
SBA
Research

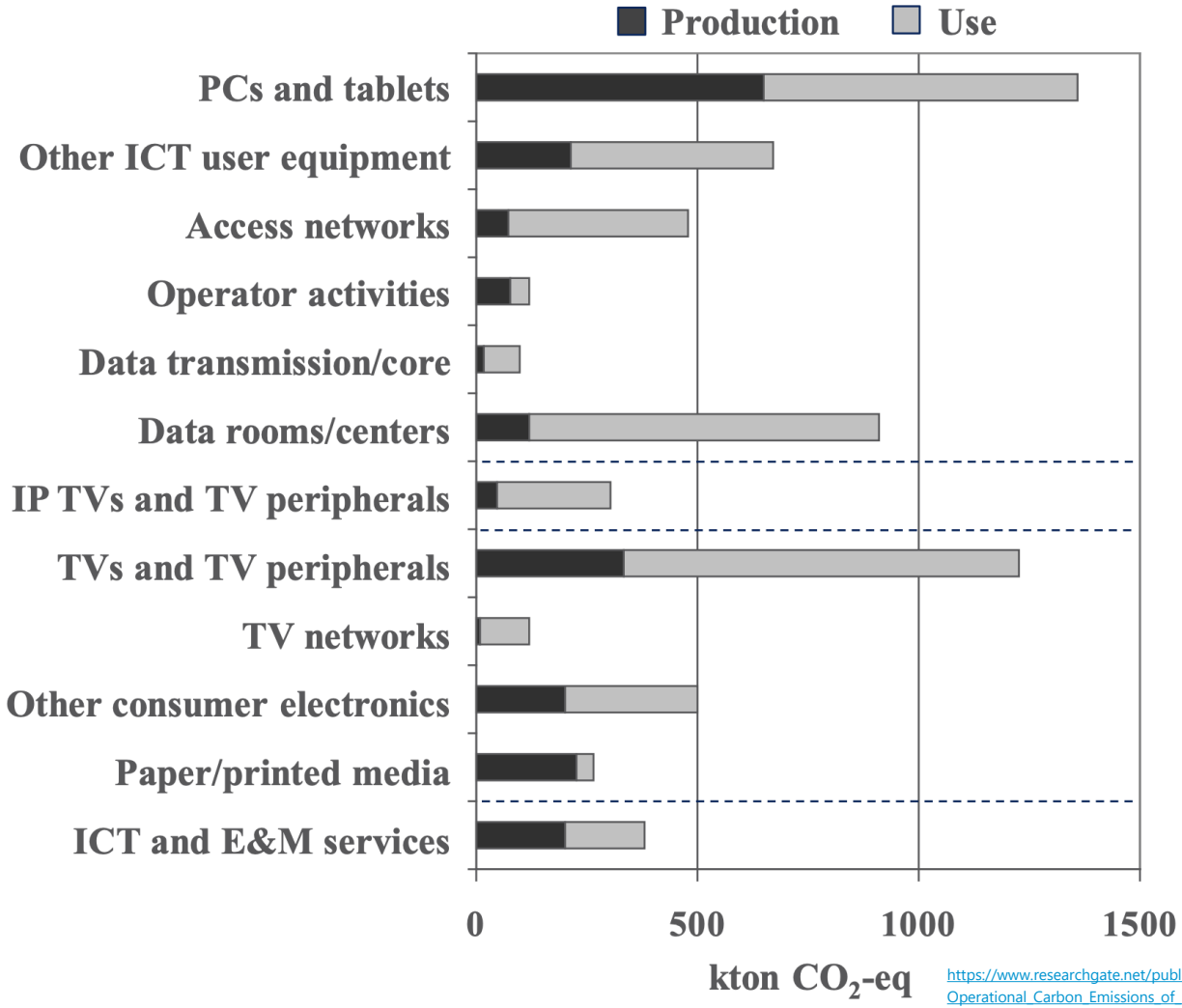
Wer ESG sagt, muss auch SCI sagen

Ein Impulsvortrag

sec4dev Dialogues – 2026-06-18

Bundesministerium Innovation, Mobilität und Infrastruktur
Bundesministerium Wirtschaft, Energie und Tourismus
FFG Forschung wirkt.
wirtschaftsagentur wien
Für die Stadt Wien
European Commission
FWF Österreichischer Wissenschaftsfonds
netidee FÖRDERUNGEN

https://www.mobiflip.de/nello-one-sprachbefehl-alexa/



https://www.researchgate.net/publication/358833774_Electricity_Consumption_and_Operational_Carbon_Emissions_of_European_Telecom_Network_Operators

