTION

#	LOCATION	% OF POP. OFFLINE	UNCONNECTED POPULATION
01	NORTH KOREA ¹	>99.9%	[BLOCKED]
02	SOUTH SUDAN	93.0%	10,223,000
03	SOMALIA	90.2%	16,108,000
04	BURUNDI	89.8%	11,734,000
05	CENTRAL AFRICAN REPUBLIC	89.4%	5,058,000
06	ETHIOPIA	83.3%	104,073,000
07	CHAD	82.1%	14,776,000
08	AFGHANISTAN	81.6%	34,008,000
09	MADAGASCAR	80.3%	24,061,000
10	MOZAMBIQUE	79.3%	26,504,000

SOURCES: KEPIOS ANALYSIS; ITU; GSMA INTELLIGENCE; EUROSTAT; WORLD BANK; GOOGLE'S ADVERTISING RESOURCES; CIA WORLD FACTBOOK; CNNIC; APJII; KANTAR & IAMA; LOCAL GOVERNMENT AUTHORITIES; UNITED NATIONS. **NOTES:** FIGURES IN THE "% OF POP. OFFLINE" COLUMN REPRESENT THE PERCENTAGE OF THE POPULATION THAT DOES NOT YET USE THE INTERNET. ABSOLUTE VALUES HAVE BEEN ROUNDED TO THE NEAREST THOUSAND. (1) THE INTERNET (AT LEAST AS THE REST OF THE WORLD KNOWS IT) REMAINS BLOCKED FOR EVERYDAY CITIZENS IN NORTH KOREA. **COMPARABILITY:** SOURCE AND BASE CHANGES. ALL FIGURES USE THE LATEST AVAILABLE DATA, BUT SOME SOURCE DATA MAY NOT HAVE BEEN UPDATED IN THE PAST YEAR. SEE [NOTES ON DATA](#) FOR DETAILS.

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Agenda

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4. Desafios futuros

A Visão Utópica do Ciberespaço

CIBERESPAÇO

Espaço virtual de liberdade, onde o Internauta pode obter, trocar e ceder conhecimento

A Visão Distópica do Ciberespaço




CIBERESPAÇO

Espaço virtual de afirmação e confrontação de poderes políticos, económicos, sociais e militares e de ocultação de actividades ilícitas e de crime organizado.



Actores do Ciberespaço

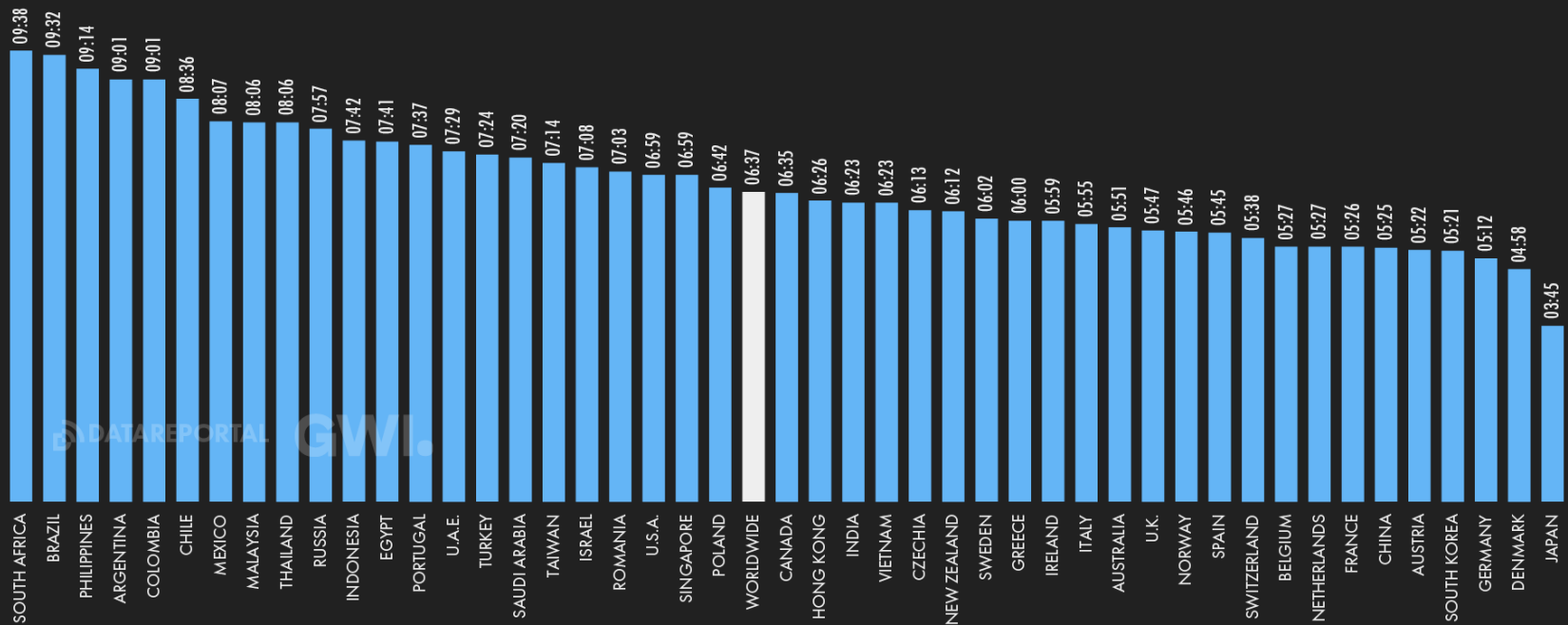
- 
- a. Os internautas
 - b. As empresas
 - c. As instituições
 - d. Os serviços de informações
 - e. As forças armadas
 - f. Os activismos
 - g. Os hackers
 - h. O crime organizado
 - i. As forças geoestratégicas

