



I-INTELLIGENCE

# Paradoxes of Open-Sources Intelligence (OSINT)

Vytenis Benetis | 5-6 May 2022 | Vienna, Austria



# From a Blessing to a Curse

- Paradox of Volume and Access
  - Easier access means more information
  - More information means more noise
  - More noise means more pressure on:
    - Organisations
    - Teams
    - Individual analysts

# A Day in Data



## A DAY IN DATA

The exponential growth of data is undisputed, but the numbers behind this explosion – fuelled by internet of things and the use of connected devices – are hard to comprehend, particularly when looked at in the context of one day

**500m**  
tweets are sent every day  
Twitter

**4PB**  
of data created by Facebook, including  
**350m** photos  
**100m** hours of video watch time  
Facebook Research

**294bn**  
billion emails are sent  
Radicati Group

**320bn** emails to be sent each day by 2021  
**306bn** emails to be sent each day by 2020

**4TB**  
of data produced by a connected car  
Intel

**3.9bn**  
people use emails

### DEMYSIFYING DATA UNITS

From the more familiar 'bit' or 'megabyte', larger units of measurement are more frequently being used to explain the masses of data

Unit	Value	Size
b	0 or 1	1/8 of a byte
B	8 bits	1 byte
KB	1,000 bytes	1,000 bytes
MB	1,000 <sup>2</sup> bytes	1,000,000 bytes
GB	1,000 <sup>3</sup> bytes	1,000,000,000 bytes
TB	1,000 <sup>4</sup> bytes	1,000,000,000,000 bytes
PB	1,000 <sup>5</sup> bytes	1,000,000,000,000,000 bytes
EB	1,000 <sup>6</sup> bytes	1,000,000,000,000,000,000 bytes
ZB	1,000 <sup>7</sup> bytes	1,000,000,000,000,000,000,000 bytes
YB	1,000 <sup>8</sup> bytes	1,000,000,000,000,000,000,000,000 bytes

\*A lowercase 'b' is used as an abbreviation for bits, while an uppercase 'B' represents bytes.

**463EB**  
of data will be created every day by 2025  
IDC

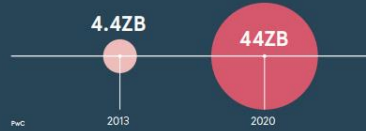
**95m**  
photos and videos are shared on Instagram  
Instagram Business

**65bn**  
messages sent over WhatsApp and two billion minutes of voice and video calls made  
Facebook

**28PB**  
to be generated from wearable devices by 2020  
Statista

Searches made a day **5bn**  
Searches made a day from Google **3.5bn**  
Smart Insights

### ACCUMULATED DIGITAL UNIVERSE OF DATA



# Our Future is Digital

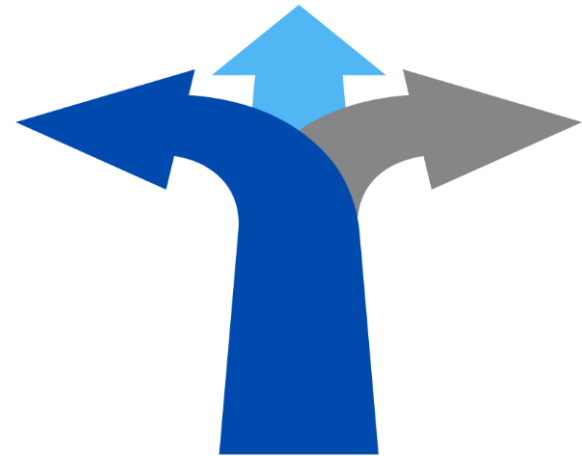


- Where Are We Heading?

- More of what we have:

- More web users
    - More information
    - More technology
    - More connectedness

- The above results in less control and more uncertainty



# On Moral, Ethical and Privacy Issues



- What is Right? What is Wrong?
  - Can we access and store private information?
  - Can we access someone's social media account if it is public?
  - Can we extract data from a website's code?
  - Can we use breached data?
  - Can we work with sock puppets?
  - Can we engage with "closed" communities?



