IAB **BIAS** Workshop: **B**enign **I**nternet **A**nd **S**ustainability

~~ Vesna Manojlović, BECHA@xs4all.nl (31 December 2023)

Workshop: https://www.iab.org/activities/workshops/iab-workshop-on-barriers-to-internet-access-of-services-bias-2024/
My initial paper: https://wiki.techinc.nl/File:Vesna_IAB-BIAS-Workshop-Basic_Internet_And_Squirrels.pdf
This paper: https://wiki.techinc.nl/index.php/File:IAB_BIAS_Workshop:_Benign_Internet_And_Sustainability.pdf

My focus is primarily on social context, goals and principles, and only secondarily on technical details.

Goals: providing "Benign Internet" for all, within planetary boundaries, while de-growing the "luxury Internet" of the rich.

This paper is a reply to the follow-up questions:

1. *what exactly is meant by "Benign Internet" in terms of measurable performance metrics*
2. *how exactly would it be different from today Internet*
3. *which are the technologies that are most problematic today?*

1. Benign Internet requires: electricity, labour/work & equipment production/consumption (SDG #7,8,12).

Measurable: Energy use for the Internet access must fit within the overall "energy budget"- on multiple levels (individual, household, organisation, event, city, state… planet). It must be :
a) ***limited*** to sustainable levels (reduced, in case of Global North / affluent individuals globally)
b) ***provided*** (subsidised, re-paid, returned, redistributed…) in the Global South

One example of previously established energy metrics: "2000 Watts society" (see image) [8]

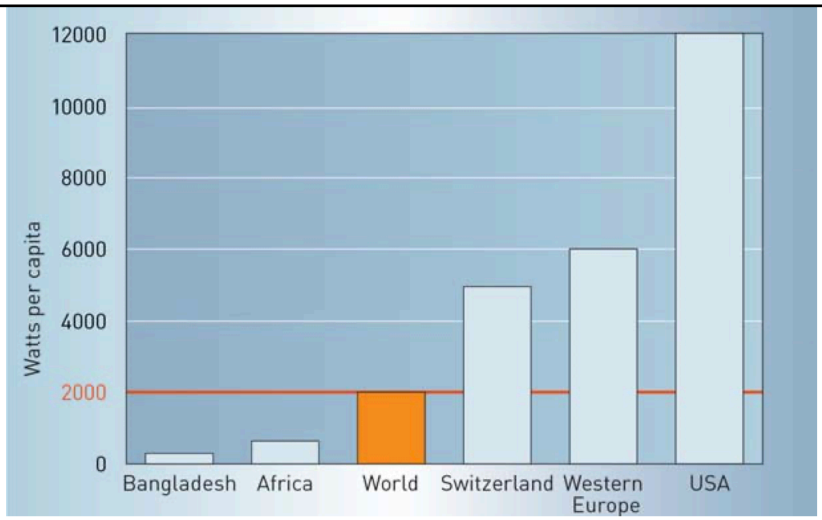


Fig. 1 2000 watts – this is the power needed by a person on a worldwide average. The differences between countries are exorbitant, however. The figure is a few hundred watts in non-industrialized countries, in others it is 20 times higher.

The vision of the 2000-watt society, which came into being as an idea at Swiss Federal Institute of Technology (ETH) in Zurich at the end of the 1990s, is feasible. This was demonstrated by researchers in the ETH domain and other institutes in the project "White Book of the 2000-Watt Society"[1]. It projects the extensively unexploited efficiency and substitution potential onto the entire infrastructure in Switzerland taking precise account of the renewal intervals. This results in a long time horizon of 50 to over 100 years, within which the vision will become practised reality. A prerequisite for

Source: https://web.archive.org/web/20070927205733/http:/energie-cites.org/IMG/pdf/imagine_session1_stulz_en.pdf

Minimum connectivity usage requirements are: ability to make emergency calls; finding the loved ones and letting them know you are alive; looking up the direction to a shelter… plus reading & editing Wikipedia.

Guiding **principles** for designing for "minimal usage" could be: **principle of least resolution** (or principles of least ecological impact / Laws of Ecology)

> = if text messaging is available, do not use image; if image is available do not use video; if sound is available, do not use video; if video is available, do not use VR; etc

- principle of least action: https://en.wikipedia.org/w/index.php?title=Principle_of_least_action&redirect=no
- principle of least effort: https://en.wikipedia.org/wiki/Principle_of_least_effort

> *e.g. "Never stand up when you can sit down, and never sit down when you can lie down."*
> *~~ Winston Churchill*

Networking equipment must be able to function with little electricity & intermittent connectivity, within a broken supply chain for parts, no way to pay for licenses, relying on "old tech"…

> **principles**: backwards compatibility, right to repair, open hardware standards, open protocols.

