

Vattay Gábor ELTE Komplex Rendszerek Fizikája Tanszék

Szociális hálózatok, virális videók, meg minden ...

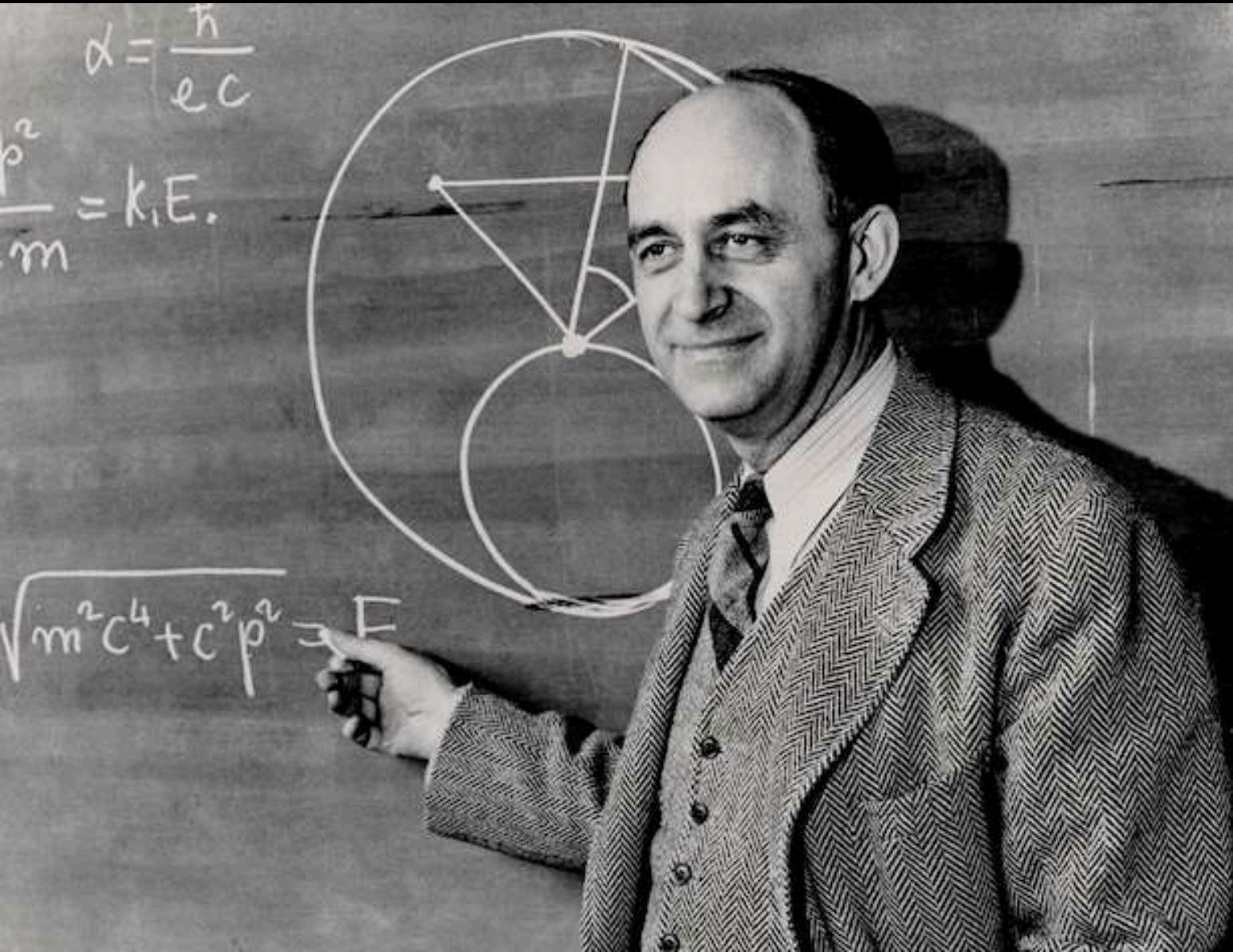
Akik nélkül ez az atomcsill nem lett volna:

- Csabai István professzor KRFT
- Dobos László adjunktus KRFT
- Stéger József adjunktus KRFT

- Kondor Dániel postdoc MIT Senseable City Lab
- Bokányi Eszter doktorandusz KRFT

- Kallus Zsófia doktorjelölt Ericsson Traffic Lab
- Szüle János doktorandusz Ericsson
- Sebők Tamás doktorandusz Ericsson
- Barankai Norbert doktorjelölt ELTE Kármán Lab

“Physics is what physicists do late at night.”

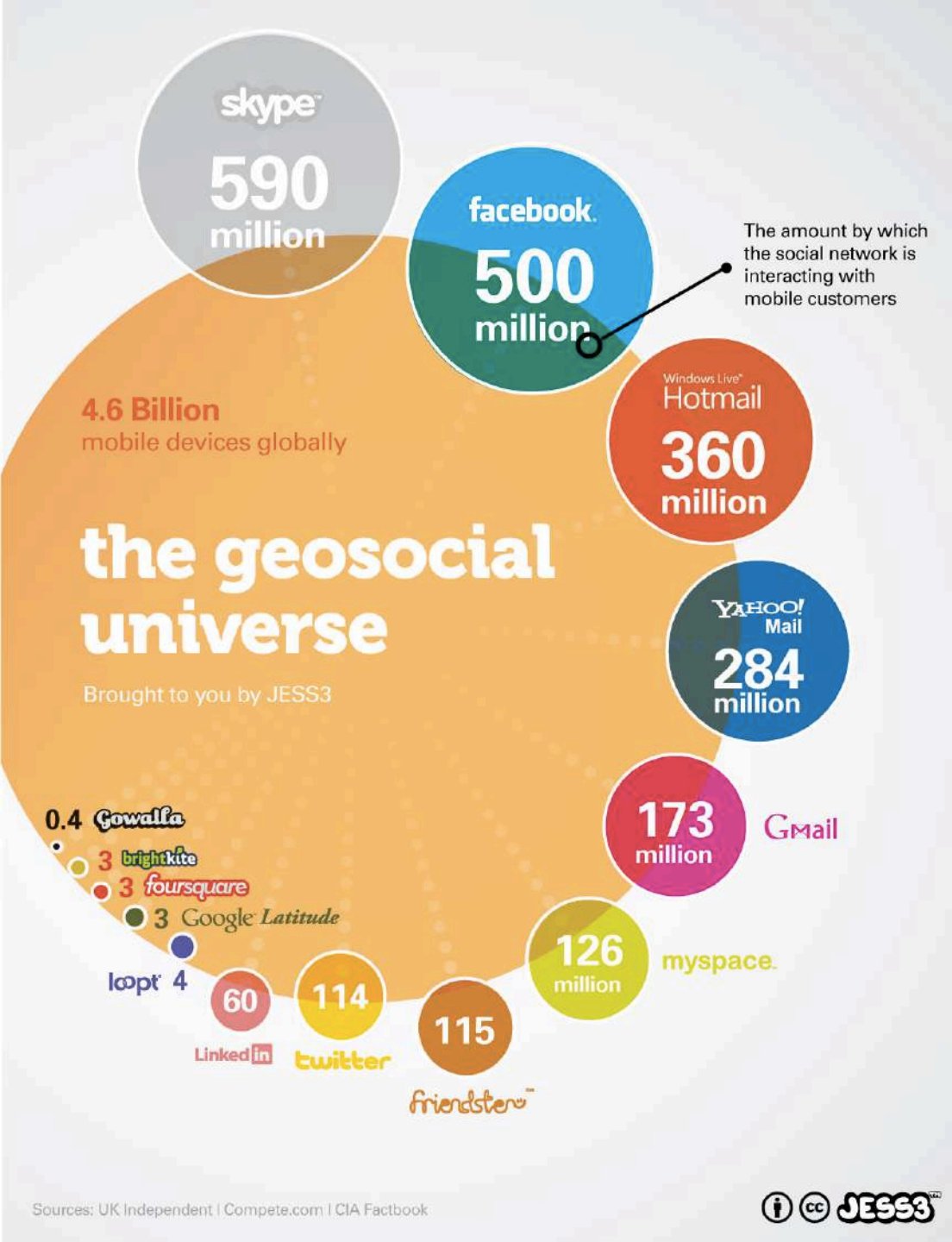


a SZOCIOLÓGIA mint TERMÉSZETTUDOMÁNY



a SZOCIOLÓGIA mint TERMÉSZETTUDOMÁNY





2010

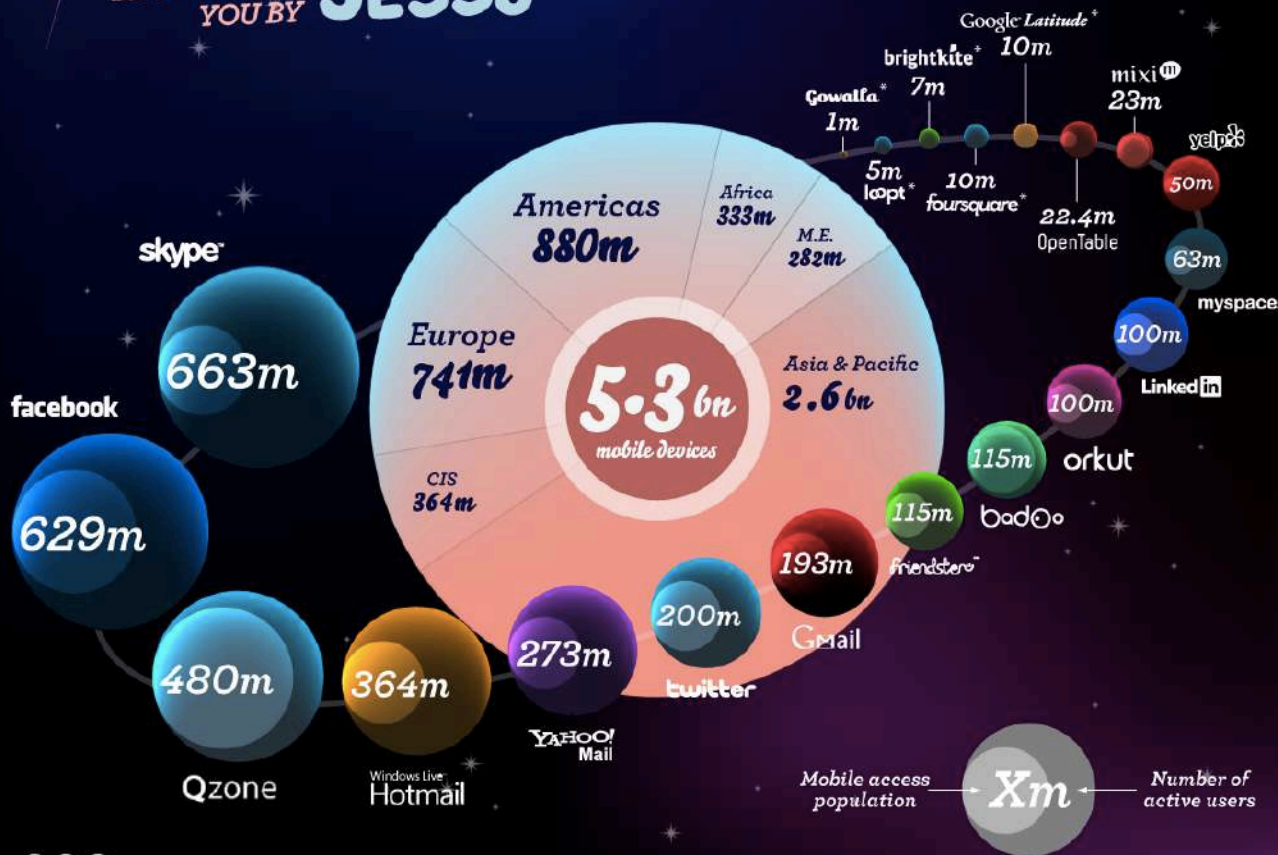
4.6 milliárd

THE Geosocial universe

BROUGHT TO YOU BY JESS3

Remember when Friendster dominated the U.S. social space? Like the universe, the geosocial landscape is constantly changing. While new stars are being born, black holes are also developing.

