Staff Development:
Environmental Impact of Digital Communication

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90 minutes 15 participants

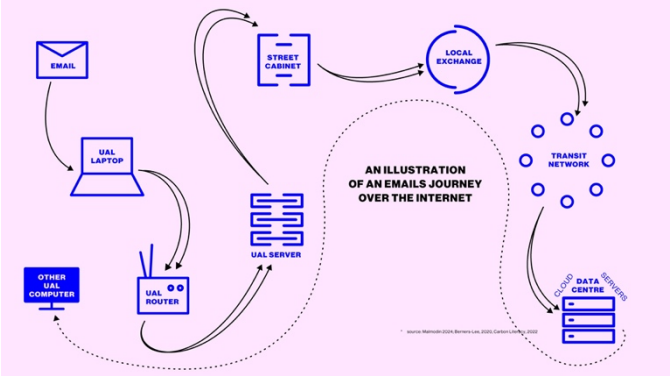
This session is to increase UAL awareness of the (minor, but empirical) environmental impact of digital communication and services which we all as staff use regularly. Particularly emails and cloud storage, to encourage staff to adopt impact-reducing digital practices.
Focus on understanding CO2 emissions of digital activities, exploring somewhat feasible solutions, and enabling staff to take actionable steps towards reducing their digital carbon footprint.
Questioning our academic positionalities in this — ***what would be the impact on student experience?***

1. INTRO AND CONTEXT (10 mins)

- Welcome and hello
- Participants introduce and roughly state/guess how many emails they receive on an average week.
- Then I provide an overview of CO2e emissions and digital carbon footprints, explaining why we are focusing on emails / digital storage — UAL uses a lot of digital services (Microsoft OneDrive, Outlook, Padlet, etc)
- *How much energy do emails really use?*

2. UNDERSTANDING THE CARBON IMPACT DIGITAL (30 mins)

- Short pres explaining CO2e impact of emails and digital services, referencing Berners-Lee (2020), Malmodin (2024), and Carbon Literacy (2022). Also data centres (Mytton & Ashtine, 2022).
- The materiality of digital data, and how we've become detached form its vast omnipresence (Dourish, 2022)
- The disproportionate effect on global majority countries through the manufacturing and extractivist mining of materials needed for digital devices, systems, and tools, which follows a colonialist rhetoric (Davis and Todd, 2017; Nayar, 2021; Swift, 2022)
- Describe how the old *energy intensity model* estimates the carbon footprint of an email/digital networks are somewhat over estimates (17g CO2e for a long email); and how a more recent power model (Malmodin, 2024) reduces this estimate by ~79.3% (~3.5g CO2e for long email).
- While emails do contribute to CO2 emissions, they are clearly not the most significant source of environmental impact.
- Share my UAL data gathered from PgCert UAL, the 335 emails in 10 days, and the ~55,678 email chains I was part of.
- It's not valid to extrapolate this data, which is why we are doing this session — *is anyone interested in data gathering with me? (Lets speak after the session)*
- Discussion: staff to reflect on their own email usage.
- *What do all these emails and mean for us?*
- *What does this mean for students?*
- Email impact is obv very small compared to other digital activities, such as video streaming or sending large files.



3. ENERGY USAGE OF DIGITAL NETWORKS (15 mins)

- Energy consumption associated with email transfers and digital services is <u>minimal</u> compared to the constant energy draw from the underlying network infrastructure.
- *Show network diagram on the RIGHT →*
  Discuss network equipment (routers, data centres, transmission networks) is always on, meaning energy is consumed regardless of whether emails are being sent or not. Discuss Malmodin (2024) to highlight that infrastructure itself is the biggest source of digital carbon emissions, **not the individual actions of sending an email.**
- Group scenario activity: ask to estimate the CO2e of leaving a device on overnight vs sending emails.
- *Reflections on digital habits and how we might reduce unnecessary energy consumption*

4. MITIGATING DIGITAL FOOTPRINT (20 mins)

- Shift to possible solutions.
- Ask participants to brainstorm practical actions they can take to reduce their digital carbon footprint.
- Discussion around the challenges of implementing these actions:
- *how might it change student experience?*
- *how might it change our teaching / academic delivery*
- Explore any barriers to change and how they can be overcome
- Encourage realisation of <u>collective responsibility</u> for reducing digital impact.

5. REFLECTION AND ACTIONS (10 mins)

- Ask participant staff to write down a specific action they will take to reduce digital CO2e.
- Must we always “Reply All”, or leave devices on constantly?
- Then share one with group maybe?

6. CONCLUSION (5 mins)

- Quick recap of key points:
- Summarise environmental impact of digital communication, the role of network infrastructure, and the practical steps staff can take to reduce their digital carbon footprint.
- Feedback form??

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7. NEXT STEPS / FOLLOW UP SESSION (opt-in)

- If other staff are particularly interested, then we could start a collective data gathering exercise where we gather data in a citizen science-kind of way.
- Sharing and collecting data over set periods of time
- Next session / follow up session?