

Evolução e Desafios Futuros do Ciberespaço

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<https://www.itworldcanada.com>

IUM 14 Out 2024

A Importância da Infraestrutura Física

Ukraine is furious with Elon Musk for thwarting an attack on Russia's navy

The tech billionaire said Thursday that he had told his engineers not to turn on the Starlink satellite network over Crimea to prevent a planned attack on the Black Sea fleet last year.



2023

<https://www.nbcnews.com/news/world/musk-stopped-ukrain>

Antena
Starlink
em Shahed-136



25 Set 2024

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
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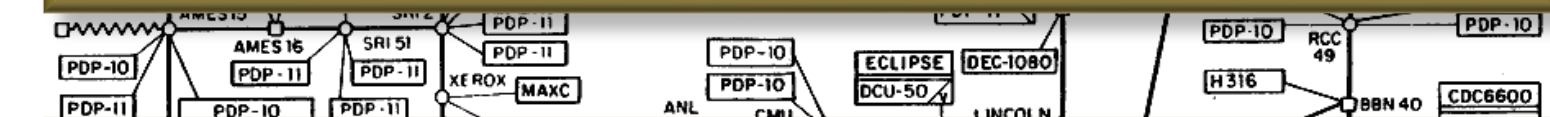
Agenda

CIBERESPAÇO

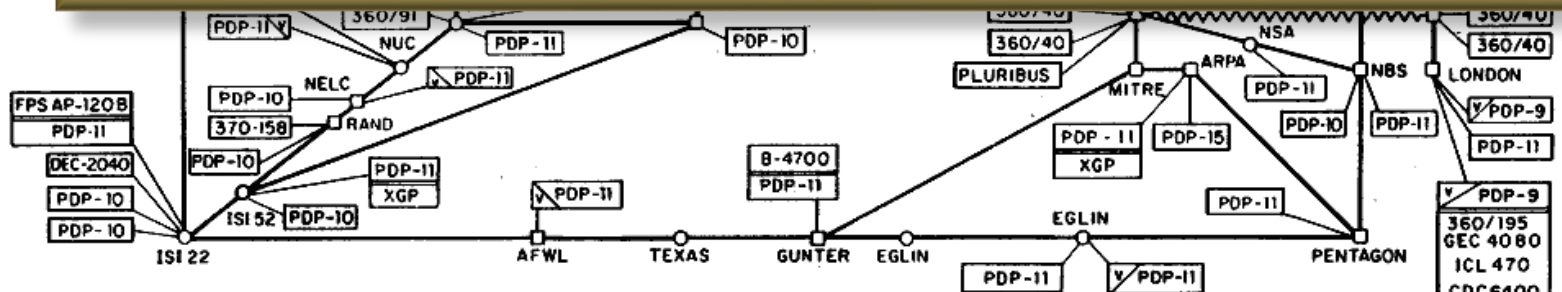
Conjunto de Actores e de Sistemas Físicos e Aplicacionais que permite a conexão em rede a uma escala global.