We looked at the current size of the major social networks and overlaid their current mobile user base.



2011

5.3
milliárd



JE993 PRESENTS GEOSOCIAL UNIVERSE 3.0

In today's Geosocial Universe, the supernova of mobile is orbited by practically every celestial body online like Facebook with its 1 billion users, to the meteorically rising Instagram, which shot to 100 million users in under 2 years on a 100% mobile platform.

With this third edition of this infographic, we check in with the worlds that keep turning, say goodbye to those that slipped into the black hole of obsolescence, and greet the burgeoning stars that make the Geosocial Universe an ever-expanding one.

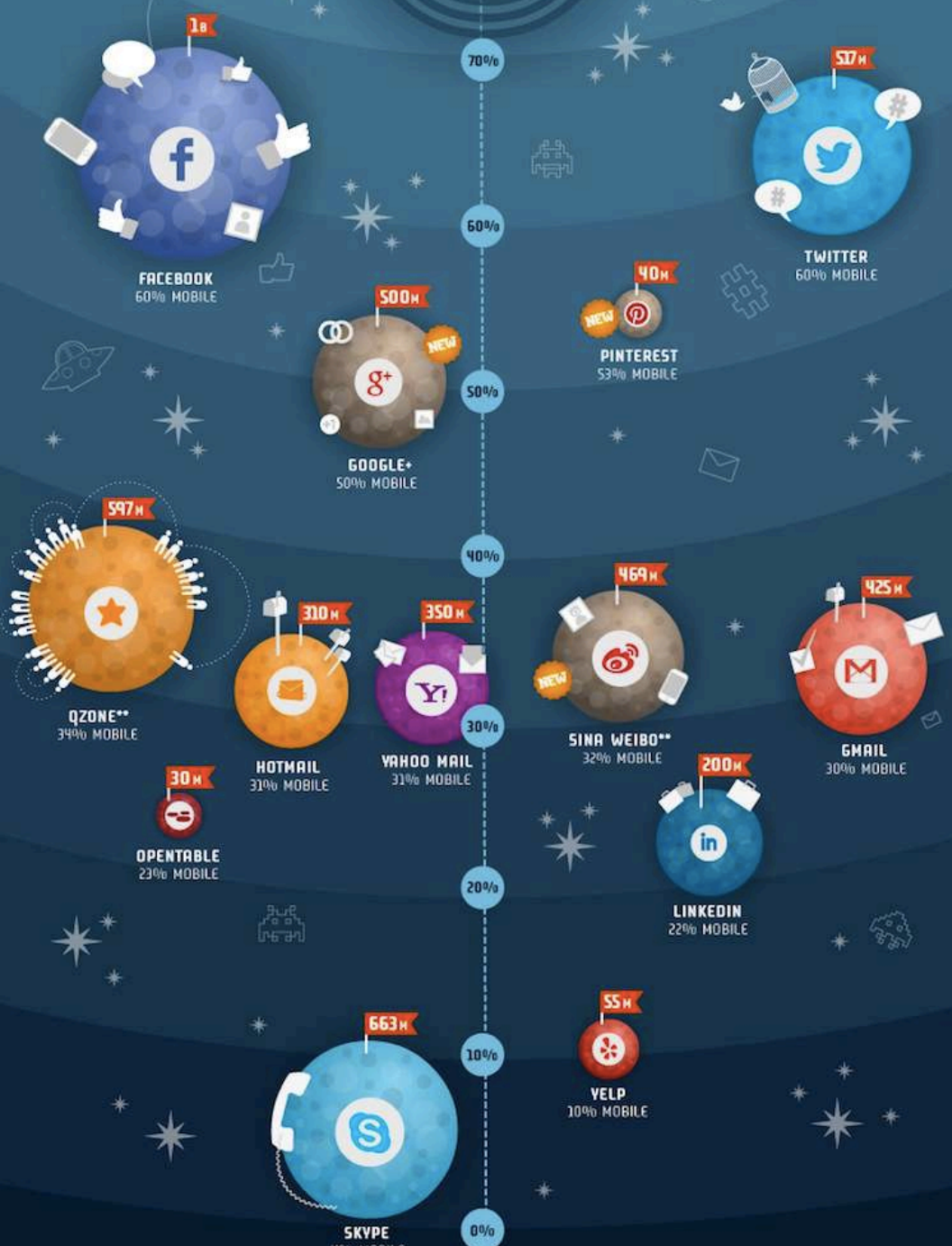
5.98 billion
MOBILE DEVICES
GLOBALLY



2013

5.98 milliárd

*Snapchat user figure is derived from the number of images sent daily and existing users numbers.
 **Qzone & Sina Weibo are social networks founded in China.
 Sources: Digital Trends, CNN, TechCrunch, The Next Web, CNet, Marketingland, Google, LinkedIn, Forbes, Serkan Toto, Open Table, Business Insider, Mashable, VentureBeat, Inc., mobilthinking
 Jan 2013



2013

5.98 milliárd

*Snapchat user figure is derived from the number of images sent daily and existing users numbers.

Facebook is where you lie to
your friends. Twitter is
where you're honest with
complete strangers.

- Unknown

boardofwisdom.com



KEY TWITTER STATS

Registered Users
316 Million



Mobile Users
80%

Tweets per Day
500 Million



TWEETS 7,256 FOLLOWING 166 FOLLOWERS 92.9M LIKES 2,669 Follow

KATY PERRY @katyperry
Rising...
smarturl.it/KatyRise
Joined February 2009

Tweet to KATY PERRY

11 Followers you know



Tweets Tweets & replies Media

Pinned Tweet
KATY PERRY @katyperry · Aug 5
Through the blood, sweat (lots of it), and tears, we keep rising 🍊 Finally, my new video for #RISE:

Rise - Katy Perry
Watch music videos and original shows on Vevo. Download Vevo free on mobile and TV devices.
vevo.com

Who to follow · Refresh · View all

- Kourtney Kardashian** Follow
- Khloé** @khloekardashian Follow
- Тавітна 'Bliss** @BlissTa... Follow

Find friends



TWEETS **33.2K** FOLLOWING **42** FOLLOWERS **11.6M** LIKES **39**

⚙️ **Following**

Donald J. Trump ✓
@realDonaldTrump

📍 New York, NY
🌐 DonaldJTrump.com
📅 Joined March 2009

✍️ **Tweet to Donald J. Trump**

👤 17 Followers you know



Tweets Tweets & replies Media



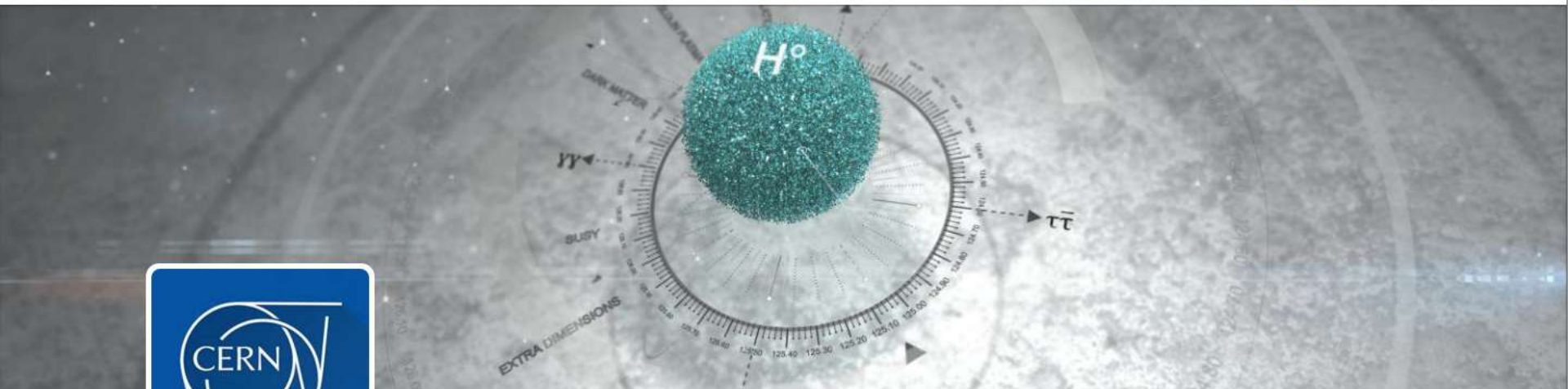
Donald J. Trump @realDonaldTrump · 2h
It is a MOVEMENT - not a campaign. Leaving the past behind, changing our future. Together, we will MAKE AMERICA SAFE AND GREAT AGAIN!



Who to follow · Refresh · View all

- 
BeCube @becubeSuli ×
[Follow](#)
- 
Linda Suhler, Ph.D. @Linda... ×
[Follow](#)
- 
Donald Trump Jr. ✓ @Don... ×
[Follow](#)

Find friends



CERN ✓
@CERN
CERN, the European Organization for Nuclear Research, is the world's largest particle physics lab and has #RestartLHC for #13TeV collisions. French: @CERN_FR
Geneva
home.cern
Joined June 2008

TWEETS 2,522 FOLLOWING 378 FOLLOWERS 1.52M LIKES 108 LISTS 6

Following

Tweets Tweets & replies Media

CERN @CERN · 6h
Successful global #openaccess Initiative, SCOAP3, continues for another 3 years
home.cern/about/updates/ ...