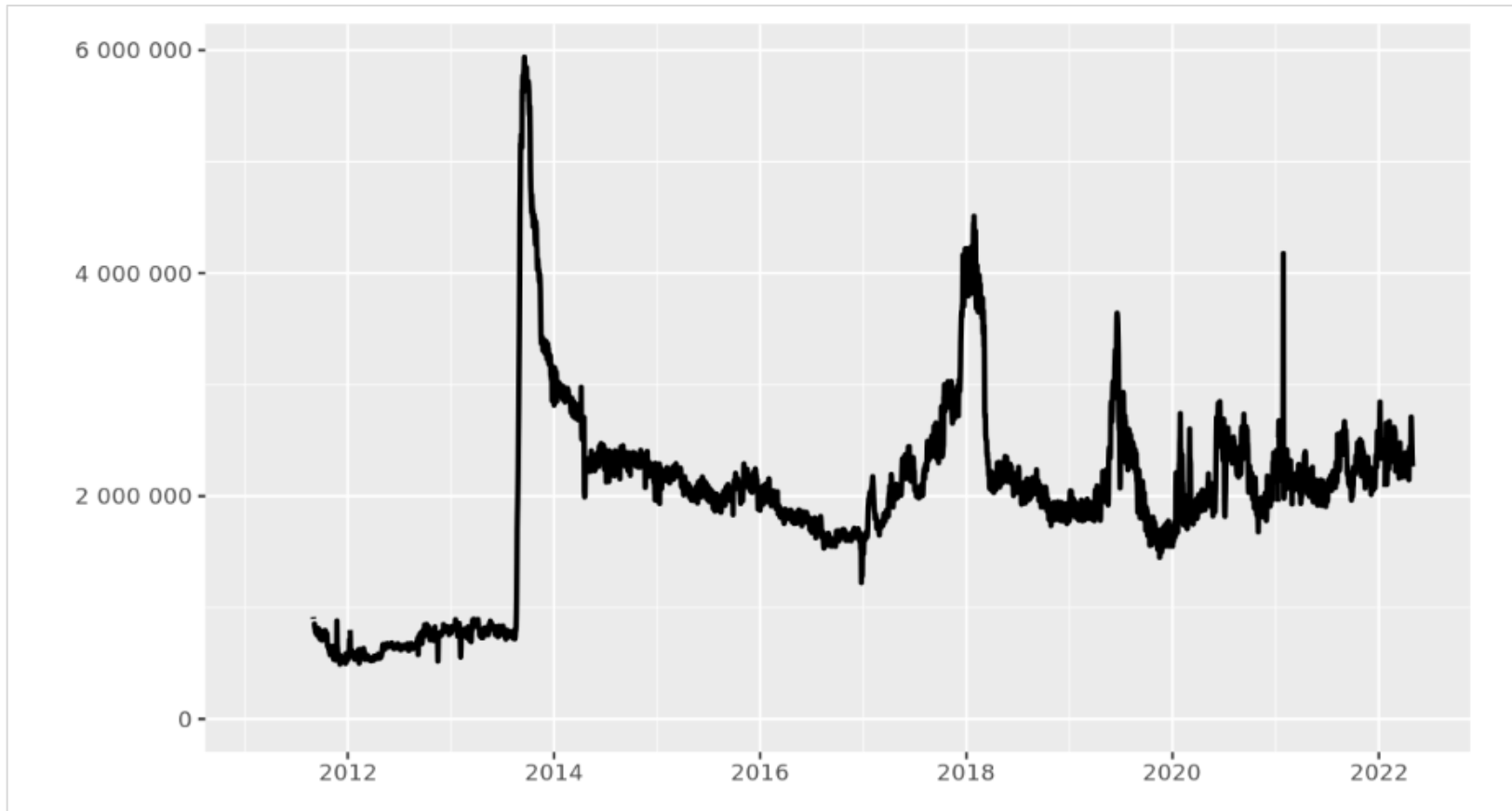
# On Moral, Ethical and Privacy Issues

- **Impact on LEAs**
  - Monitoring changing laws, rules, and regulations
  - Monitoring changing public sentiments
  - Learning how to navigate grey zones
  - Contingency planning
  - Proactive PR
  - Strategic foresight

# Case Study: Dark Web and Messaging Apps



Relay users of Tor network (2012-today)