Micron to exit consumer memory business amid global supply shortage

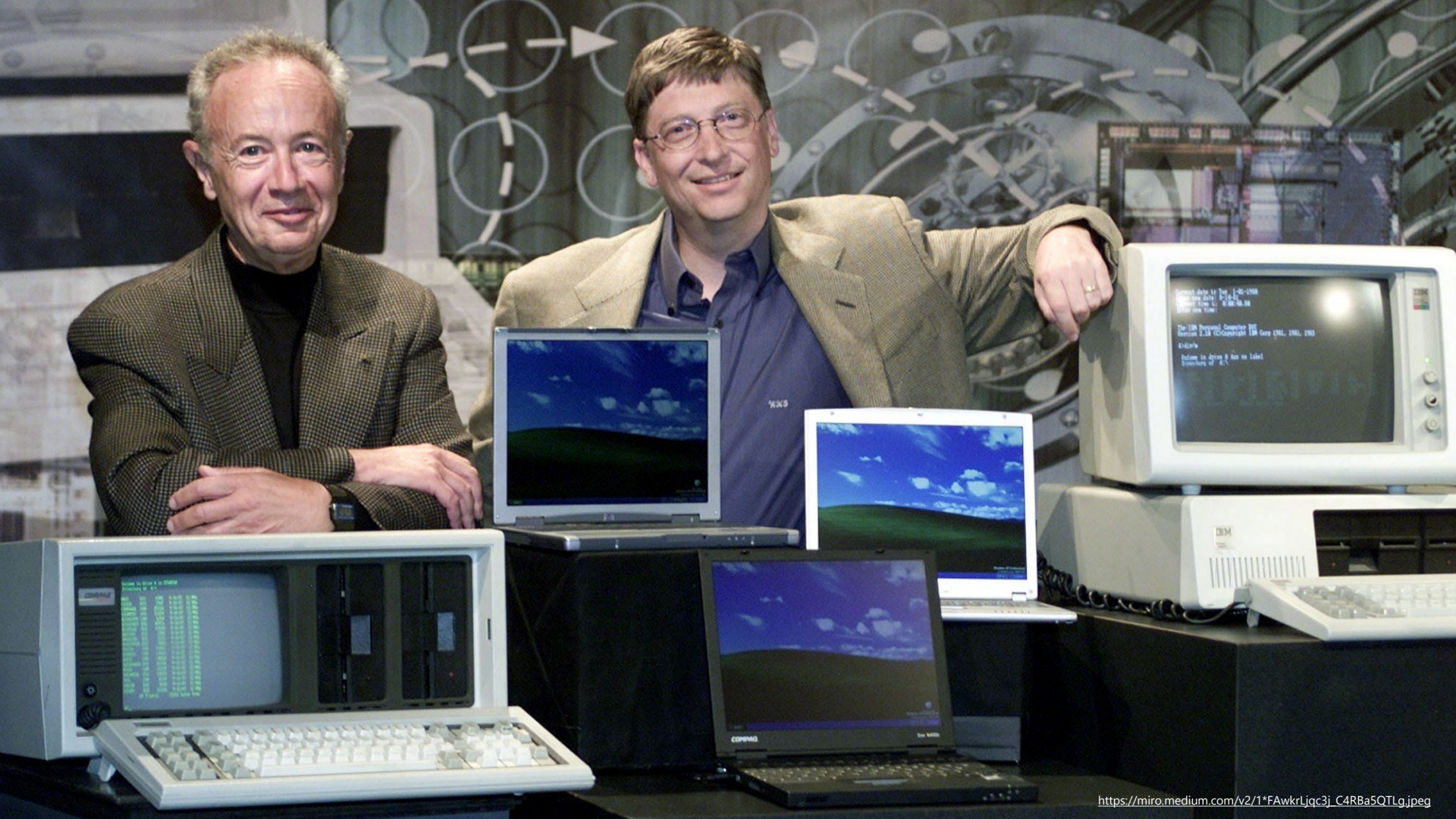
By **Reuters**

December 3, 2025 6:37 PM GMT+1 · Updated December 3, 2025

Micron logo at the company's booth at the 8th China International Import Expo (CIIE) in Shanghai, China, November 5, 2025.
REUTERS/Maxim Shemetov Purchase Licensing Rights