CERNpress



Who to follow · Refresh · View all

- Omri Har-Shemesh** @omrihar · Followed by Complexity Dig...
Follow
- Burcu Yucesoy** @Karhe · Followed by baruch barzel a...
Follow
- Domonkos Tikk** @domonko... · Followed by Jozsef J. Biro a...
Follow

Tweet to CERN

Adatbázisunk 2012-2014

4.0 Billion tweets

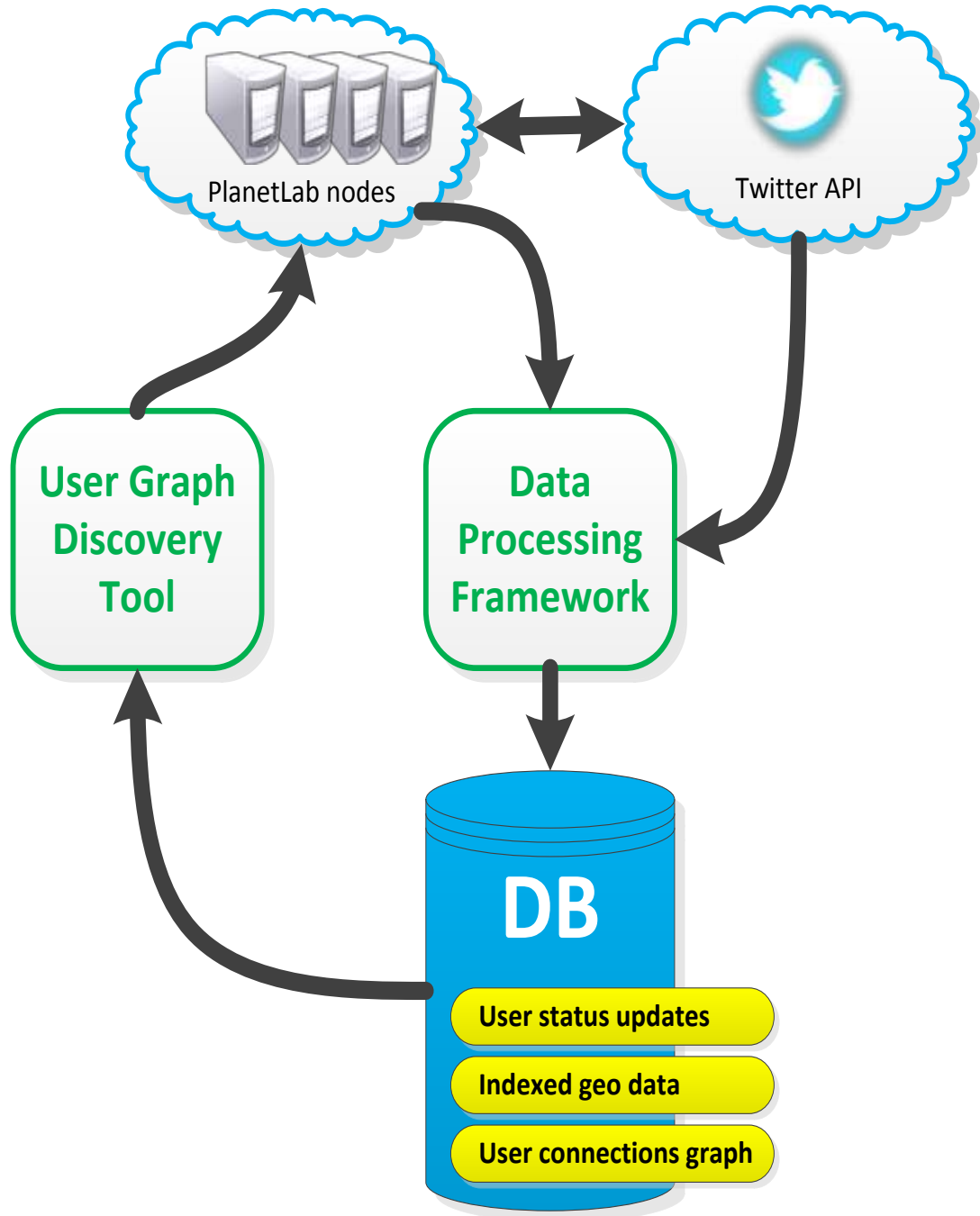
1.6 Billion GPS

130 Million users

Twitter barátság

Top 6 Million GPS

122 Million
Friendships



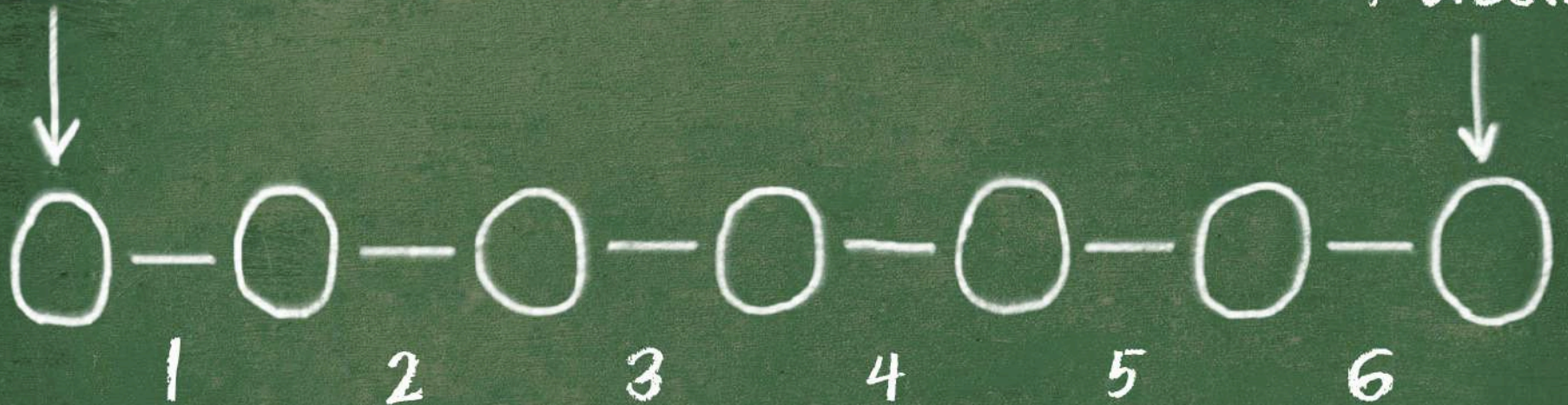
Twitter barátok hálózatunk @elte



KÍSÉRLETEK

You

Random
Person



degrees of separation

Milgram kis világ kísérlete (1967)



OPEN ACCESS PEER-REVIEWED RESEARCH ARTICLE

1,940 VIEWS

95 SHARES

Lost in the City: Revisiting Milgram's Experiment in the Age of Social Networks

János Szüle, Dániel Kondor, László Dobos, István Csabai, Gábor Vattay

Published: November 10, 2014 • DOI: 10.1371/journal.pone.0111973

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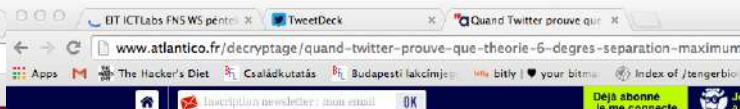
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Slate^{FR} / Tech & internet