Utilização Média por Dia : 6H 37 M (2023) 6H 40 M (2024)

JAN
2023

DAILY TIME SPENT USING THE INTERNET

AVERAGE AMOUNT OF TIME (IN HOURS AND MINUTES) THAT INTERNET USERS AGED 16 TO 64 SPEND USING THE INTERNET EACH DAY ON ANY DEVICE



42

SOURCE: GWI (Q3 2022). FIGURES REPRESENT THE FINDINGS OF A BROAD GLOBAL SURVEY OF INTERNET USERS AGED 16 TO 64. SEE [GWI.COM](https://www.gwi.com) FOR FULL DETAILS.

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<https://datareportal.com/reports/digital-2023-global-overview-report>

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A INTERNET Não Pertence a Ninguém

WHO RUNS THE INTERNET?

NO ONE PERSON, COMPANY, ORGANIZATION OR GOVERNMENT RUNS THE INTERNET.

The Internet itself is a globally distributed computer network comprised of many voluntarily interconnected autonomous networks. Similarly, its governance is conducted by a decentralized and international multi-stakeholder network of interconnected autonomous groups drawing from civil society, the private sector, governments, the academic and research communities, and national and international organizations. They work cooperatively from their respective roles to create shared policies and standards that maintain the Internet's global interoperability for the public good.

WHO IS INVOLVED:

IAB **A C P S R**

INTERNET ARCHITECTURE BOARD
Oversees the technical and engineering development of the IETF and IRTF.
www.iab.org

ICANN **C O P V**

INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS
Coordinates the Internet's systems of unique identifiers: IP addresses, Protocol-Parameter registries, top-level domain space (DNS root zone).
www.icann.org

IETF **C P S**

INTERNET ENGINEERING TASK FORCE
Develops and promotes a wide range of Internet standards dealing in particular with standards of the Internet protocol suite. Their technical documents influence the way people design, use, and manage the Internet.
www.ietf.org

IGF **A C P**

INTERNET GOVERNANCE FORUM
A multi-stakeholder open forum for debate on issues related to internet governance.
www.intgovforum.org