Dec 3 (Reuters) - Memory chipmaker Micron Technology (MU.O) said on Wednesday it will exit its consumer business, as it doubles down on advanced memory chips used in artificial intelligence data centers amid a global supply shortage of the essential semiconductors.

https://www.reuters.com/business/micron-exit-crucial-consumer-memory-business-2025-12-03/



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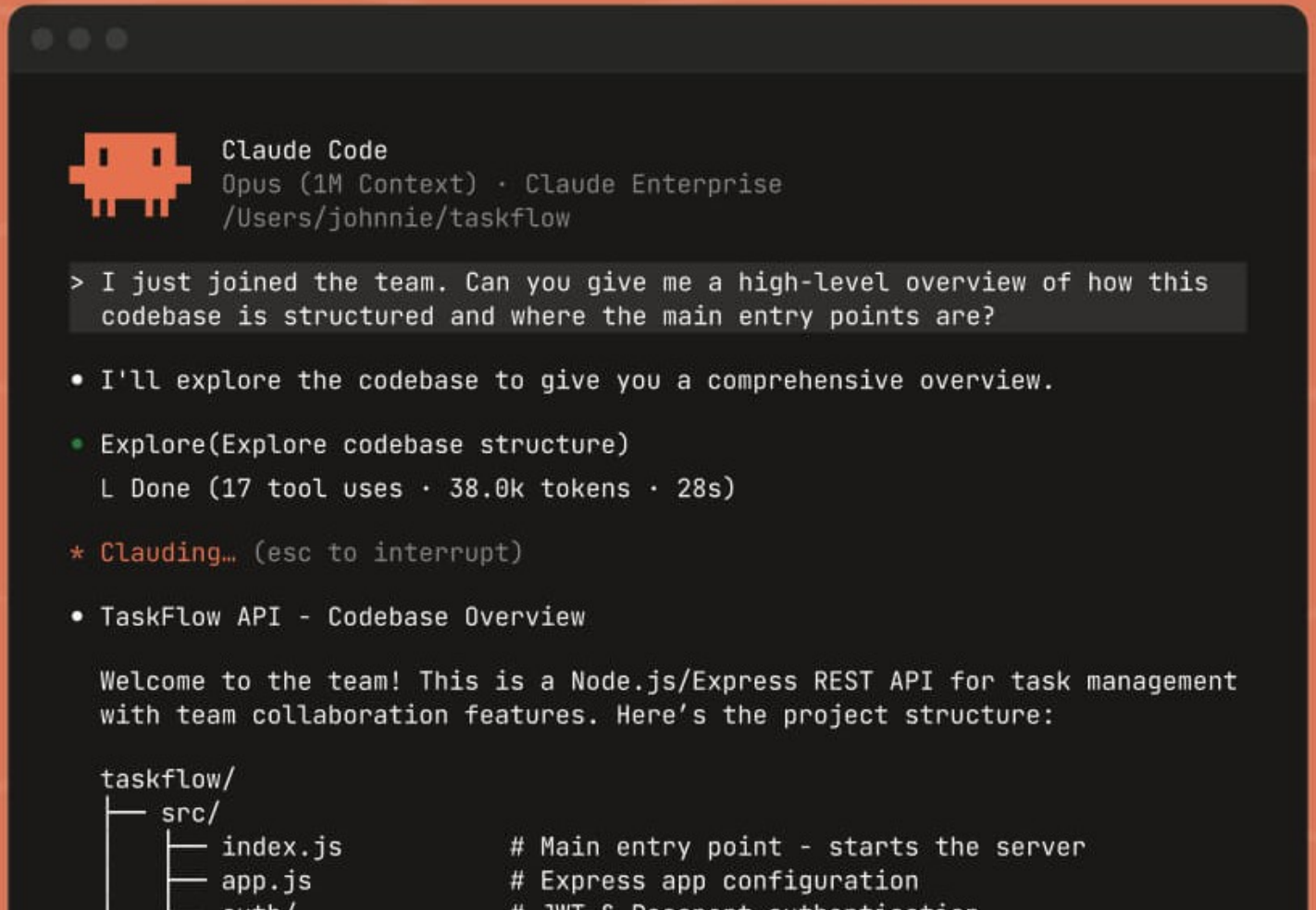