Sur Twitter, la théorie des «six de

de séparation» ne fonctionne pas



atlantico

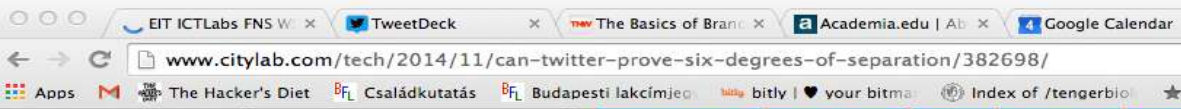
UN VENT NOUVEAU SUR L'INFO

ACCUEIL ATLANTICO EDITIONS DÉCRYPTAGE PÉPITES DOSSIERS RENDEZ-VOUS PÉPITES VIDÉOS

Strangers in the night

Publié le 25 Novembre 2014

Quand Twitter prouve que la théorie des 6 degrés de séparation



CITYLAB

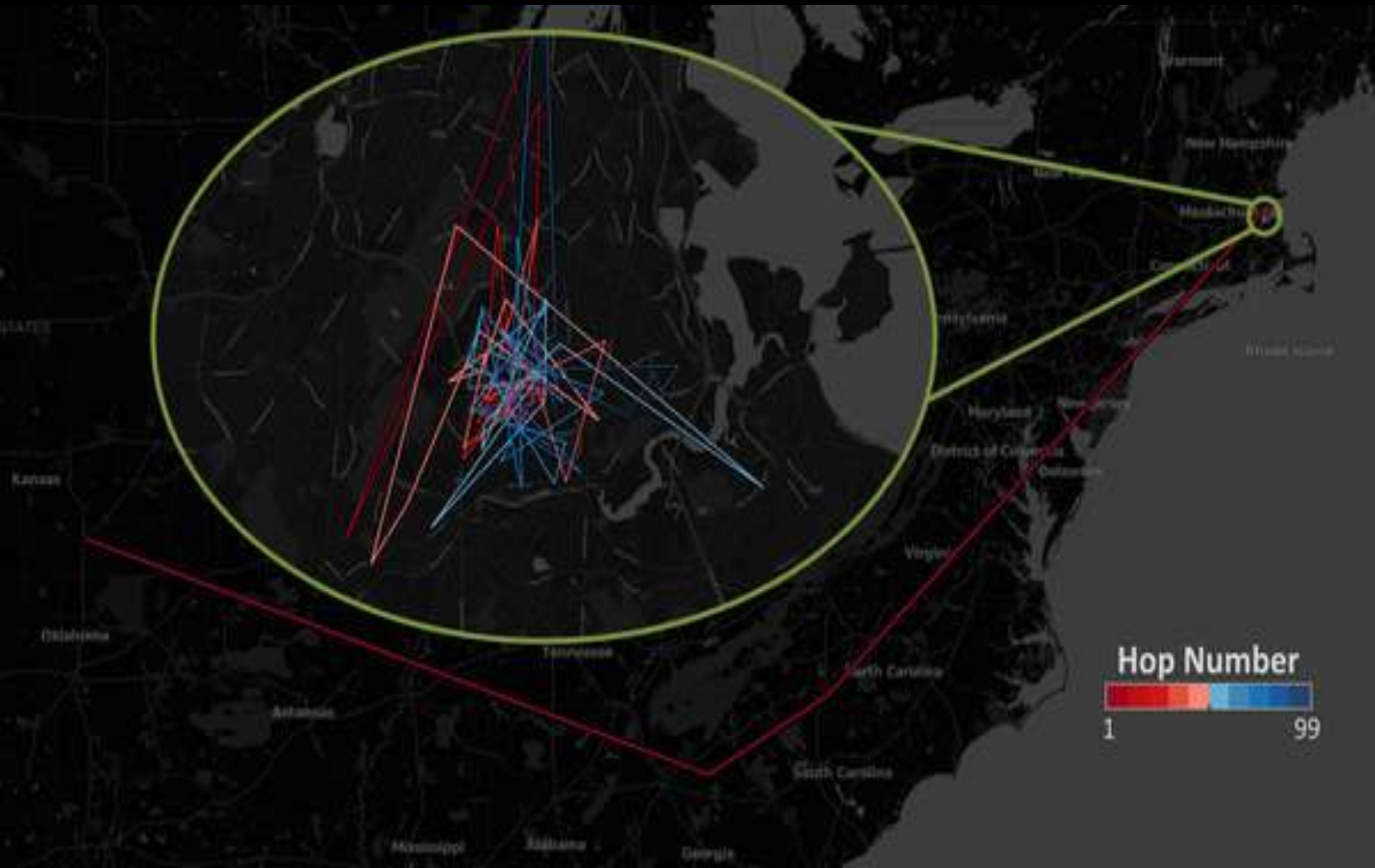
NAVIGATOR CITYFIXER MAPS PHOTOS VIDEOS SEARCH

COMMUTE WORK HOUSING WEATHER CRIME POLITICS DESIGN TECH

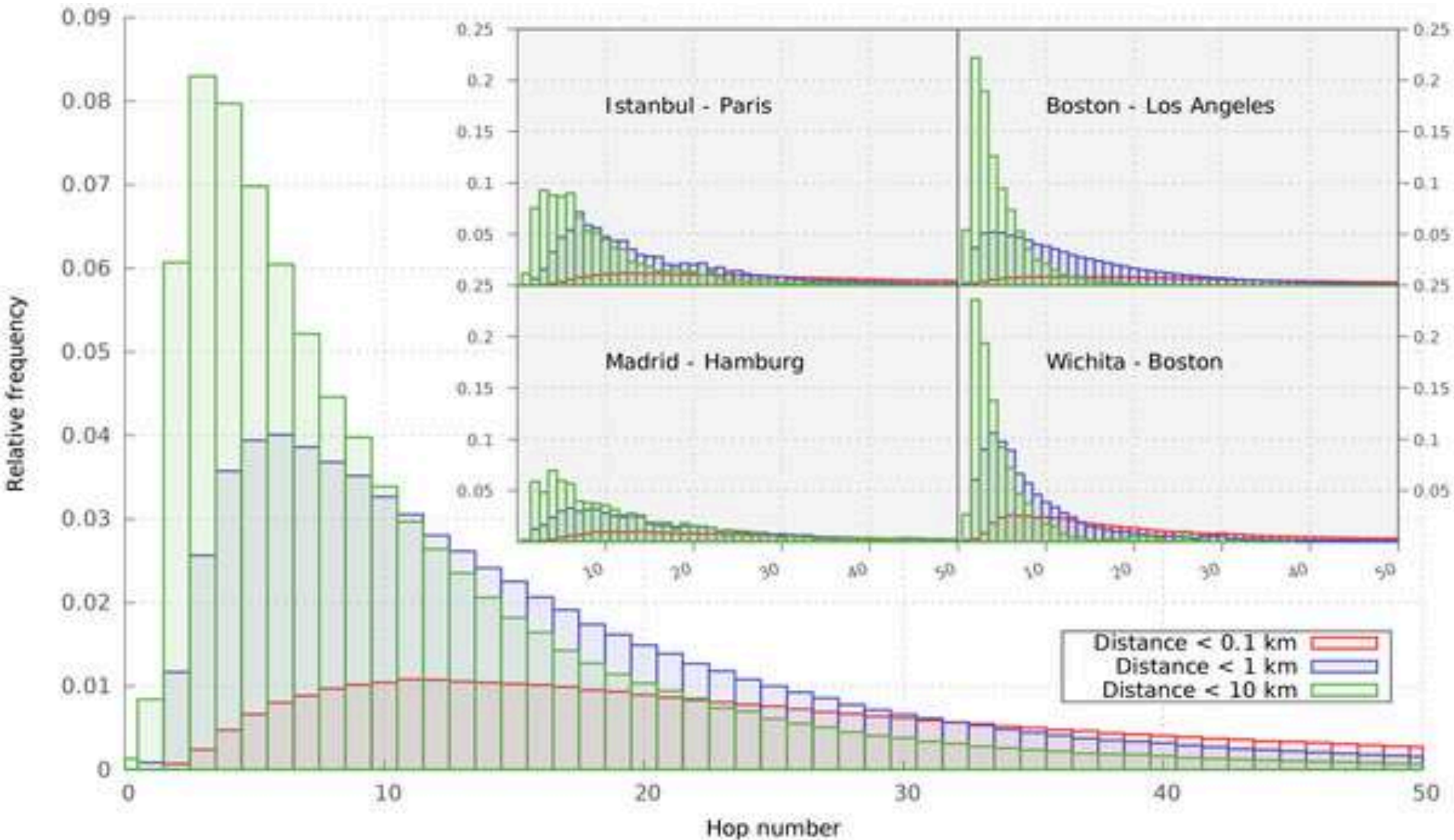
Why 'Six Degrees of Separation' Breaks Down Inside Cities

Inspired by Milgram's famous experiment, an analysis of Twitter networks and geography reveals how personal connections get lost at the city level.

A twitter barátság hálózaton megismételt kísérlet



Hány lépésre van szükség a cél megközelítéséhez?