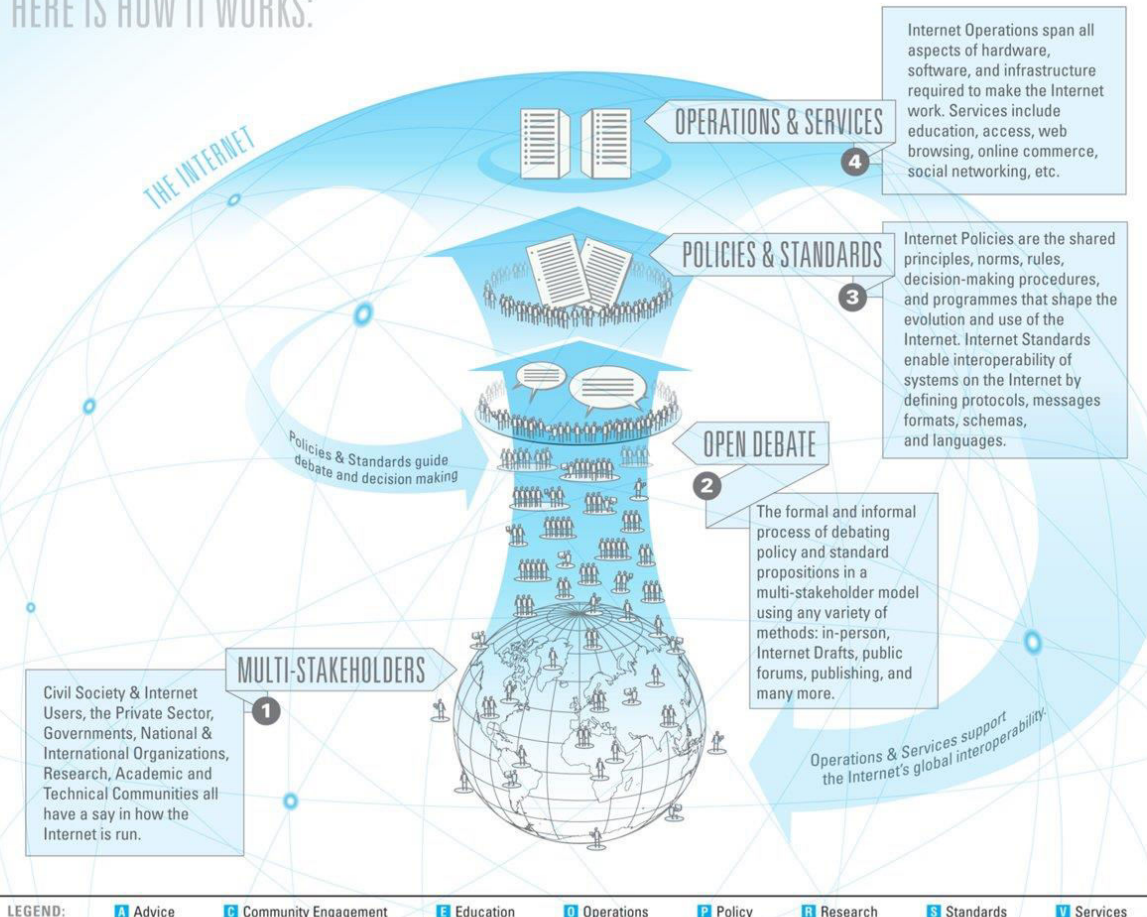
IRTF **R**

INTERNET RESEARCH TASK FORCE
Promotes research of the evolution of the Internet by creating focused, long-term research groups working on topics related to Internet protocols, applications, architecture and technology.
www.irtf.org

GOVERNMENTS AND INTER-GOVERNMENTAL ORGANIZATIONS **C P**

Develop laws, regulations and policies applicable to the Internet within their jurisdictions; participants in multilateral and multi-stakeholder regional and international fora on Internet Governance.

HERE IS HOW IT WORKS:



LEGEND: **A** Advice **C** Community Engagement **E** Education **O** Operations **P** Policy **R** Research **S** Standards **V** Services

WHO IS INVOLVED:

ISO 3166 MA **S**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, MAINTENANCE AGENCY
Defines names and postal codes of countries, dependent territories, special areas of geographic significance.
www.iso.org/iso/country_codes.htm

ISOC **C E P V**

INTERNET SOCIETY
Assure the open development, evolution and use of the Internet for the benefit of all people throughout the world. Currently ISOC has over 90 chapters in around 80 countries.
www.internetsociety.org

RIRs **O P V**

5 REGIONAL INTERNET REGISTRIES
Manage the allocation and registration of Internet number resources, such as IP addresses, within geographic regions of the world.

www.afrinic.net Africa
www.apnic.net Asia Pacific
www.arin.net Canada & United States
www.lacnic.net Latin America & Caribbean
www.ripe.net Europe, the Middle East & parts of Central Asia