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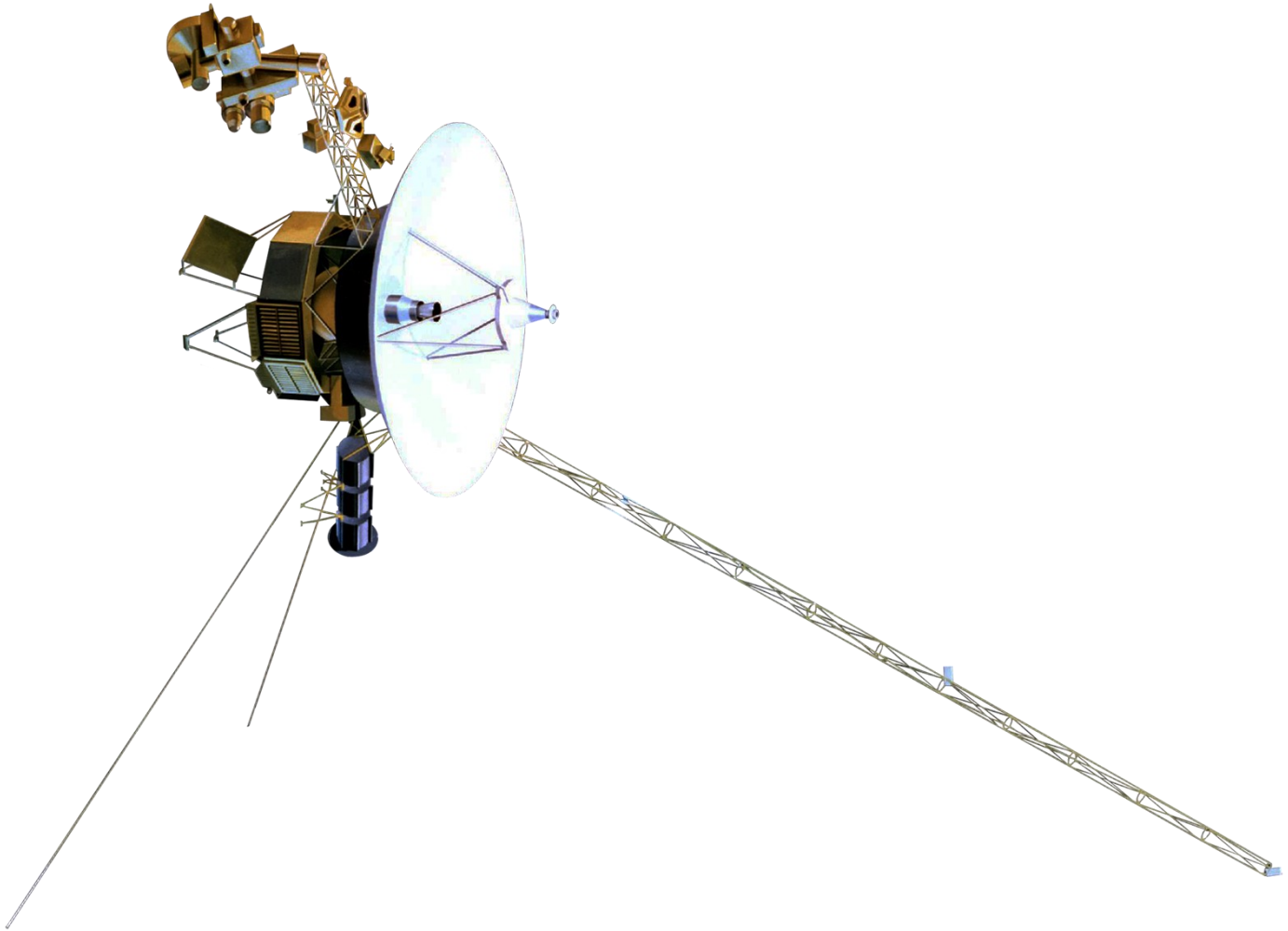