Evolução da ARPANET

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

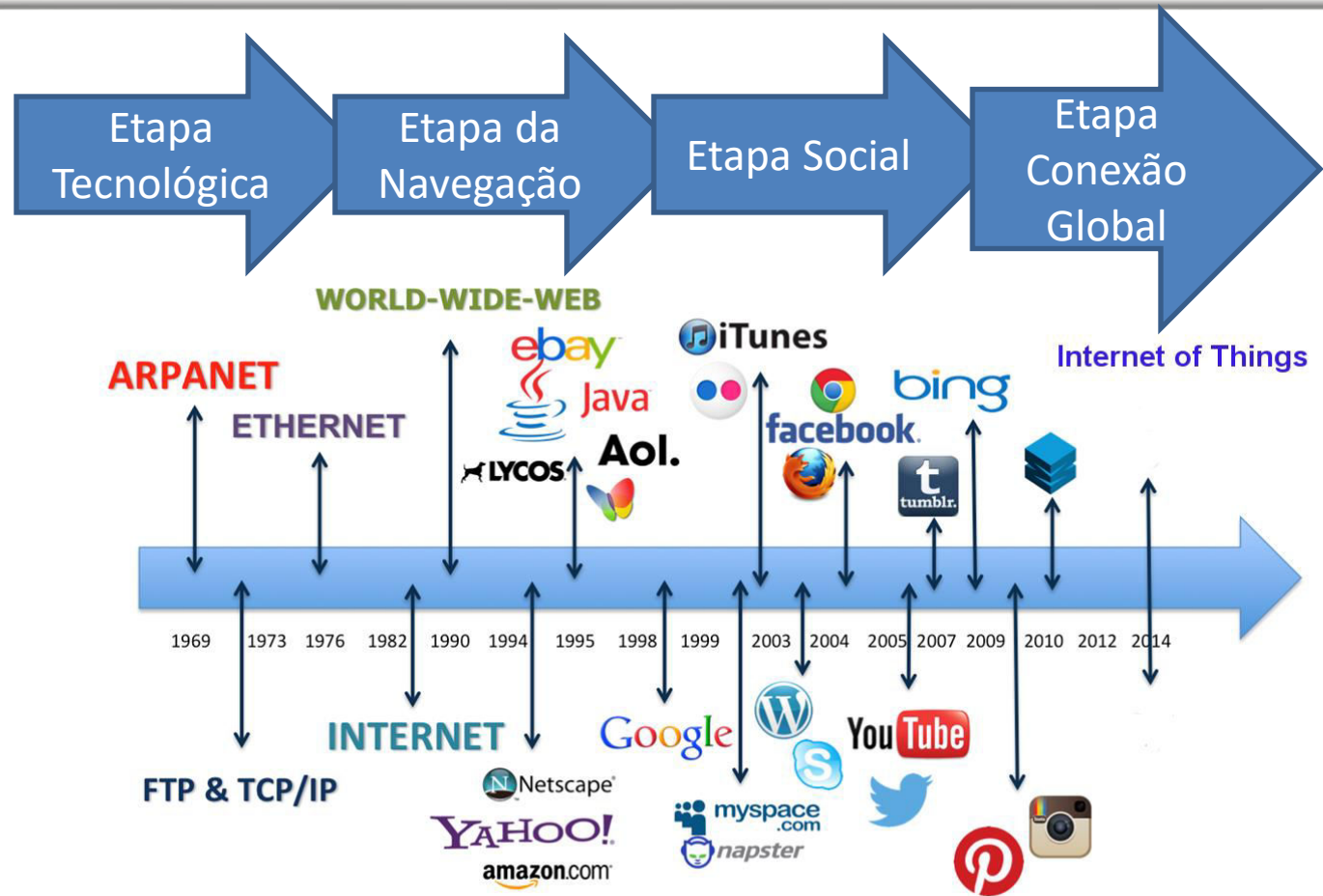


Objectivo: Ligar bases militares a centros de investigação através de uma rede com múltiplas conexões e sem um centro de controlo definido. Estamos na Guerra Fria