W3C **S**

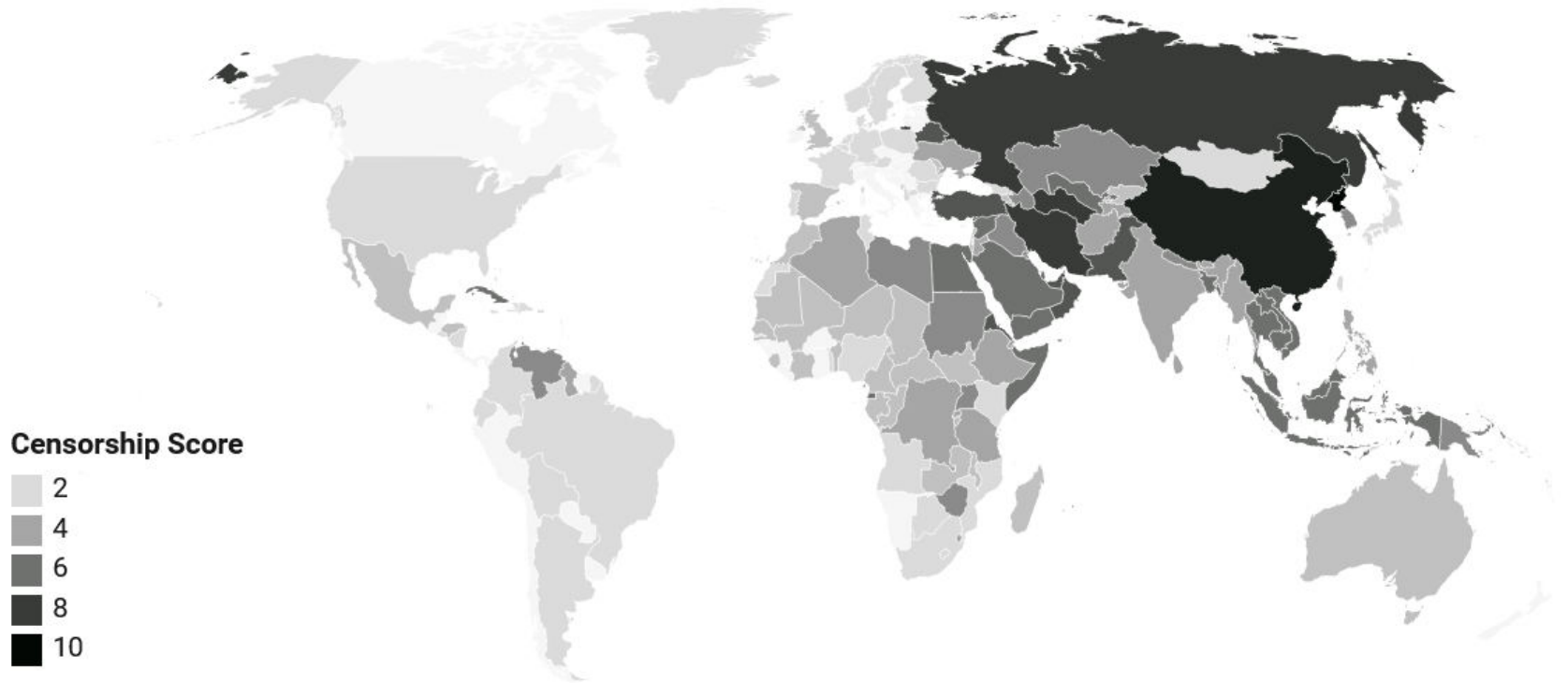
WORLD WIDE WEB CONSORTIUM
Create standards for the world wide web that enable an Open Web Platform, for example, by focusing on issues of accessibility, internationalization, and mobile web solutions.
www.w3.org

INTERNET NETWORK OPERATORS' GROUPS **A O V**

Discuss and influence matters related to Internet operations and regulation within informal fora made up of Internet Service Providers (ISPs), Internet Exchange Points (IXPs) and others.