A fizikai front modellek használata a virális videók terjedésére

TERJEDÉSI JELENSÉGEK



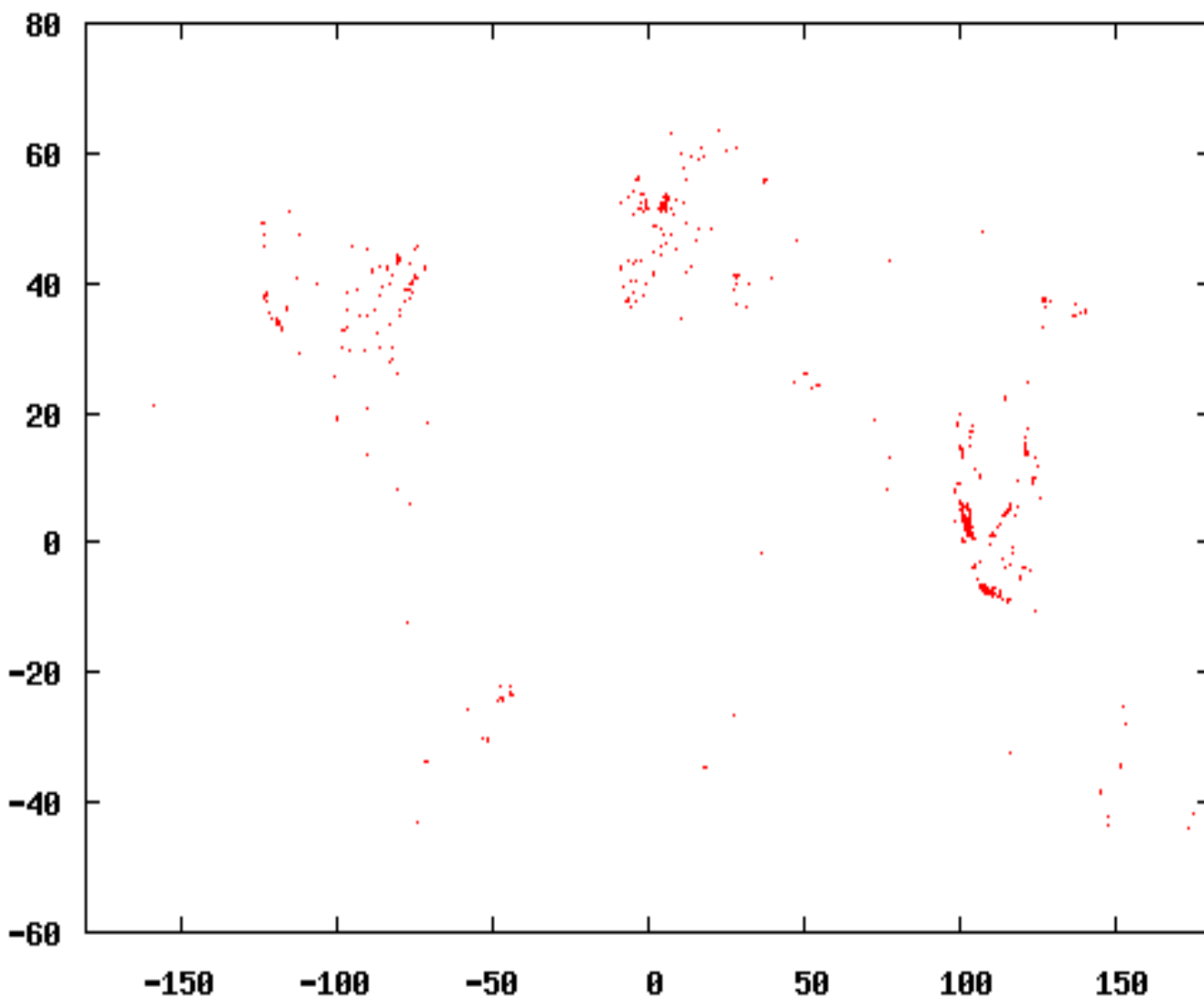


2012 július 15

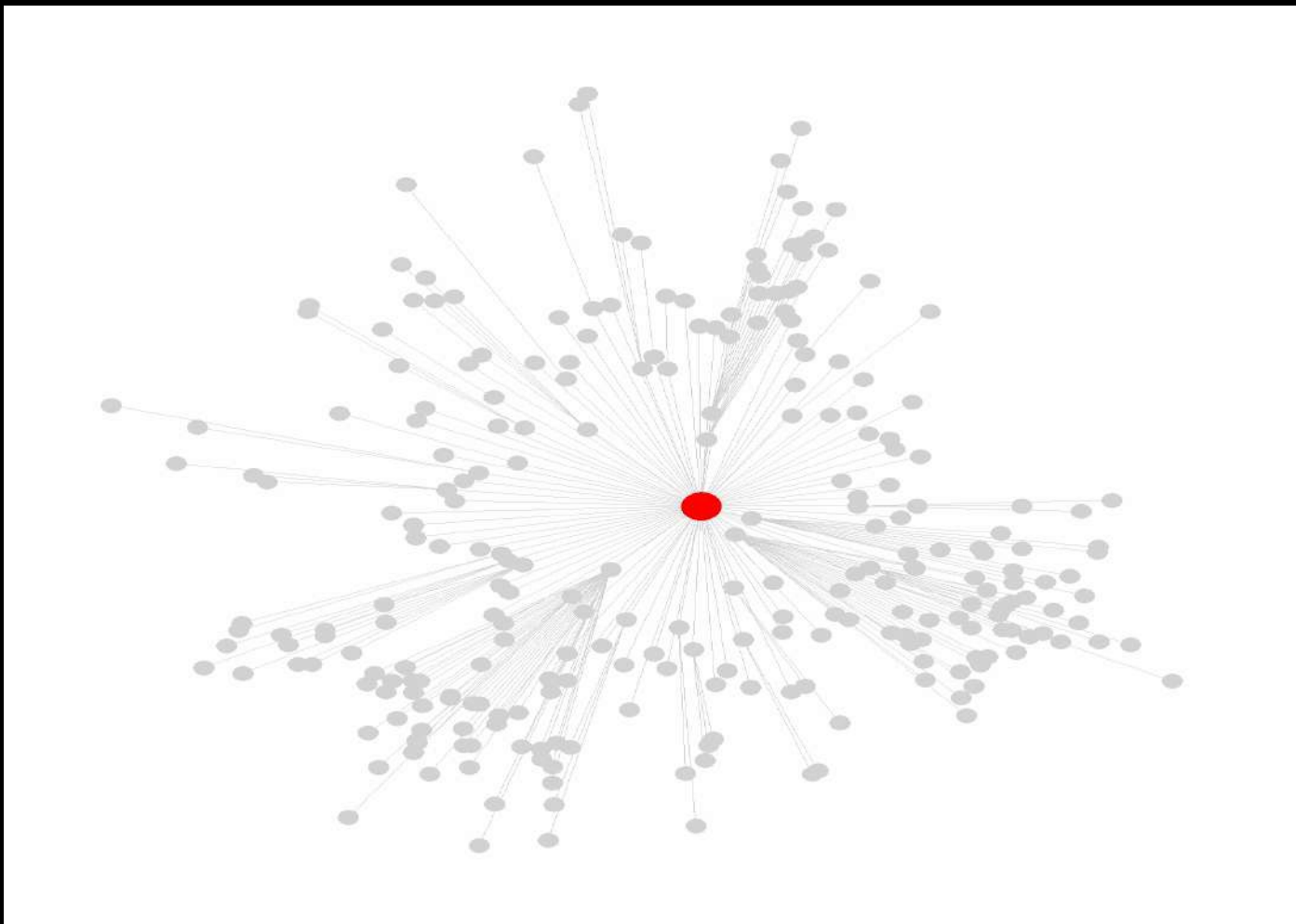




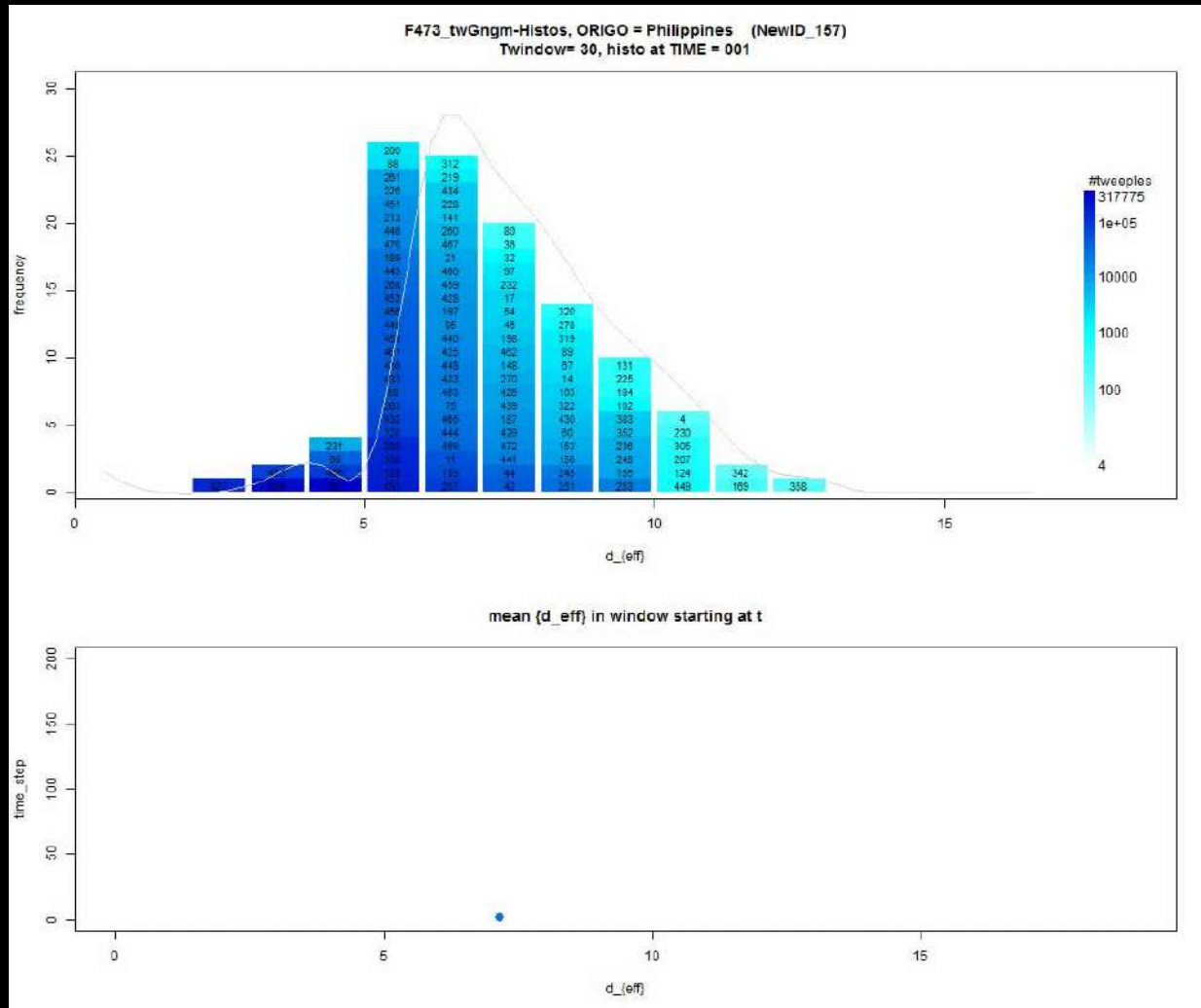
A Gangnam pandémia



Gangnam terjedés a Twitteren



Gangnam terjedés a Twitteren

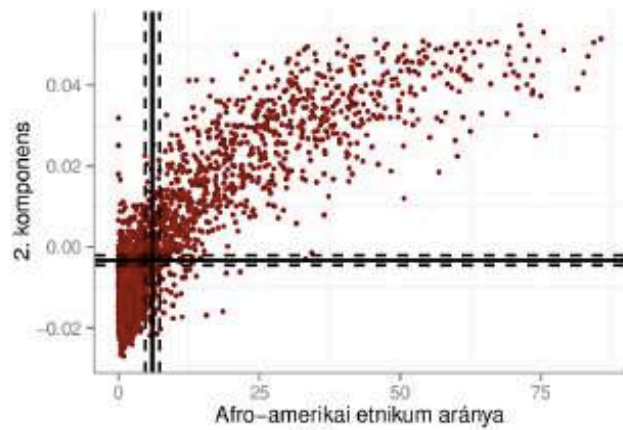


MIRŐL BESZÉLNEK AZ EMBEREK?

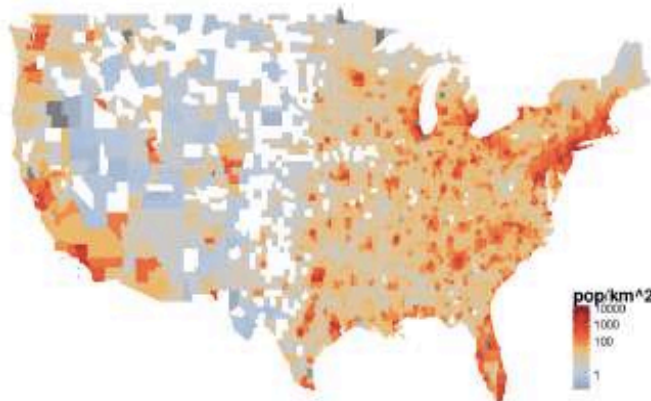
Egy galaxis színekép elemzésre kidolgozott módszer alkalmazása a szövegek elemzésére



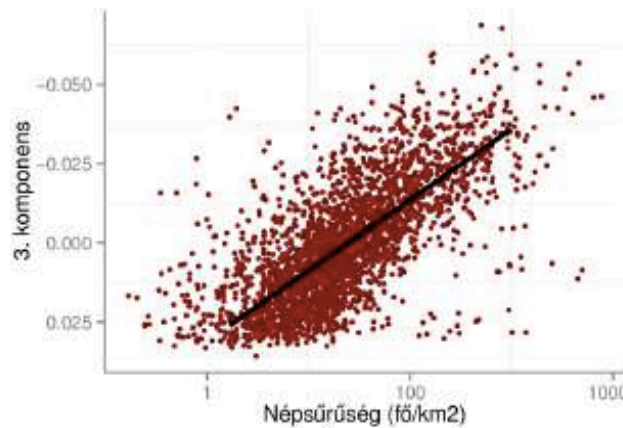
(a)



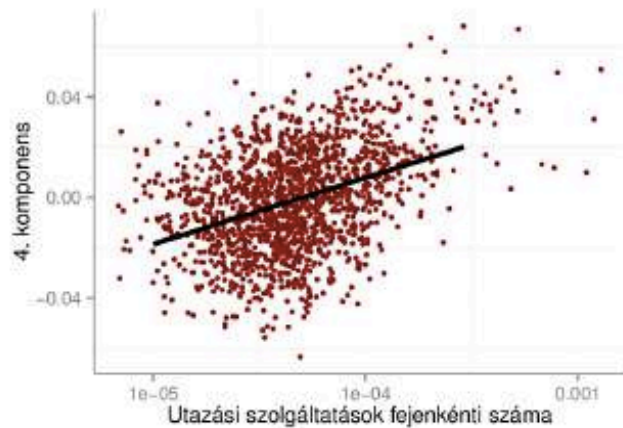
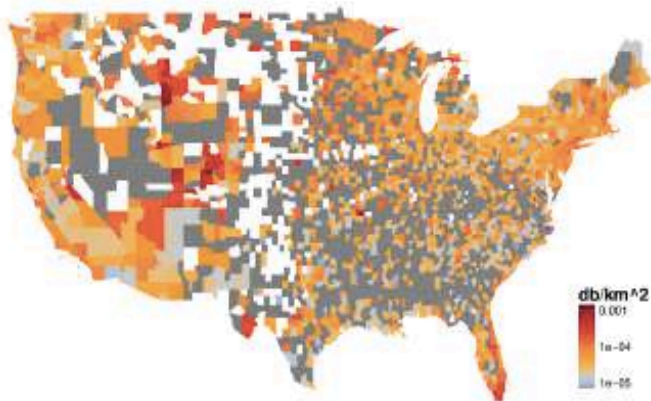
(f)