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

A evolução da Internet em 4 etapas



The Digital World 2024

JUL
2024

ESSENTIAL DIGITAL HEADLINES

OVERVIEW OF THE ADOPTION AND USE OF CONNECTED DEVICES AND SERVICES



TOTAL
POPULATION



we
are
social

8.12
BILLION

URBANISATION
57.9%

UNIQUE MOBILE
PHONE SUBSCRIBERS



Meltwater

5.68
BILLION

vs. POPULATION
70.0%

INDIVIDUALS USING
THE INTERNET



KEPIOS

5.45
BILLION

vs. POPULATION
67.1%

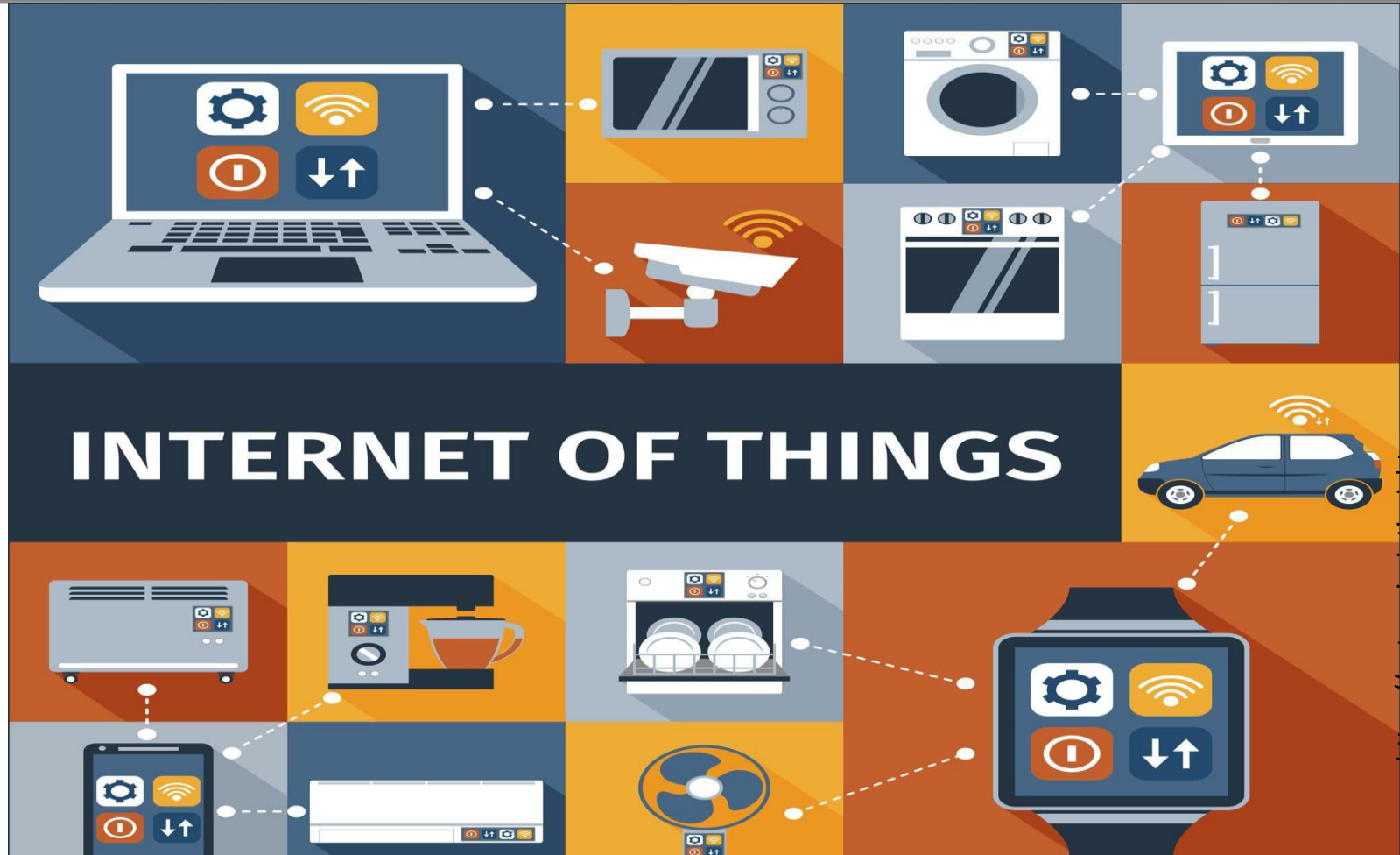
SOCIAL MEDIA
USER IDENTITIES



5.17
BILLION

vs. POPULATION
63.7%

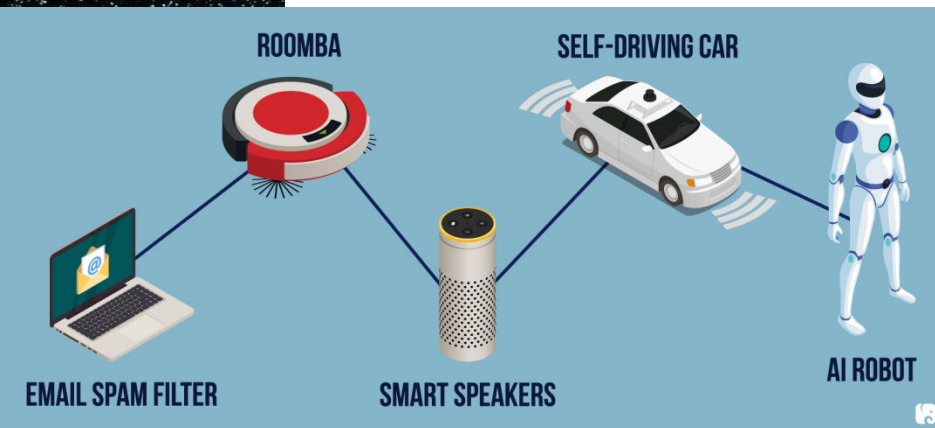
The IOT Trend



The number of connected devices exceeds already 50 billion