A Censura no Ciberespaço

Countries with the Worst Online Censorship in the World

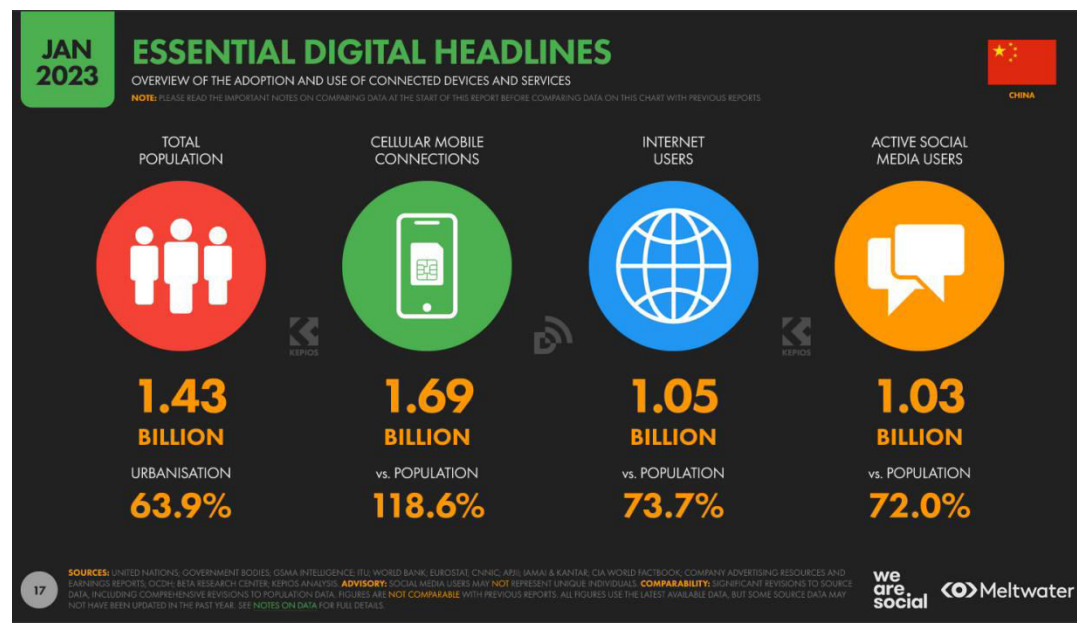
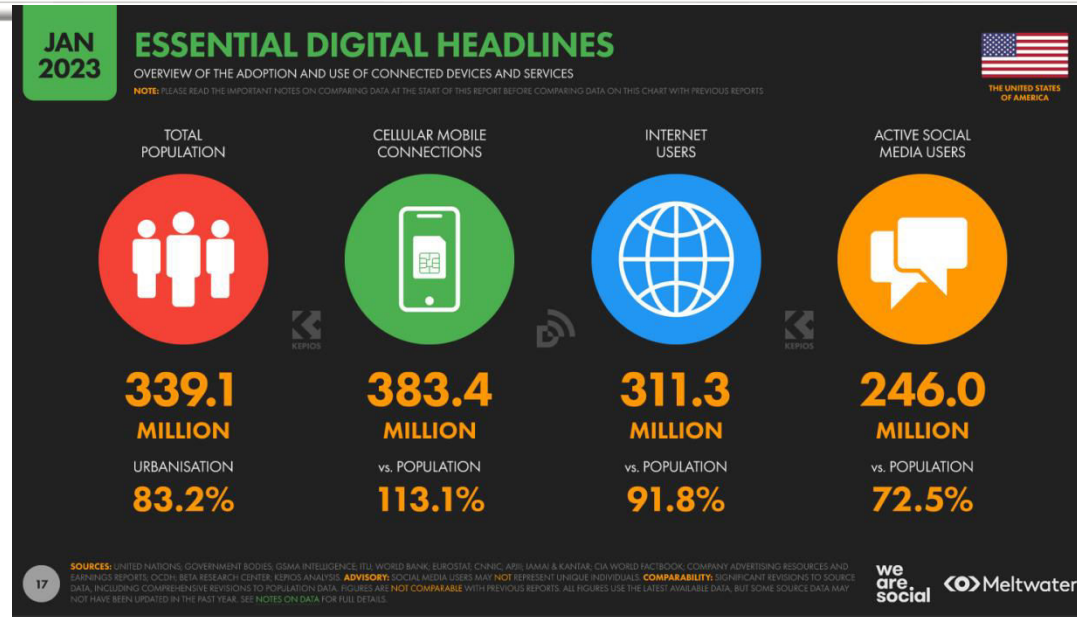


Map: Comparitech • [Get the data](#) • Created with [Datawrapper](#)

<https://www.comparitech.com/blog/vpn-privacy/internet-censorship-map/>

USA vs CHINA na Internet

<https://datareportal.com/reports/digital-2023-United-states-of-america>



Os EUA e o Ciberespaço

The 100 largest companies in the world by market capitalization in 2020 (in billion U.S. dollars)

Search:

Records: 13

Ranking of the companies rank 1 to 100	Market capitalization in billion U.S. dollars
Saudi Arabian Oil Company (Saudi Aramco) (Saudi Arabia)	1,684.8
Microsoft (United States)	1,359
Apple (United States)	1,285.5
Amazon (United States)	1,233.4
Alphabet (United States)	919.3
Facebook (United States)	583.7
Alibaba (China)	545.4
Tencent Holdings (China)	509.7
Berkshire Hathaway (United States)	455.4
Johnson & Johnson (United States)	395.3
Visa (United States)	383.9
Walmart (United States)	344.4
Nestlé (Switzerland)	304.1

Showing entries 1 to 13 (100 entries in total)

[Previous](#) [Next](#)

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Source

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Release date

May 2020

Region

Worldwide

Survey time period

April 30, 2020

Supplementary notes

Values are the closing price outstanding on April 30, 2020

Os EUA e o Ciberespaço

The Huawei ban begins on May 15, 2019



On May 15, 2019, President Trump issued an [executive order](#) that bans the use of telecommunications equipment from foreign firms deemed a national security risk. The order itself doesn't mention Huawei (or even China) specifically. However, the US Department of Commerce created what it refers to as an "Entity List" related to the order that does contain Huawei's name.

Since the order didn't reference Huawei specifically, its effect on the company and its various lines of business wasn't totally clear. It appeared the order was mostly directed towards Huawei's telecom operations, which would mean its wireless networking equipment, especially those related to 5G.

CHINA: The Great Firewall

Deng Xiaoping in the early 1980s, "If you open the window, both fresh air and flies will be blown in"

Censura de Conteúdos

Bloqueio selectivo de Websites

Retarda tráfico internacional

USA vs CHINA

Baidu vs. Google: What's the Difference?