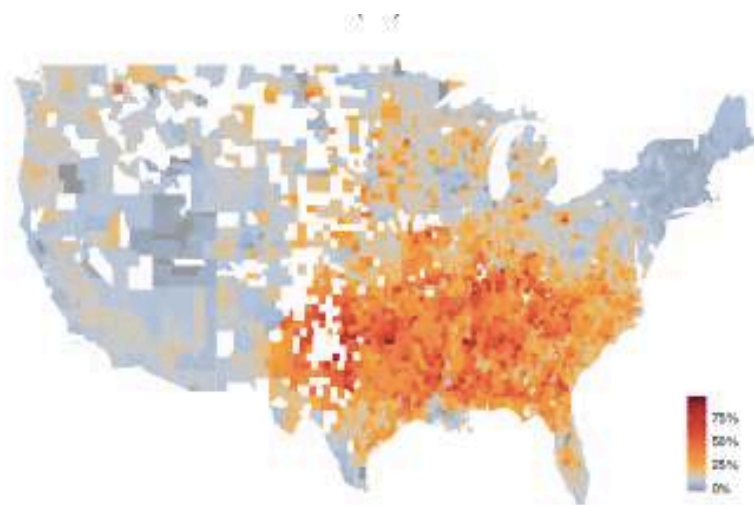
(b)



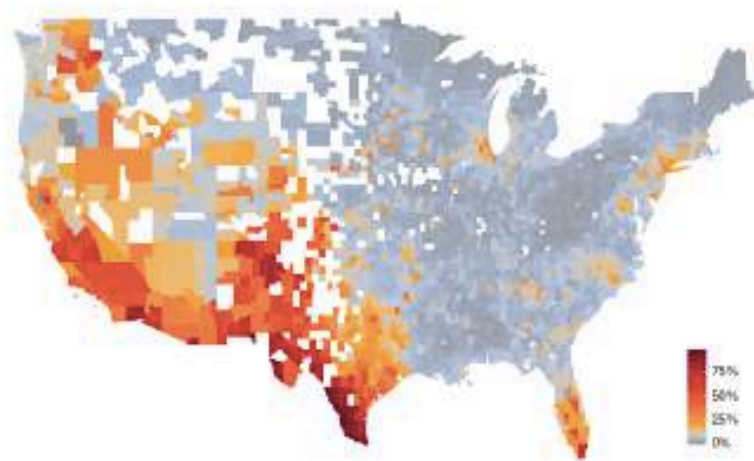
(g)



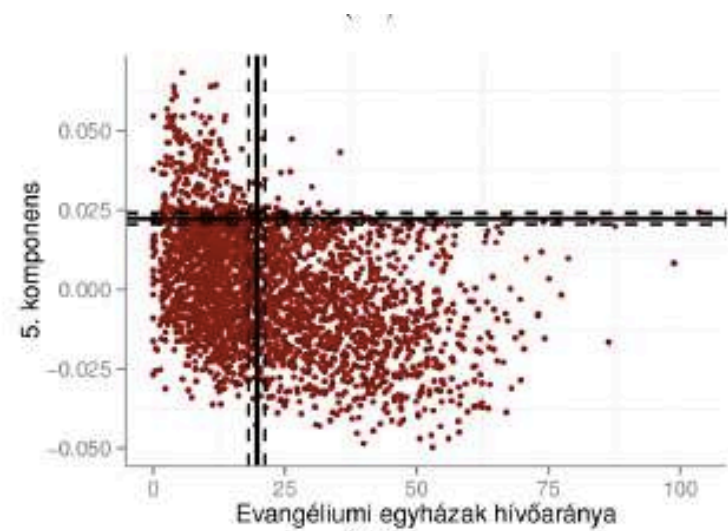
Utazási szolgáltatások fejenkénti száma



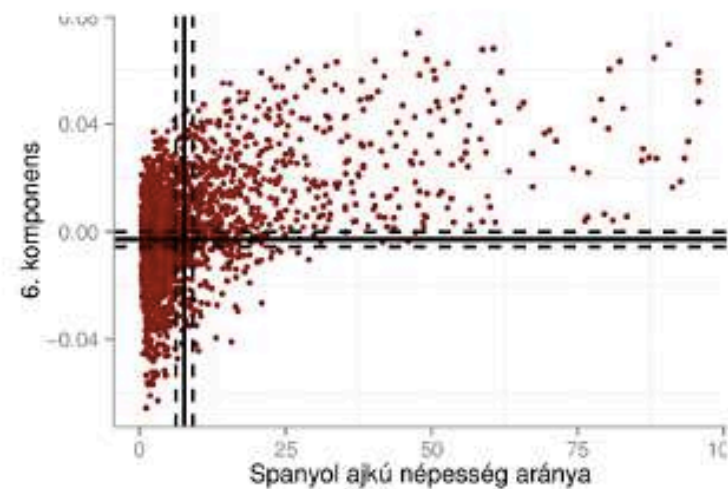
(d)



(e)



(i)

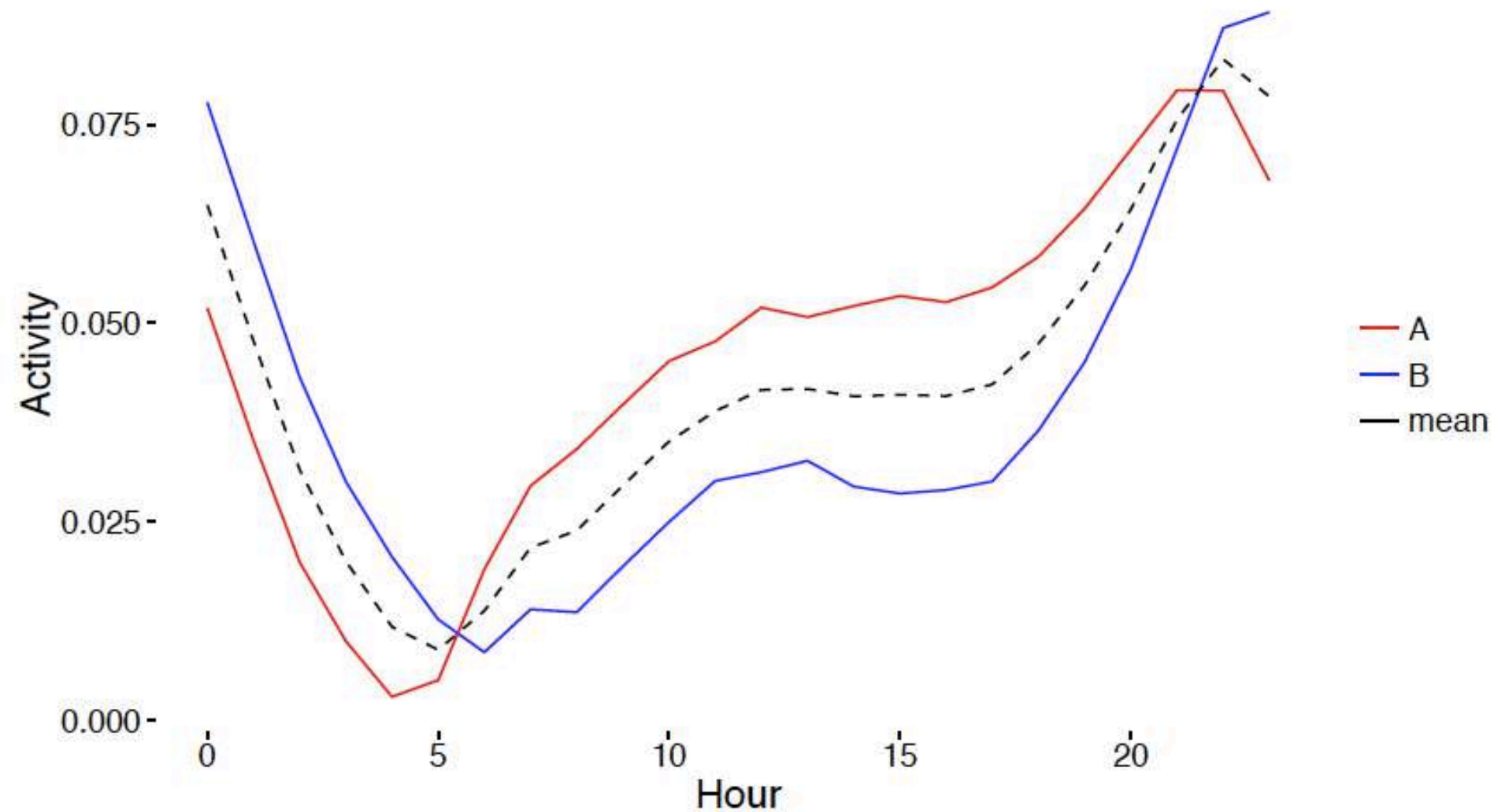


(j)

Statisztikai hivatal a számítógépünkön:

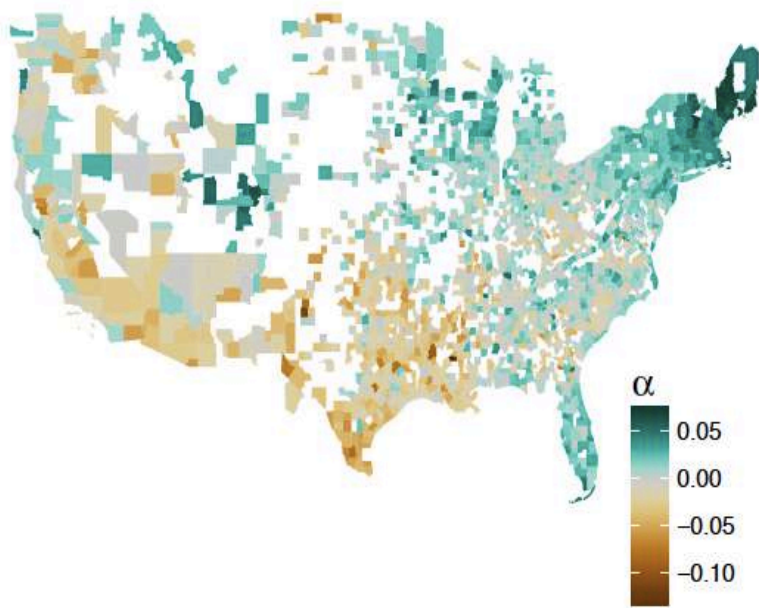
A MUNKANÉLKÜLISÉG

Napi twitter aktivitás felbontása aktív és inaktív tweetelőkre

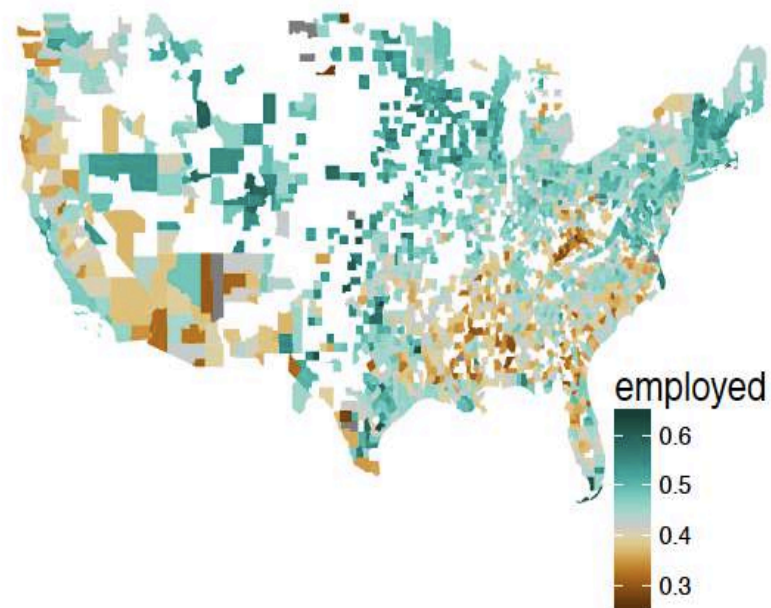


A számított aktív-inaktív arány és a munkanélküliség összehasonlítása

a



b



SZOCIÁLIS HÁLÓZATOK HATÁSA A TÁRSADALOMRA



Joseph Schumpeter

1883-1950

CREATIVITY DESTROYED

in - Spiro
IN-SPIRO.DEVIANTART.COM | 2010



CSM



AE-L
AF-L

AF-ON

1000
ELITE CHROME
DX
PROCESS E-6
ELITE 36-100
Kodak
36
EXP

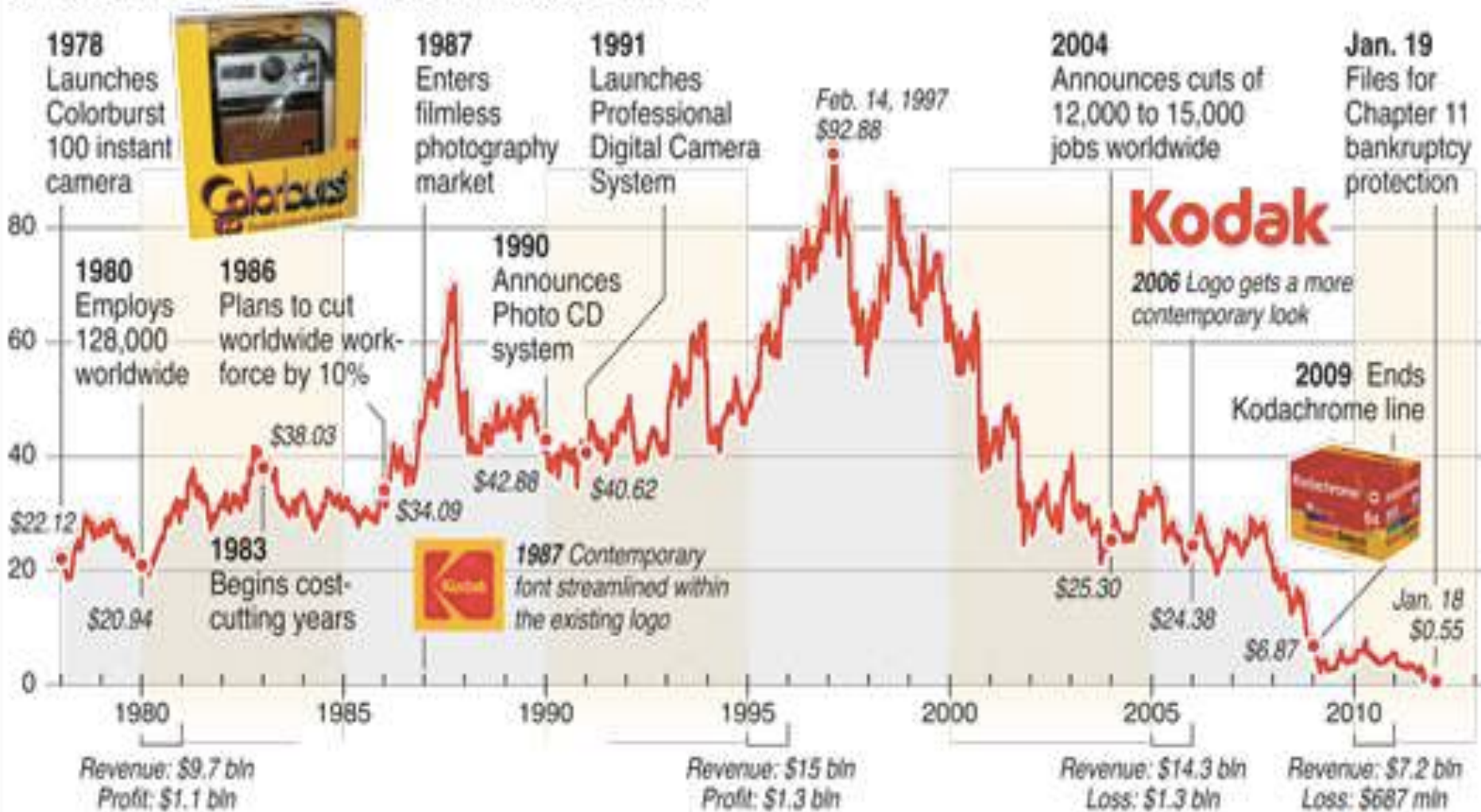




KODAK FILES FOR BANKRUPTCY

Eastman Kodak Co, a 130-year-old photographic film pioneer, has filed for bankruptcy protection. It said it had also obtained a \$950 million, 18-month credit facility from Citigroup to keep it going