Artificial Intelligence

Ability of an object to take adequate decisions taking into account its changing environment. May involve “learning”.



An AI machine can perceive, evaluate, and act more quickly and accurately than a human

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.

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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

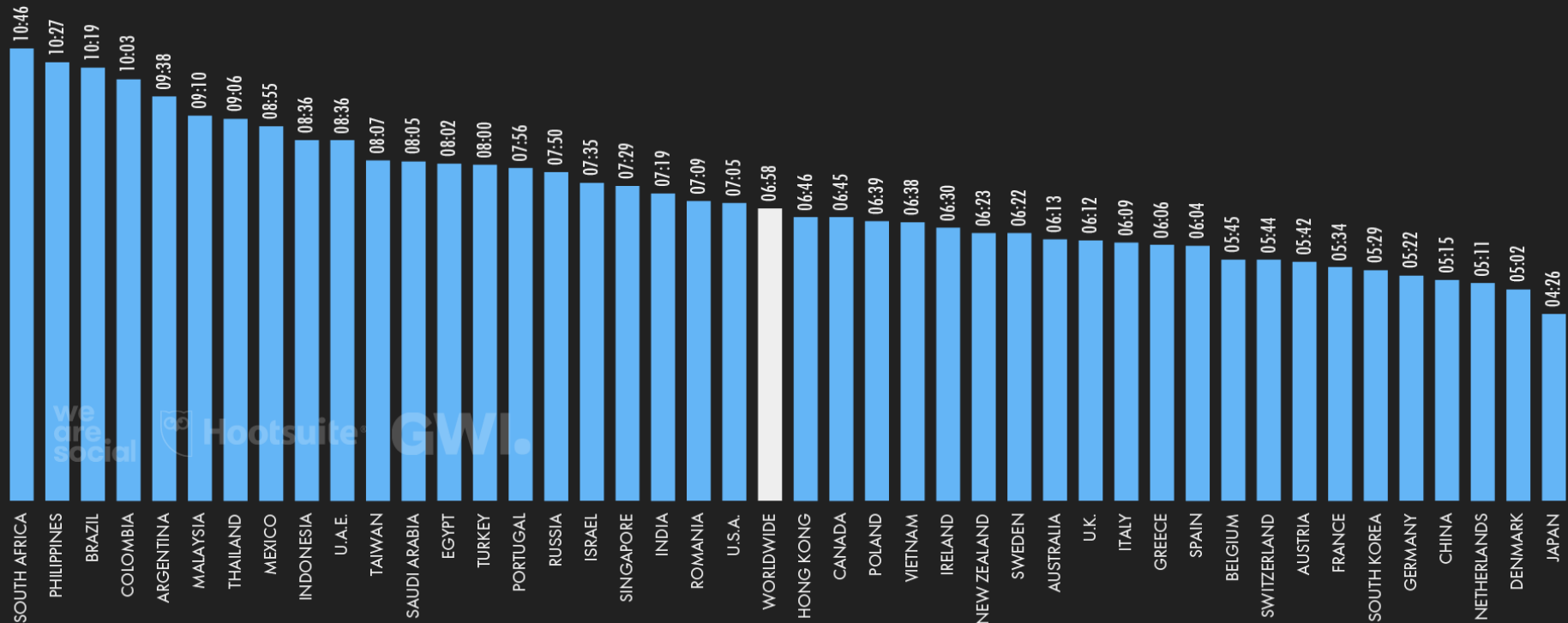
- 
- a. Os internautas
 - b. As empresas
 - c. As instituições
 - d. Os serviços de informações
 - e. As forças armadas
 - f. Os activismos
 - g. Os hackers
 - h. O crime organizado
 - i. Actores não-estatais