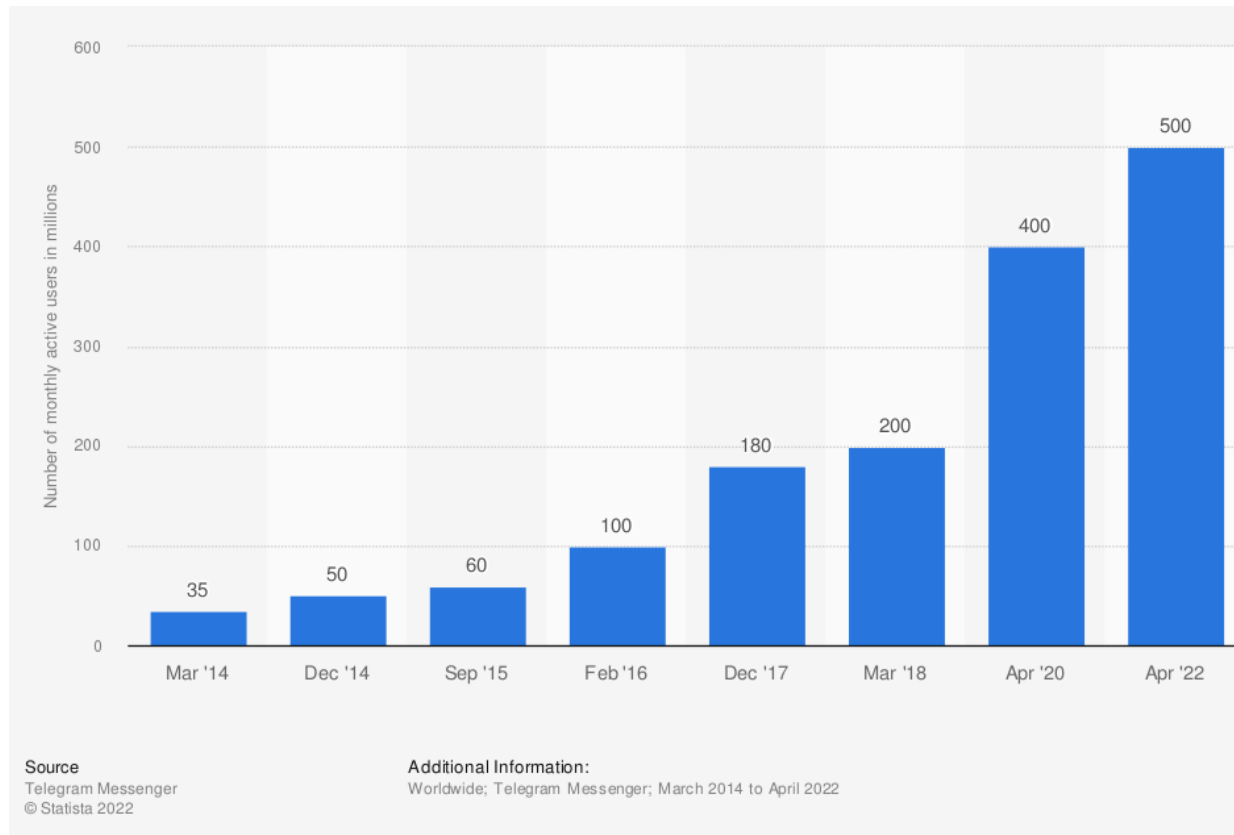


Source: <https://metrics.torproject.org>

# Case Study: Dark Web and Messaging Apps



## Telegram users (in millions) 2014-2022



Source: <https://www.statista.com>



# Case Study: Dark Web and Messaging Apps



- Questions to ask
  - Trends?
  - Drivers?
  - What does it mean to us?
  - Actions to take?
  - Implications of actions

# Case Study: Crowdsourced Intelligence



- Old Approach, New Challenges
  - Successes motivate
  - Unexpected players
  - Quality control?



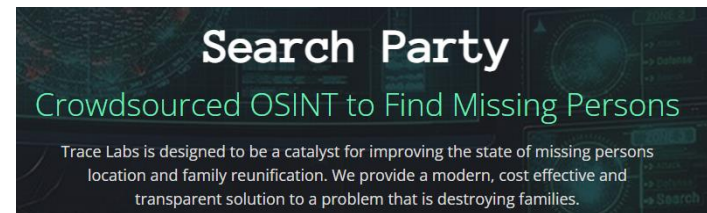
# Case Study: Crowdsourced Intelligence



- Questions to ask
  - Can we benefit from it?
  - What are risks?



**#osintforgood**



# Navigating the Splinternet



- The Many Futures of the Many Web(s)
  - The web is fracturing
  - Navigating a fractured web requires new sources, tools and methods
  - World Wide Web or Wild Wild West?
  - OSINT is just one part of a bigger picture





# In Search of Panacea

- Paradox of Technology
  - NO tool solves all your headaches
  - Developers' promises vs reality
  - DIY or not?
  - Is the Golden Age of OSINT over?
  - Technological maturity varies





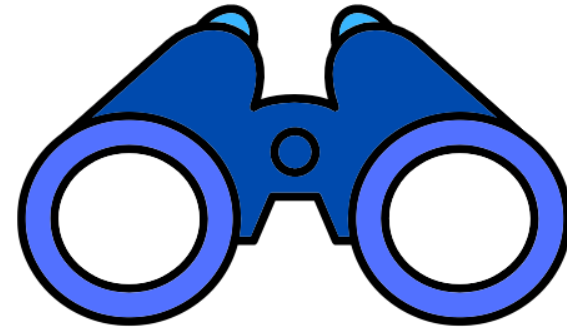
# Buzzwords of the Future or ...

- The Future of Buzzwords
  - Big Data, Machine Learning (ML), Artificial Intelligence ( AI)
  - Internet of Things (IoT)
  - Blockchain and cryptocurrencies
  - The fusion of OSINT and cybersecurity
  - Quantum computing
  - And more ...

# Closing Thoughts



- What Next?
  - Go back to basics
  - Analysis is the weak link
  - The looming war for talent



# Thank You



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