SHARE PRICE HISTORY — WEEKLY CLOSE IN US\$



Sources: Eastman Kodak Co., Thomson Reuters, news reports



example: music
business







warner

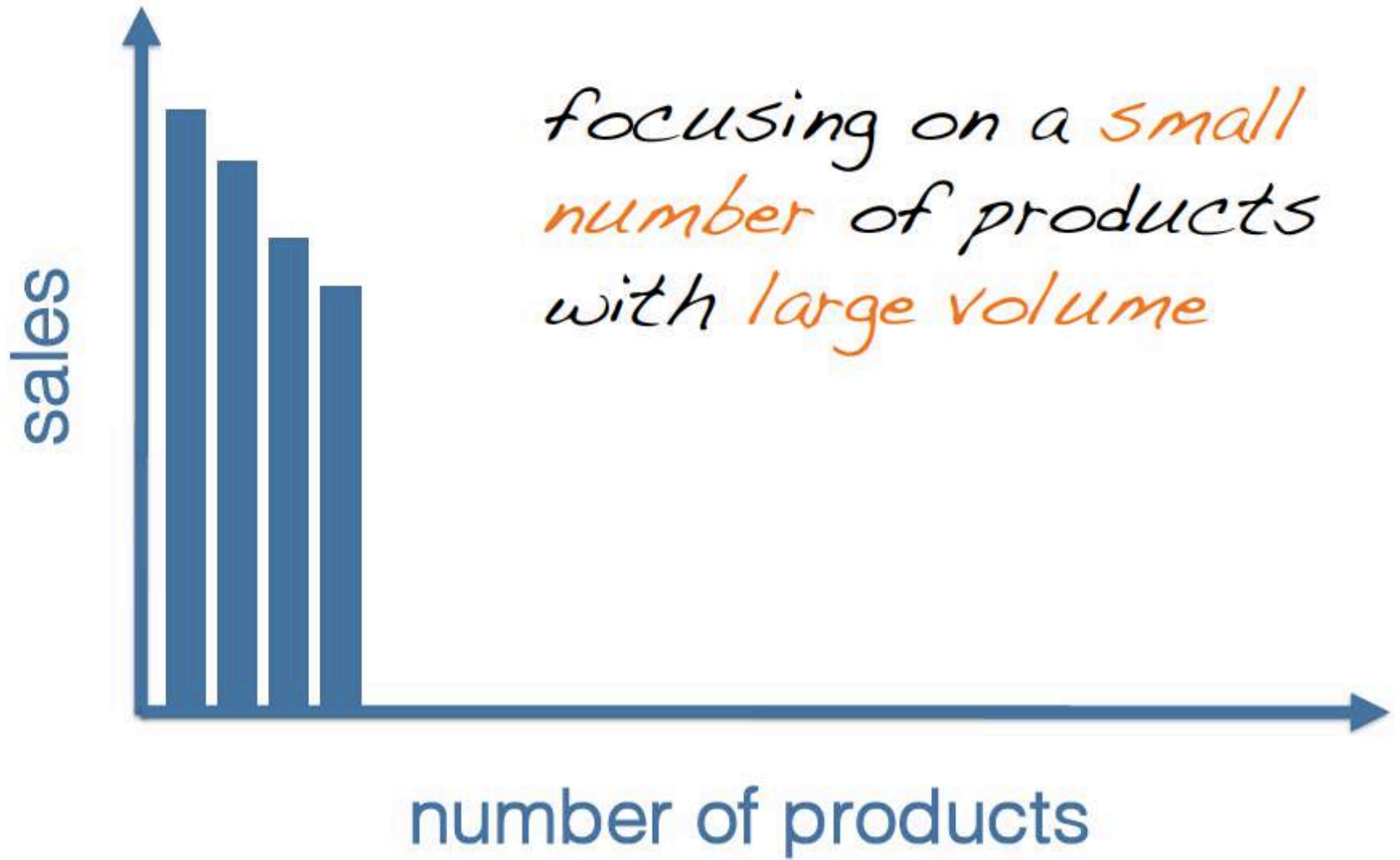
music

group

WARNER

MUSIC

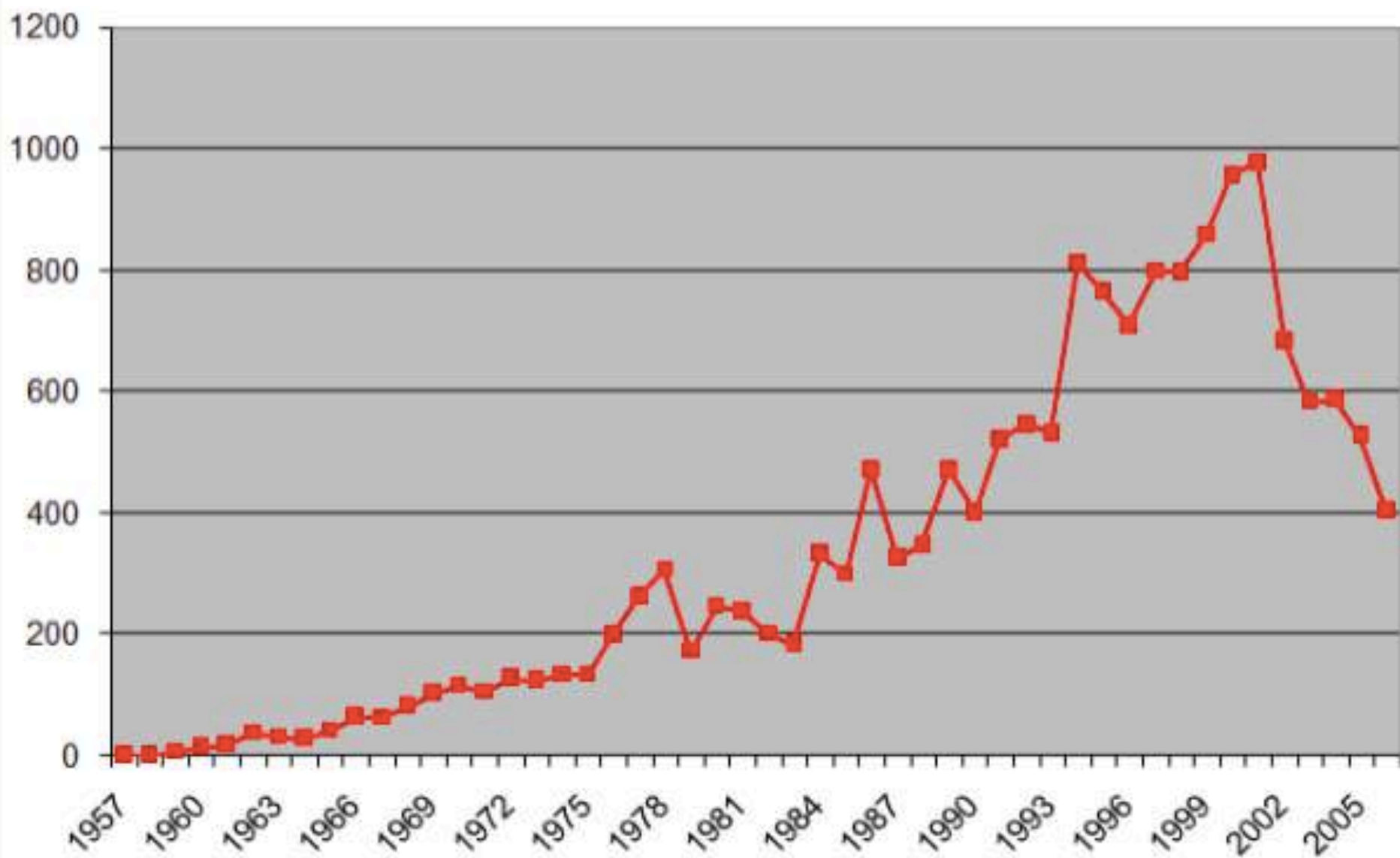
GRoUp







Hit albums (Gold, Platinum, Multi-Platinum)



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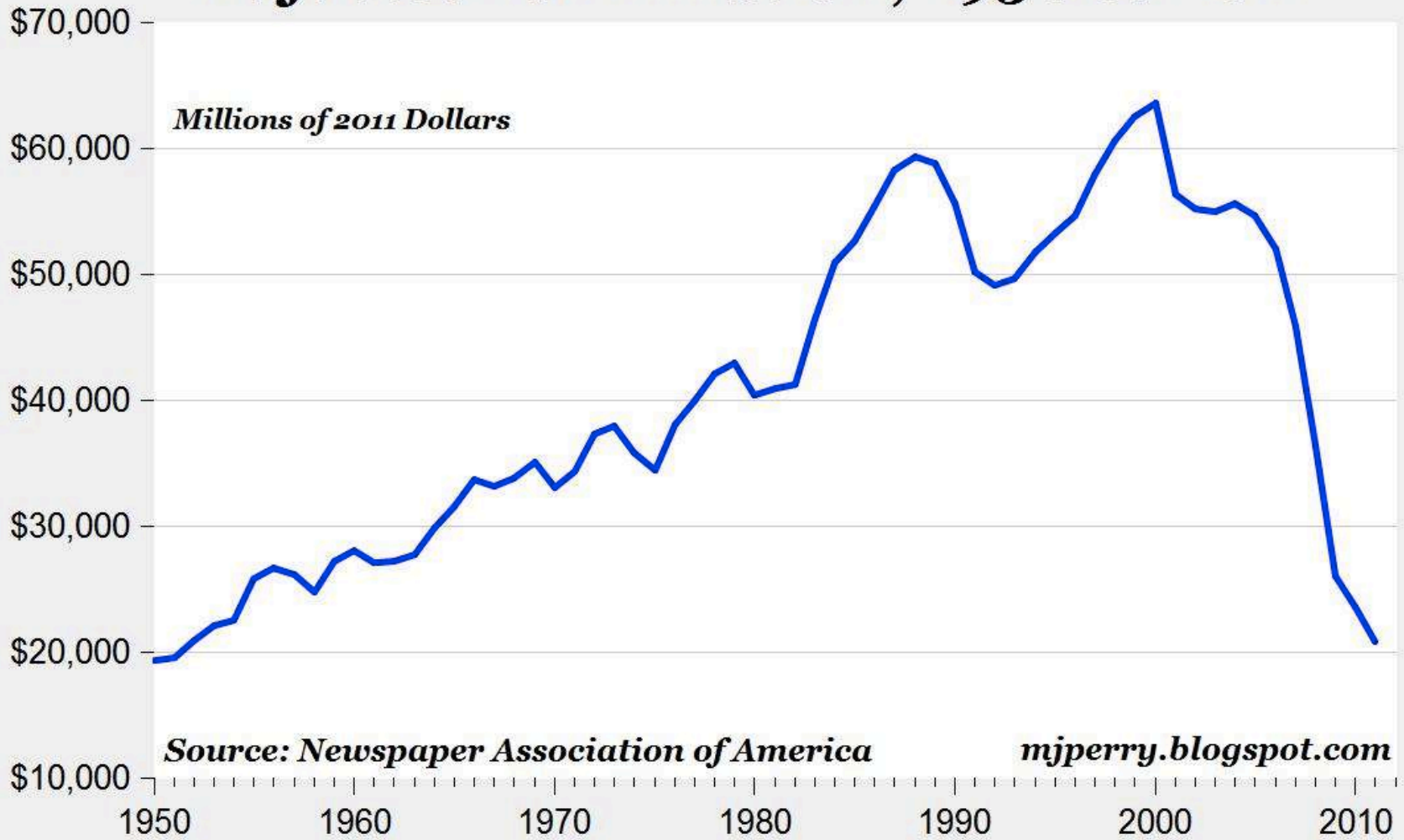




*enabling and
match-making
business for new
& niche talent*

Feleslegessé válnak a véleményformálók is!

Print Newspaper Advertising Revenue Adjusted for Inflation, 1950 to 2011





Aurelius. de.
Vololima. Dixit

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Introduction to Finance

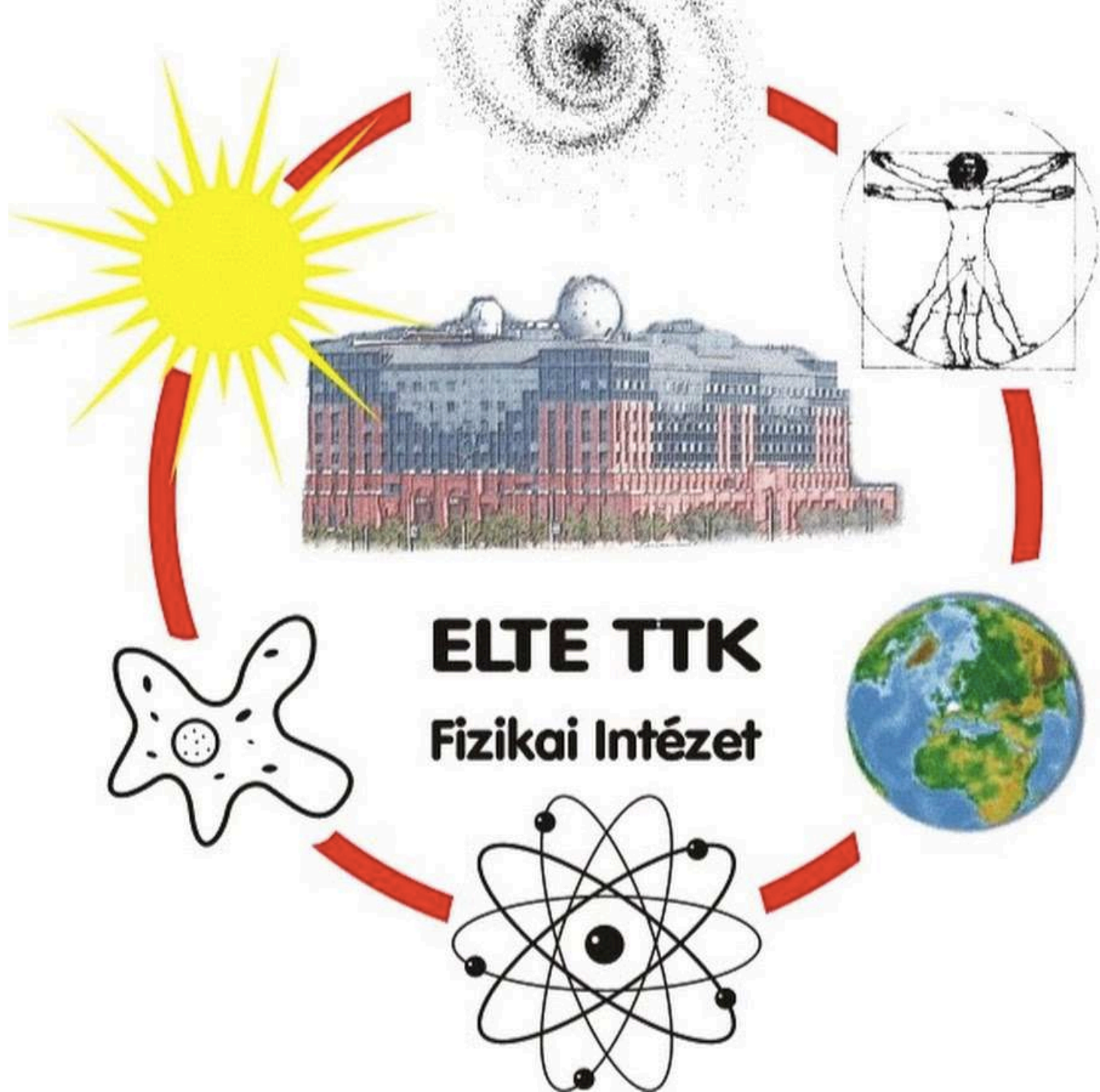


Data Analysis and Statistics



Beginning Game





ELTE TTK
Fizikai Intézet