By SHOBHIT SETH | Updated Jun 25, 2019

Baidu vs. Google: An Overview

As Google ([GOOGL](#)) maintains its stronghold in the global internet search arena, Baidu, Inc., ([BIDU](#)) has the upper hand in China, with [74.6 percent of the nation's online search queries](#), as of February 2019. Google China, a subsidiary of Google, ranked a distant fifth in China's online search market, with a 2.03 percent share.

Google China's search engine was launched in 2006 and abruptly pulled from mainland China in 2010 amid a major hack of the company and disputes over censorship of search results.

<https://www.technologyreview.com/2018/12/19/138307/how-google-took-on-china-and-lost/>

GLOBAL CHINA vs HONG KONG CHINA

JAN
2021

CHINA

ESSENTIAL HEADLINES FOR DIGITAL ADOPTION AND GROWTH
CHANGES TO DATA SOURCES MEAN VALUES ARE **NOT COMPARABLE** WITH PREVIOUS REPORTS



TOTAL
POPULATION



1.44
BILLION

URBANISATION
61.9%

ANNUAL CHANGE
+0.4%
+5.2 MILLION

MOBILE
CONNECTIONS



1.61
BILLION

vs. POPULATION:
111.8%

ANNUAL CHANGE:
+0.5%
+8.0 MILLION

INTERNET
USERS



939.8
MILLION

vs. POPULATION:
65.2%

ANNUAL CHANGE
+10.0%
+85 MILLION

ACTIVE SOCIAL
MEDIA USERS*



930.8
MILLION

vs. POPULATION:
64.6%

ANNUAL CHANGE:
+12.9%
+110 MILLION

JAN
2021

HONG KONG

ESSENTIAL HEADLINES FOR DIGITAL ADOPTION AND GROWTH
CHANGES TO DATA SOURCES MEAN VALUES ARE **NOT COMPARABLE** WITH PREVIOUS REPORTS



TOTAL
POPULATION



7.52
MILLION

URBANISATION
100.0%

ANNUAL CHANGE
+0.8%
+58 THOUSAND

MOBILE
CONNECTIONS



13.80
MILLION

vs. POPULATION:
183.4%

ANNUAL CHANGE:
-2.2%
-306 THOUSAND

INTERNET
USERS



6.92
MILLION

vs. POPULATION:
92.0%

ANNUAL CHANGE
+1.9%
+128 THOUSAND

ACTIVE SOCIAL
MEDIA USERS*



6.44
MILLION

vs. POPULATION:
85.6%

ANNUAL CHANGE:
+1.7%
+110 THOUSAND

China: Perfis financeiros, sociais e morais

Perfis Financeiros

Este sistema também existe no sistema bancário ocidental.

A pessoa é de confiança para receber um crédito?

Na China existe uma Lista Negra online de pessoas não confiáveis

Sistemas de Crédito Social (consoante as cidades)

Atravessa a rua fora da passadeira?

Não vai visitar os seus pais idosos?

Ouve música muito alto?

Não recicla adequadamente ?

Castigos:

Humilhação pública em outdoors electrónicos

Não aceitação de reservas em restaurantes e hotéis

Proibição de andar de avião ou em comboios rápidos

Rússia: RUNET, uma Internet nacional



23_12_2019

Новости

00:31 В Бейруте прошел митинг в память о геноциде армян

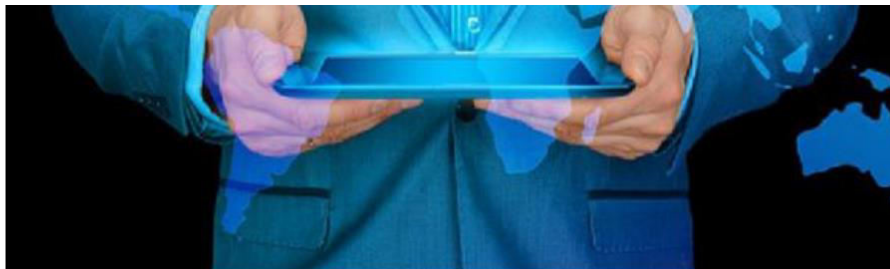
00:13 Четверо детей погибли в огне под Пермью

23:55 Захарова вспомнила чешского классика, комментируя ситуацию в Чехии

В России прошли первые учения по защите суверенного рунета

© 23.12.2019 20:54
ПОЛИТИКА

Сегодня, 23 декабря, прошли первые учения по защите российского сегмента интернета, сообщил заместитель главы Министерства цифрового развития, связи и массовых коммуникаций Алексей Соколов.



"Выяснилось, что в целом и органы власти, и операторы связи готовы эффективно реагировать на возможные риски и угрозы и обеспечивать функционирование сети интернет и единой сети электросвязи в России", — утверждает Соколов.