Utilização Média por Dia : 6H 58 M

JAN
2022

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



27

SOURCE: GWI (Q3 2021). FIGURES REPRESENT THE FINDINGS OF A BROAD GLOBAL SURVEY OF INTERNET USERS AGED 16 TO 64. SEE [GWI.COM](https://gwi.com) FOR FULL DETAILS.

we
are
social

Hootsuite®

<https://datareportal.com/reports/digital-2022-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

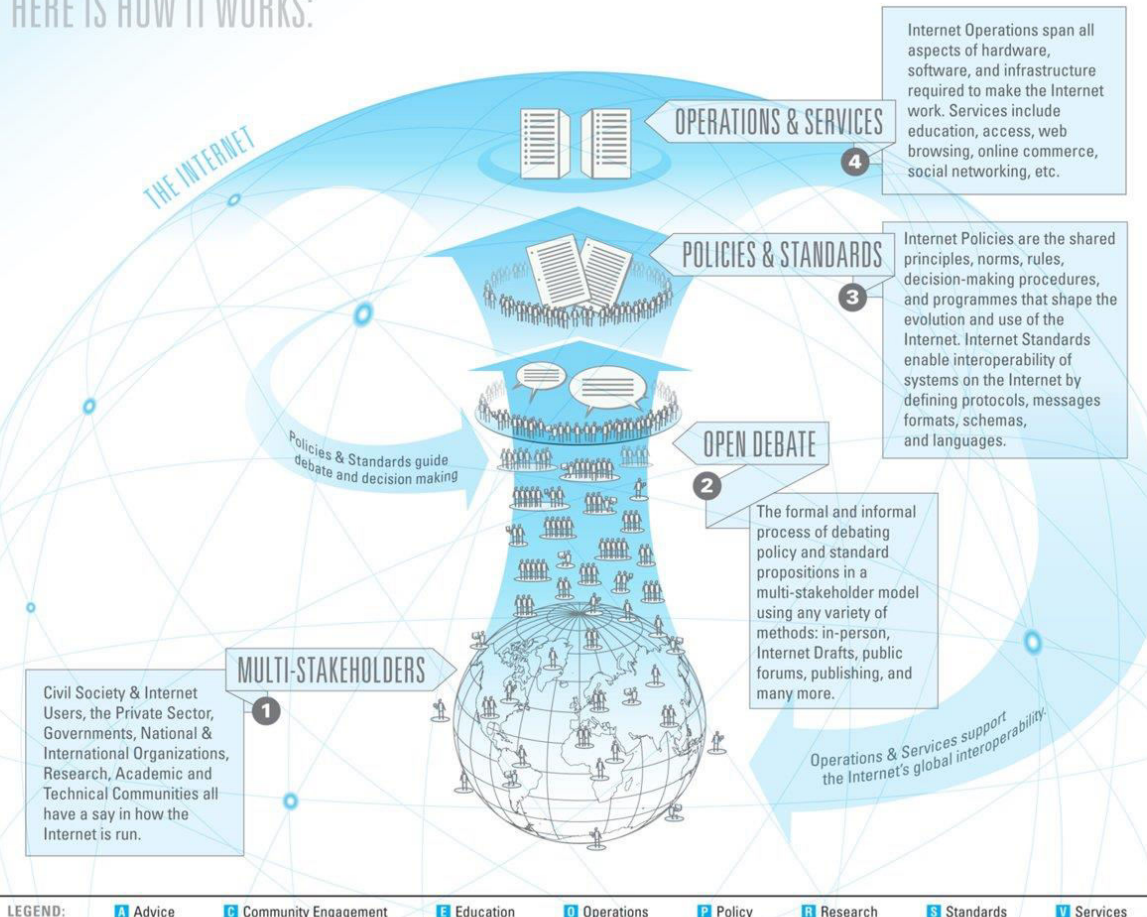
IRTF **R**

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:



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.

Os EUA e o Ciberespaço

Largest Companies by Market Cap

companies: **7,973** total market cap: **\$88.960 T**  

Rank by **Market Cap** Earnings Revenue Employees P/E ratio Dividend % Market Cap gain More +

Rank	Name	Market Cap	Price	Today	Price (30 days)	Country
1	 Apple AAPL	\$2.796 T	\$178.85	▼ 1.03%		 USA
2	 Microsoft MSFT	\$2.434 T	\$327.73	▼ 1.04%		 USA
3	 Saudi Aramco 2222.SR	\$2.174 T	\$8.99	▲ 0.45%		 S. Arabia
4	 Alphabet (Google) GOOG	\$1.738 T	\$138.58	▼ 1.22%		 USA
5	 Amazon AMZN	\$1.339 T	\$129.79	▼ 1.92%		 USA
6	 NVIDIA NVDA	\$1.122 T	\$454.61	▼ 3.16%		 USA
7	 Meta Platforms (Facebook) META	\$809.74 B	\$314.69	▼ 2.92%		 USA
8	 Tesla TSLA	\$797.05 B	\$251.12	▼ 2.99%		 USA