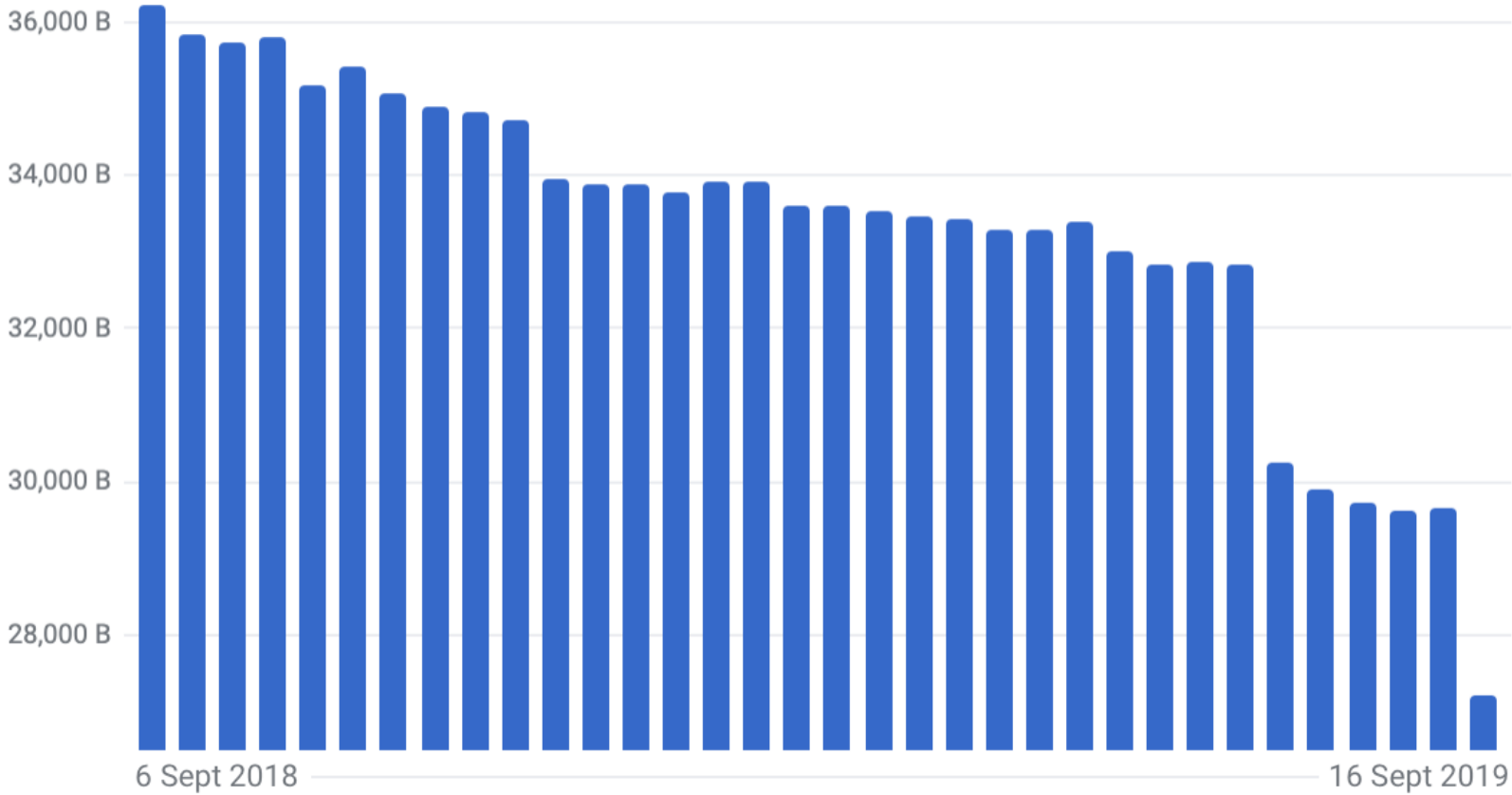
Office workers waste more time on slow tech than they spend on holiday

Working with technology could be detrimental to productivity in the workplace, costing businesses more then they are worth.