2. **Ideally**: the Benign Internet would be: public utility, non-commercial / not-for-profit; decentralised, peer-to-peer, federated; respecting privacy and autonomy of participants; egalitarian; low-tech, slow-tech, off-the-grid tech; sustainable / green / restorative: based on renewable energy and recycled / reused materials, not wasteful of water nor land/minerals; aiming for global equality and long-term availability; within planetary boundaries / limits …

3. In order to satisfy the Benign Internet needs (for all), the affluent societies must STOP developing "problematic" technologies (ecocidal / unsustainable / oppressive / exploitative / wasteful / luxurious) : STOPPING technologies such as: fast internet, cloud, IoT, artificial intelligence, extended reality, blockchain, quantum communication, 5G, 6G, HD video, online gaming, space communication, militarisation…

This, of course, is an unpopular opinion, because *"dominant economic and political interests are invested in the status quo and work hard against change."* [9]

My final recommendation to IETF / IRTF leadership and participants is to **REFUSE** working on standardisation of "luxury" technologies, while refocusing efforts on the protocols & standards that support SDG. [3] This refusal must be strategic, political and financial.

Criteria for refusal are based on ethics, human rights, social justice, and sustainability / climate justice.

There is no Internet access on a dead planet.

Long version: Proposal:

Instead of the excessive connectivity for the rich, let's have basic, modest, green, benign connectivity for all!

Problem Statement: Luxury Internet

UNEP's [1] choice of "seven digital technologies that directly influence 103 SDG targets: digital access, ~~fast internet, cloud, IoT, artificial intelligence, extended reality and blockchain~~" illustrates **digital divide**.

"Digital access" is both necessary and sufficient for basic connectivity.

The other six technologies, and similar "advanced digital technologies" (~~quantum communication, 5G, 6G, HD video, online gaming, etc~~), is what I call the "**Luxury Internet**".

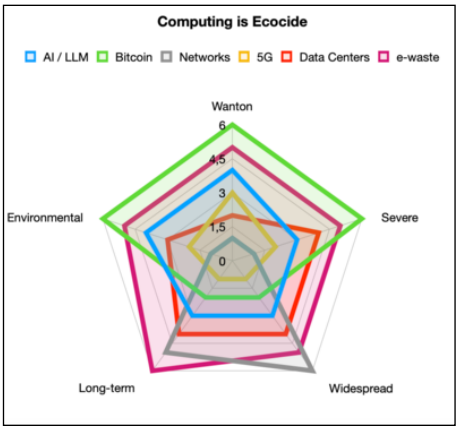
Luxury Internet for the rich is what creates barriers to (basic) access for the poor!

Here are some of the causes & effects of Luxury Internet:
- **capitalism** (competition; centralisation of influence & wealth in the hands of a few corporations; growth);
- **digital colonialism** (urge to conquer territories for extractivism, exploitation of labour for short-term profit, usage of amassed data for surveillance and disinformation);
- (fallacy of) **technological progress** in service of capitalism & colonialism (innovation, gadgeteering, marketing; manufacturing desires for bigger, better, faster, newer…) [2]

Luxury Internet has to be discouraged, de-growth-ed and limited, for multiple reasons:
- to free up resources for increasing digital access of the unconnected
- to make reparations to those exploited and oppressed by the maintenance of the Luxury Internet till now
- to reduce the environmental impact of digital technologies

Other possible names for Luxury Internet: Internet of Affluence; Gargantuan Internet; Gilded Internet.

"Luxury Internet" is damaging for the environment, to the levels of **ecocide** [7]: burning fossil fuels; slurping up water, rare metals, land, energy; externalising pollution (damaging habitats, dumping e-waste).



Basic **I**nternet **A**nd **S**ociety

Antidotes to Luxury Internet are **DeGrowth**, **Decolonising**, **Empathy**.

"Basic Internet" is an answer to "what are the minimum requirements for access?" workshop-question. If we only look at the "technology", then the minimum is SDG #7,8,12: electricity, labour/work & production/ consumption. However, we can not ignore survival needs: SDG #2,3,6,13,14,15 (food, health, water, shelter, cooling/heating, & biodiversity) which all have to be met for humans to be able to use "internet". [3]

Only societies able to satisfy subsistence needs can provide minimum requirements for the "Basic Internet".