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

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

Governments and the Open Cyberspace

Russia is
looking for a
National
Internet

RUNET

“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/>

≡ pravda.ru

МИР ПОЛИТИКА ЭКОНОМИКА СПОРТ ТУРИЗМ РОССИЯ АРХИВ

23_12_2019

Новости

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

00:13 Четверо детей погибли в огне под Пермью

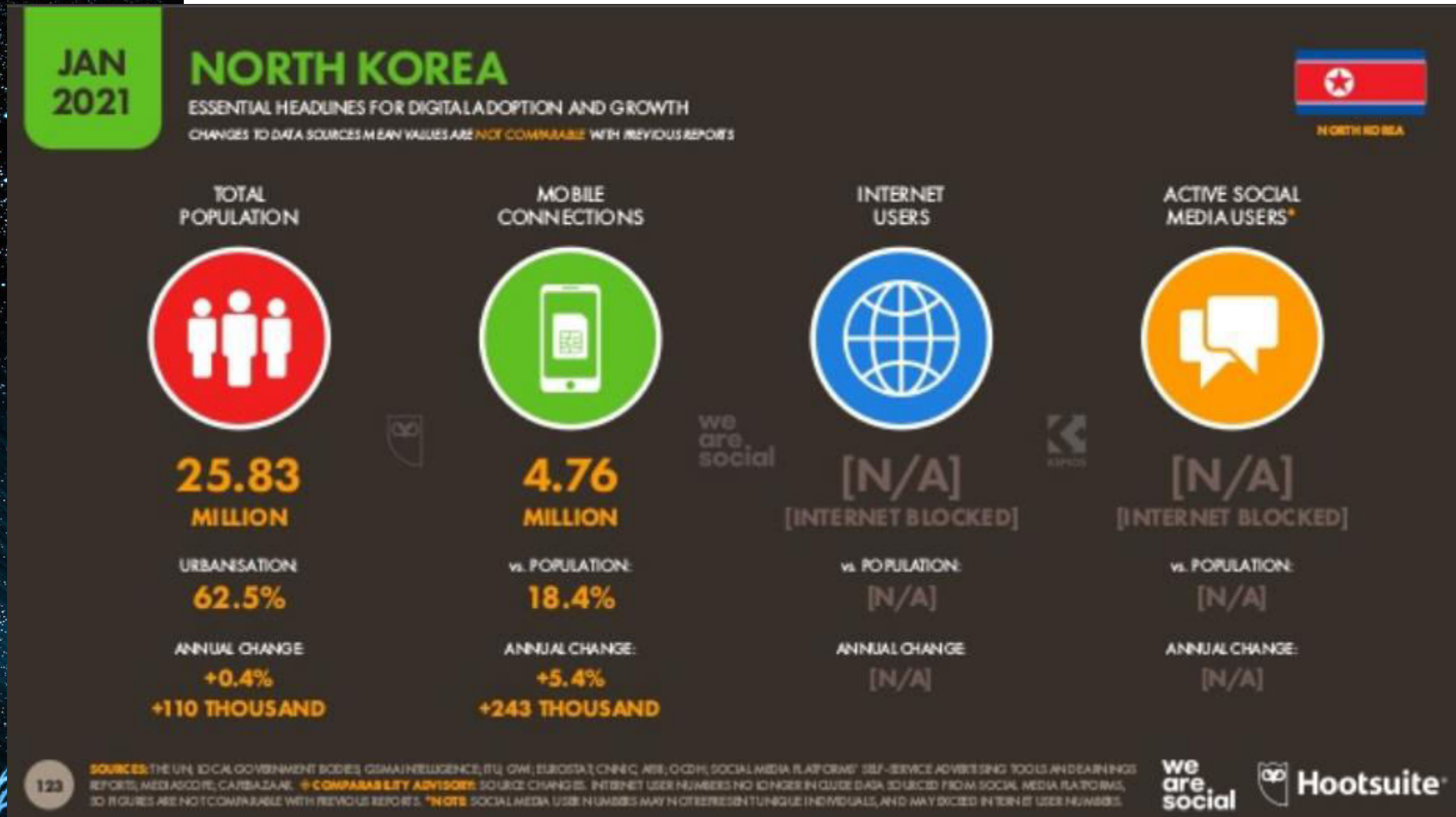
23:55 Захарова вспомнила чешского классика, комментируя ситуацию в Чехии

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.

O Ciberespaço na Coreia do Norte



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

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Já não sobra tempo para trabalhar ...

JAN
2024

DAILY TIME SPENT WITH MEDIA

THE AVERAGE AMOUNT OF TIME EACH DAY THAT INTERNET USERS AGED 16 TO 64 SPEND WITH DIFFERENT KINDS OF MEDIA AND DEVICES