By Julie Painter | February 3, 2020 | Posted in HR, People

https://elitebusinessmagazine.co.uk/people/item/office-workers-waste-more-time-on-slow-tech-than-they-spend-on-holiday

Startup manifest size



https://phabricator.wikimedia.org/phame/live/7/post/175/wikipedia_s_javascript_initialisation_on_a_budget/

Software Carbon Index (SCI)

$$SCI = \frac{O + M}{R}$$

- O = Operational emissions (energy × carbon intensity)
- M = Embodied emissions (hardware manufacturing, time-share, resource-share)
- R = Functional unit (e.g., per API call, per user, per transaction)

Green
Software
Foundation

https://www.w3.org/policies/logos/

2. User Experience Design

2.1 Identify, assess, disclose, review, and mitigate sustainability impacts
2.2 Understand user requirements and constraints, and resolve barriers to access
2.3 Integrate sustainability into every stage of the ideation process
2.4 Minimize non-essential content, interactivity, and user journeys
2.5 Ensure navigation and wayfinding are well structured
2.6 Design to assist, not distract
2.7 Avoid manipulative or deceptive design practices
2.8 Make deliverables understandable and reusable
2.9 Use a design system to ensure interface consistency
2.10 Provide clear, inclusive, and purposeful content
2.11 Optimize media to reduce resource use
2.12 Ensure animation is proportionate and easy to control
2.13 Use optimized and appropriate web typography
2.14 Offer suitable alternatives for every format used
2.15 Provide accessible, usable, and minimal web forms
2.16 Avoid unwanted notifications
2.17 Reduce the impact of downloadable and physical documents
2.18 Involve users early in the project
2.19 Audit and test for bugs or issues that require resolution
2.20 Verify that real users can successfully use your work at and after release
2.21 Regularly test and maintain compatibility

3. Web Development

3.1 Set goals based on performance and energy impact
3.2 Remove unnecessary or redundant information
3.3 Modularize bandwidth-heavy components
3.4 Remove unnecessary code
3.5 Avoid redundancy and duplication in code
3.6 Give third parties the same assessment priority as first parties
3.7 Ensure code follows good semantic practices
3.8 Defer the loading of non-critical resources
3.9 Provide information that helps users understand the usefulness of a page
3.10 Validate form errors and account for tooling requirements
3.11 Structure metadata for machine readability
3.12 Use sustainability-beneficial user-preference media queries
3.13 Ensure layouts work across different devices and requirements
3.14 Use standards-based JavaScript and APIs
3.15 Ensure that your code is secure
3.16 Use dependencies appropriately and ensure they are maintained
3.17 Include expected and beneficial files
3.18 Use the most efficient solution for your service
3.19 Use the latest stable language version
3.20 Reduce the number and complexity of database queries

4.Hosting, Infrastructure, and Systems

4.1 Use sustainable hosting
4.2 Optimize caching and support offline access
4.3 Reduce data transfer with compression
4.4 Set up necessary error pages and redirection links
4.5 Avoid maintaining unnecessary virtualized environments or containers
4.6 Use automation wisely
4.7 Define the frequency of data refreshes
4.8 Back up critical data at routine intervals
4.9 Consider the impact and requirements of data processing
4.10 Use Content Delivery Networks appropriately
4.11 Ensure infrastructure fits project requirements
4.12 Store data according to user needs