> *"imagine… a society with a modest standard of living, conservative of natural resources, with a low constant fertility rate and a political life based upon consent, a society that has made a successful adaptation to its environment, and has learned to live without destroying itself or the people next door." ~~ Ursula K. LeGuin [4]*

Here are some ideas on how to re-imagine such a society and such an Internet:
- Data Feminism & Feminist Internet https://feministinternet.org
- Academic Journal on Degrowth https://www.degrowthjournal.org/issues/2023-volume-1/
- Recentering Decoloniality, Roland Ngam https://www.youtube.com/live/PeVt_cQwkTw?si=bkO2U21ekzJ3druV&t=709

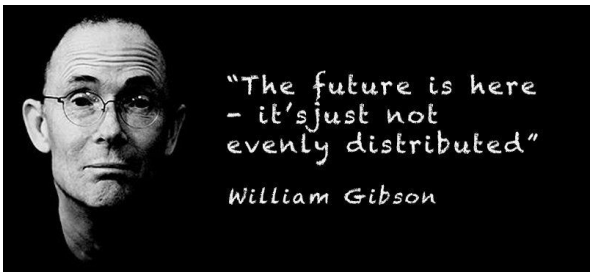
Polycrisis

I am encouraging the planning for societies (& Internet) in disaster scenarios: a war-thorn country, a refugee camp, an aftermath of a hurricane, a flooding, raging forrest fire… ***Meaningful connections*** in that case are: ability to make emergency calls; finding the loved ones and letting them know you are alive; looking up the direction to a shelter…

Networking equipment must be able to function with little electricity & intermittent connectivity, within a broken supply chain for parts, no way to pay for licenses, relying on "old tech"…

Best illustration from the past is "ZaMir" [5]: a network of BBSes in ex-Yugoslavia, connecting anti-war activists, and using low-tech to pass on the messages about lost family members to the neighbours.

Examples of collapse-preparation tech:
- What could post-collapse computing be?
- Towards the Development of an Anti-Colonial Critique of Climate and Disaster Risk Models
- Swarmpunk & Decentralized Infrastructures
- https://wiki.collapsible.systems/



"**the collapse is already here**, it is only not evenly distributed."

"Indigenous communities have been living in these crises for hundreds of years. Yet, despite facing the most challenging forces of colonialism, they are still here, still persisting with resilient cultures… traditional values present the best hope for a sustainable future and continuing to survive the triple crisis of U.S. imperialism, nuclear testing, and the climate crisis." [6]

Benign **I**nternet **A**nd **S**ustainability

When we consider the contradicting needs: for growing the connections between people, and for limiting the damage done to the environment, we have to add "sustainability" to the "Basic Internet".

That's why "green" Internet should not only be "basic", but also **benign:** benevolent, beneficial, utopian.

Explicitly environmentally-friendly digital solutions:
- off-the-grid Internet & Low Tech Internet
- "Towards a Fossil Free Internet", Chris Adams, RIPE84, 2021
- "Twinning Green and Digital" , SEEDIG, 2021

Sustainability in Tech Collections:
- APC's technologies for environmental justice
- Bits & Bäume: "Digitisation within the planetary boundaries" (etc)
- Climate Action Tech https://climateaction.tech/
- Permacomputing https://permacomputing.net/
- Computing Within Limits https://computingwithinlimits.org/

- **https://wiki.techinc.nl/Sustainability**

To end as I started, with an UNEP quote: *"The world needs to lift the needle out of the groove of insufficient action and begin setting new records on cutting emissions, green and just transitions and climate finance – starting now. ~~ Inger Andersen, 20. November 2023 [10]*

Acknowledgements: I am grateful to the authors of quoted papers, videos & articles; Anita Niskala for the drawing & and these communities for inspiration: https://wiki.techinc.nl/Sustainability#Communities

References:

[1]: UNEP = United Nations Environment Programme : Digitalization for Sustainability https://www.unep.org/topics/digital-transformations/digitalization-sustainability

[2] Daft Punk: https://en.wikipedia.org/wiki/Harder,_Better,_Faster,_Stronger

[3] SDG = Sustainable Development Goals https://sdgs.un.org/goals

[4] Ursula K. Le Guin: https://web.archive.org/web/20180628075056/http://theanarchistlibrary.org/library/ursula-k-le-guin-a-non-euclidean-view-of-california-as-a-cold-place-to-be

[5] ZaMir https://wiki.techinc.nl/TacticalMediaRoom#ZaMir

[6] Navigating Multiple Crises https://www.resilience.org/stories/2023-11-21/holding-the-fire-episode-8-alson-kelena/

[7] "Computing as Ecocide", by Rob Comber and Elina Eriksson: https://limits.pubpub.org/pub/a8h46wqy/release/1 & https://www.theguardian.com/environment/2023/nov/17/eu-criminalises-environmental-damage-comparable-to-ecocide & https://wiki.techinc.nl/User:Becha/AI_is_ecocide