"It turned out that, in general, both the authorities and telecom operators are ready to effectively respond to possible risks and threats and ensure the functioning of the Internet and the unified telecommunication network in Russia," Sokolov says. Read more at <https://www.pravda.ru/news/politics/1461663-runet/>

A Formatação no Ciberespaço

The  Moscow Times
INDEPENDENT NEWS FROM RUSSIA

NEWS OPINION BUSINESS MEANWHILE ARTS AND LIFE PODCASTS VIDEOS IN-DEPTH

Russia Plans Its Own Version of Wikipedia by 2023

The project aims to attract three times as much traffic as Wikipedia.org.

Oct. 9, 2019



Russian version of Wikipedia to launch Monday, reports say

By Reuters

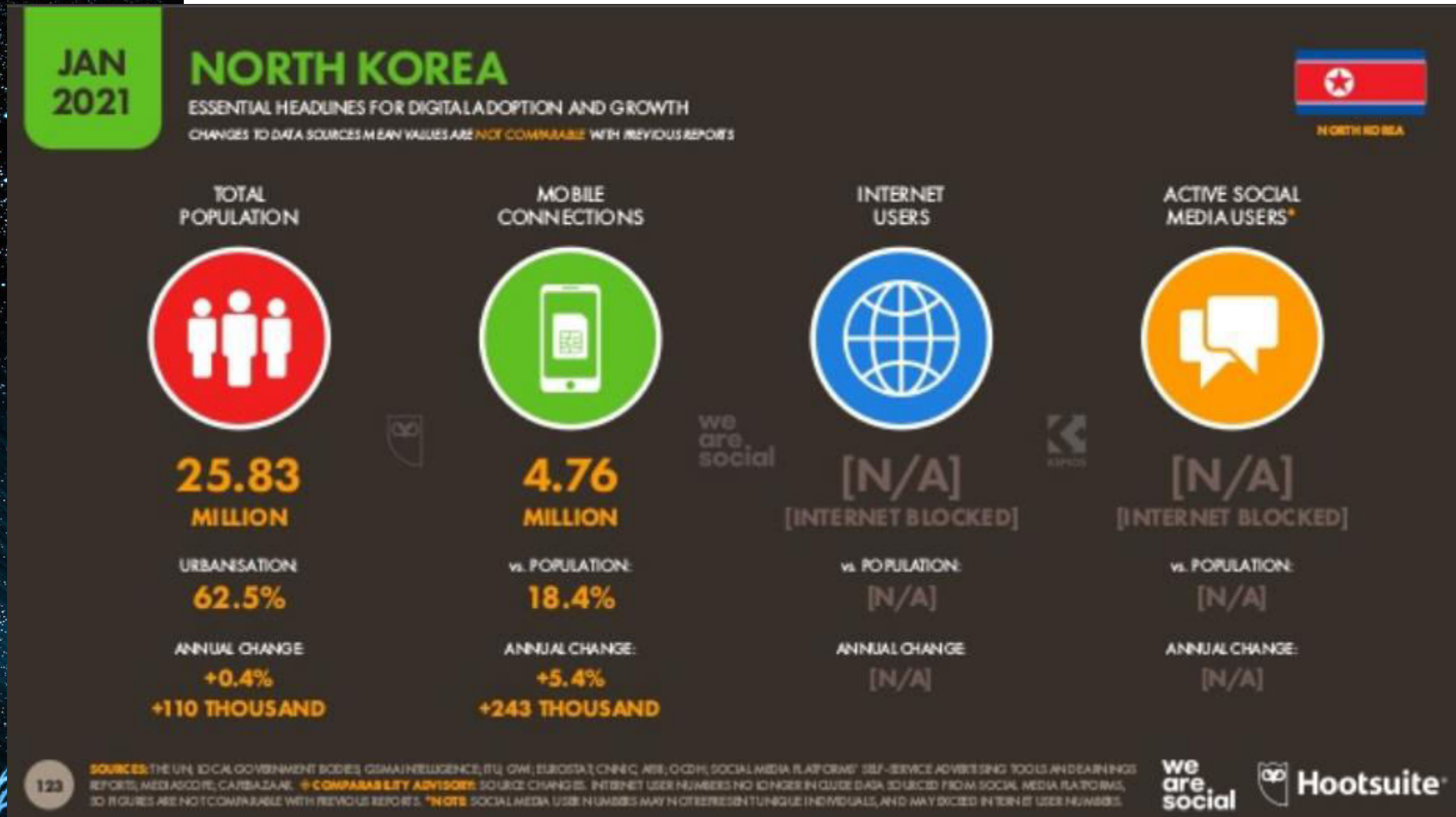
January 15, 2024 4:58 AM

GMTUpdated 4 months ago

Jan 15 (Reuters) - A full-scale launch of Ruwiki, a Russian version of the popular Wikipedia internet encyclopaedia, will take place on Monday, according to Russian media reports.