5.Business Strategy and Product Management

5.1 Have an ethical and sustainable product strategy
5.2 Assign a sustainability advocate
5.3 Inform, raise awareness, and train teams on sustainability
5.4 Communicate the environmental impact of user choices
5.5 Calculate environmental impact
5.6 Define clear organizational sustainability goals and metrics
5.7 Validate efforts using established third-party certifications
5.8 Support mandatory disclosures and reporting
5.9 Create one or more impact business models
5.10 Follow a product management and maintenance strategy
5.11 Implement continuous improvement procedures
5.12 Document future updates and evolutions
5.13 Determine whether a digital product or service is necessary
5.14 Provide a supplier standards-of-practice document
5.15 Share economic benefits
5.16 Share decision-making power with affected parties
5.17 Use Justice, Equity, Diversity, and Inclusion practices
5.18 Promote responsible data practices
5.19 Implement appropriate data management procedures
5.20 Establish responsible practices around AI and emerging or disruptive technologies
5.21 Include responsible financial policies
5.22 Include organizational philanthropy policies
5.23 Plan for a digital product or service's care and end of life
5.24 Include e-waste, right-to-repair, and recycling policies
5.25 Define performance and environmental budgets
5.26 Use open source where possible
5.27 Create a business continuity and disaster recovery plan

https://www.w3.org/TR/web-sustainability-guidelines/

§ 2.11 Optimize media to reduce resource use

> *Include media only when it supports user needs. Manage, optimize, and load media efficiently. Ensure users have control over playback and data use.*

§ Success Criterion: Need for media Resources

Only include media when it supports user experience or improves understanding and keep the number of media items to a minimum.

§ Success Criterion: Optimized media Resources

Resize, optimize, and compress media for different screen sizes, devices, and user needs. Use widely supported, efficient formats that enable native playback where possible. Avoid unnecessary custom or non-native media players. Use hardware-accelerated playback when available and compatible with security requirements.

§ Success Criterion: Lazy loading Resources

Incorporate lazy and/or deferred loading from the start by identifying which media elements are required immediately and which should load only on user interaction. Load large or data-intensive media only when needed, using a non-functional static facade or placeholder to defer loading until user request or interaction.

§ Success Criterion: User-controlled media Resources

Disable autoplay for audio, video, and other media by default. Ensure users can control playback and resolution. Inform users about media length, format, and expected data use. Provide the option to disable data-intensive media or offer lower-bandwidth alternatives.

§ Success Criterion: Media management and use Resources

Create a media management and usage policy. Include guidance on compression, rendering performance, file formats, data retention, storage, review, and deletion.

§ Additional information

▼ Show / Hide additional information to understand this guideline and its success criteria.

Reporting

[*GRI*] compliance guidance is available from the body that issues the standard.

GRI 301: Materials	High	**GRI 302: Energy**	High
GRI 303: Water	High	**GRI 305: Emissions**	High

Example

```
<picture>
        <source type="image/avif" srcset="image.avif">
        <source type="image/webp" srcset="image.webp">
        <img width="100px" height="100px" src="image.jpg" alt="" loading="lazy"/>
</picture>
```

Tags

Accessibility, Assets, Content, HTML, Performance, Software, UI, Usability

Guideline 2.11: Optimize media to reduce resource use

▼ SC: Need for media

- 5 terabytes for 30 seconds of homepage video
- 20 ways to make your website more energy efficient
- [*AFNOR*] Spec 5.4.4 (*French*)
- Decarbonizing the media, broadcast, and streaming industry [*DECARB-STREAM*]
- [*GPF*] - General Policy Framework for the Ecodesign of Digital Services
  - 5.1 - Content (Image Suitability)
- [*GR491*]
  - 2-4009 - Meaningful Images
  - 2-4010 - Image Avoidance
  - 3-4028 - Meaningful Videos
  - 2-4011 - Text Replacement
  - 3-4029 - Video Avoidance
- GreenIT
  - 0037 - Use CSS instead of images
  - 0050 - Prefer glyphs over images
- Streaming the future of sustainability [*STREAMING*]
- The Carbon Impact of Web Standards [*CIWS*]
- Use multimedia wisely
- Web Almanac: Sustainability [*ALMANAC*]
- Why, when and how to use video and animation on your website

▸ SC: Optimized media
▸ SC: Lazy loading
▸ SC: User-controlled media
▸ SC: Media management and use

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