[8] 2000 Watt Society: https://en.wikipedia.org/wiki/2000-watt_society https://newrepublic.com/article/168750/switzerland-cop27-2000-watt-society

[9] Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve? https://www.annualreviews.org/doi/full/10.1146/annurev-environ-012220-011104

[10] Call for new records in climate action https://www.unep.org/news-and-stories/speech/call-new-records-climate-action & https://www.unep.org/resources/emissions-gap-report-2023

My work about Internet & Society:
- 2012: "Participatory, Peer-to-peer, Utopian networks": https://becha.home.xs4all.nl/hackers-philosophers-utopian-network-dec-2012-becha.pdf
- 2021: RIPE Community Resilience: Every Society Has the Internet they Deserve https://labs.ripe.net/author/becha/ripe-community-resilience-every-society-has-the-internet-they-deserve/
- 2022: A Plea For Climate Justice: Solidarity, Limitations, Reparations: https://labs.ripe.net/author/becha/a-plea-for-climate-justice-report-from-the-iab-workshop-on-e-impact/
- 2023: Environmental Impact of Internet: Urgency, De-Growth, Rebellion https://labs.ripe.net/author/becha/environmental-impact-of-internet-urgency-de-growth-rebellion/

My work about Internet & Nature:
- 2023: AI is Ecocide https://wiki.techinc.nl/User:Becha/AI_is_ecocide
- 2021: Nature is Healing https://labs.ripe.net/author/becha/ripe-community-resilience-nature-is-healing/
- 2016: Speaker For Squirrels, Post-Singularity Symposium, GogBot https://becha.home.xs4all.nl/Speaker_for_Squirrels-GogBot-2016.pdf
- 2014: Nature will have the last word, RIPE69 https://wiki.techinc.nl/index.php/File:Nature-speaking-on-future_of_the_internet-RIPE69.pdf

DeGrowth links:
- 2024 CFP: "a society beyond growth must learn how to articulate new imaginaries and redefine the relationship between society and the institutions of science, technology and innovation." https://esee-degrowth2024.uvigo.gal/en/the-conference/program/call-for-abstracts/
- Academic Journal on Degrowth (May 2023) : https://www.degrowthjournal.org/issues/2023-volume-1/
- Recentering Decoloniality, Roland Ngam at odrast.hr in Zagreb: https://www.youtube.com/live/PeVt_cQwkTw?si=bkO2U21ekzJ3druV&t=709
- Kohei Saito: Marx meets Degrowth: On the Origin of Degrowth Communism https://zagreb.degrowth.net/en/9_int_dg_conf/public/events/397
- "involvement of citizens and participatory democracy can overcome political divisions and create strong shared visions " https://communitiesforfuture.org/launch-of-the-time-for-collective-action-manifesto-ecolises-main-policy-event-2023/
- MENA Women's & Girls' Demands for COP28 and Beyond https://womengenderclimate.org/wp-content/uploads/2023/11/WGC-MENADemands-ExecSumm.pdf

Embedded Links, as Text:
- DeGrowth https://wiki.techinc.nl/Sustainability#DeGrowth
- Decolonising Internet https://wiki.techinc.nl/Hackers_tribes#Decolonising_Internet
- Empathy: https://ripe85.ripe.net/wp-content/uploads/Ethics-Environment-Equity-Empathy_Vesna.pdf
- APC's technologies for environmental justice https://www.apc.org/en/project/technology-environmental-justice-and-sustainability
- Data Feminism https://data-feminism.mitpress.mit.edu
- Feminist Internet https://feministinternet.org
- Bits & Bäume: "Digitisation within the planetary boundaries" https://bits-und-baeume.org/konferenz-2022/ forderungen/#heading
- What could post-collapse computing be? https://msteenhagen.medium.com/what-could-post-collapse-computing-be-5711a9aa6111
- Towards the Development of an Anti-Colonial Critique of Climate and Disaster Risk Models https://limits.pubpub.org/pub/cgxo9mrd/release/2
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- off-the-grid Internet: https://open.substack.com/pub/anarchosolarpunk/p/offgridinternet
- Low Tech Internet: https://solar.lowtechmagazine.com/about/the-solar-website/
- "Towards a Fossil Free Internet", Chris Adams (May 2022) https://ripe84.ripe.net/archives/video/751/
- "Twinning Green and Digital" (September 2021) https://seedig.net/seedig7-sustainable-future/
- +
- https://wiki.techinc.nl/MeshNet#Disaster_Recovery_Communications
- https://wiki.techinc.nl/Sustainability#Alternative_Computings