GLOBAL OVERVIEW

TIME SPENT USING
THE INTERNET



GWJ.

6H 40M

YEAR-ON-YEAR CHANGE
+0.8% (+3 MINS)

TIME SPENT WATCHING TELEVISION
(BROADCAST AND STREAMING)



Meltwater

3H 06M

YEAR-ON-YEAR CHANGE
-8.2% (-17 MINS)

TIME SPENT USING
SOCIAL MEDIA



GWJ.

2H 23M

YEAR-ON-YEAR CHANGE
-5.5% (-8 MINS)

TIME SPENT READING PRESS MEDIA
(ONLINE AND PHYSICAL PRINT)



1H 41M

YEAR-ON-YEAR CHANGE
-22.2% (-29 MINS)

TIME SPENT LISTENING TO
MUSIC STREAMING SERVICES



we
are
social

1H 25M

YEAR-ON-YEAR CHANGE
-12.8% (-13 MINS)

TIME SPENT LISTENING
TO BROADCAST RADIO



GWJ.

0H 50M

YEAR-ON-YEAR CHANGE
-15.5% (-9 MINS)

TIME SPENT LISTENING
TO PODCASTS



KEPHOS

0H 49M

YEAR-ON-YEAR CHANGE
-20.3% (-13 MINS)

TIME SPENT USING
A GAMES CONSOLE



1H 02M

YEAR-ON-YEAR CHANGE
-16.7% (-12 MINS)

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)**

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

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