Russia has said it was not yet planning to block Wikipedia - one of the few surviving independent sources of information in Russia

O Ciberespaço na Coreia do Norte



<https://www.slideshare.net/DataReportal/digital-2021-local-country-headlines-report-january-2021-v03>

Actores não-estatais

IDF: Hamas hacked soldiers' phones by posing as pretty girls

In 'catfishing' attack, dozens of servicemen duped by fake accounts as terrorist group tries to extract intel from social media, smartphones

BY JUDAH ARI GROSS | January 11, 2017, 5:55 pm |

Tweet



2

Email

THE TIMES OF ISRAEL
11Jan2017



A Forças de Defesa de Israel revelaram que o HAMAS criou falsos perfis nas Redes Sociais, para interagir com soldados israelitas e obter informação sensível.

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O Admirável Mundo Cibernético em 2021 ... não se confirma em 2023 ...



CORONAVÍRUS

Um grande passo para uma empresa e um primeiro passo para o resto da Humanidade? Funcionários do Twitter podem trabalhar em casa para sempre

A Revolução do 5 G



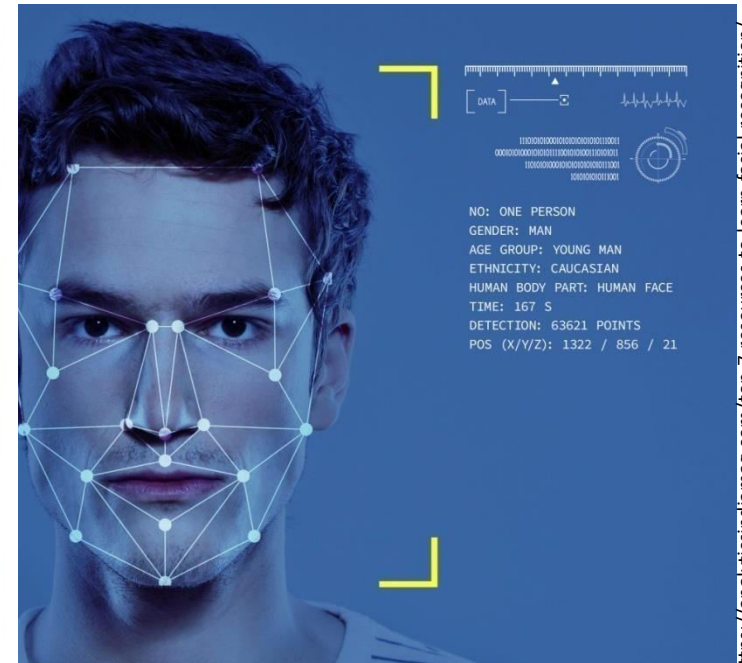
- 4G accommodate a few thousand IoT devices per square mile,
- 5G will provide connectivity for millions of devices per square mile.
- 4G networks have latency rates between 50-100 milliseconds,
- 5G would reduce that to just 1-4 milliseconds, a crucial difference when it comes to systems that need instantaneous reaction, such as autonomous vehicles and remote surgery.

Quem controla o fabricante?

Banned Chinese Security Cameras Are Almost Impossible to Remove



Source: Bloomberg



Several years ago the Department of Homeland Security tried to force all federal agencies to secure their networks by tracking every connected device. As of December 2018, only 35 percent of required agencies had fully complied with this mandate ... As a result, **most U.S. federal agencies still don't know how many or what type of devices are connected to their networks (18Jul2019)**

DEEP FAKE – Verdadeiro/Falso ?



Será impossível distinguir o verdadeiro do falso
Implicações catastróficas no domínio político
Impactos destruidores nas vidas pessoais

Segurança e Tecnologia vs. Liberdade



<https://techcrunch.com/2019/05/03/china-smart-city-exposed/>

« Todo aquele que estiver disposto a abdicar da sua Liberdade em nome de Segurança, não merece nem terá nenhuma das duas »

Benjamin Franklin

Esta Conferência já está na Web

1º Passo – Pesquisar no Google “Blog Arnaut”



Blog Arnaut

2º Passo – Entrar em “Geopolítica”

Quinta dos Arnaut

Uma quinta sobre a montanha

Blog / Arboreto / Fauna / Contacto / Documentos / **Geopolítica**

3º Passo – Procurar nas
“Conferências”

Conferências

2019_04_10 Universidade Nova: Uma Geopolítica Africana

Geopolítica de África v5

2019_04_03 Universidade Autónoma: O Crime Organizado Transnacional



Evolução e Desafios Futuros do Ciberespaço

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