Beata Mäihäniemi, LL.D.

Senior lecturer in law, University of Lapland

Advancing the Digital Circular Economy

Legal Foundations for the increased use of AI and Data

LAPIN YLIOPISTO
UNIVERSITY OF LAPLAND



LAPIN YLIOPISTO
UNIVERSITY OF LAPLAND

Structure of the presentation

SOME BACKGROUND ON EU POLICIES AND THAT EMBRACE SUSTAINABILITY TRANSITION

WHAT IS DIGITAL CIRCULAR ECONOMY?

THE ROLE OF AI AND DATA IN ACCELERATING CIRCULAR ECONOMY

SCATTERED LEGAL FRAMEWORK FOR DIGITAL CIRCULAR ECONOMY

FEW EXAMPLES OF HOW DIGITAL CIRCULAR ECONOMY IS IMPLEMENTED

POSSIBLE (LEGAL) MEASURES TO BE IMPLEMENTED

Are we doomed?

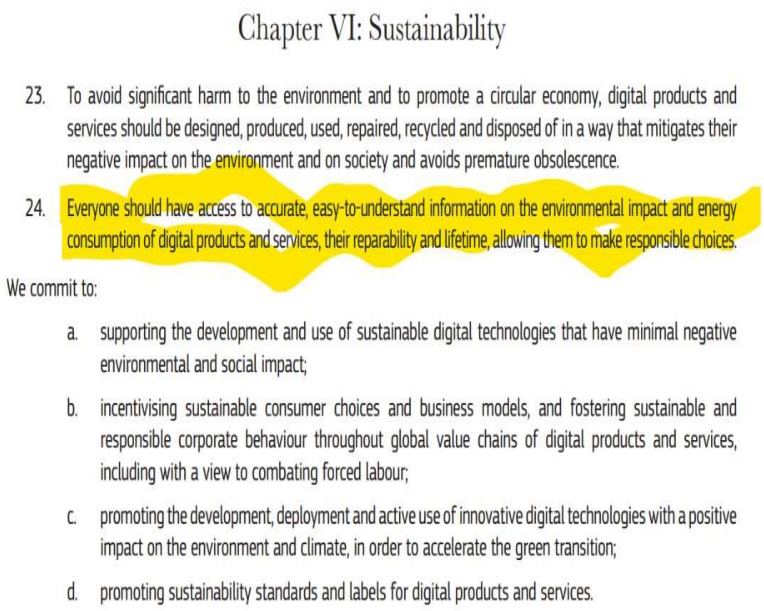
- ‘The capitalism as it exists nowadays is not concerned with environment (…) Where the economy is highly dependent on fossil fuel and strives mainly for efficiency, this will lead to further advancement of global warming (Green 2023).
- recent societal change has been driven by the urgent need to reduce the exploitation of resources, even that of renewable ones
- the average European produces five tons of waste, including food waste, each year (European Commission n.d.)
- the only way in which a significant reduction in emissions can be achieved is by limiting waste (European Commission 2022)

Oh shit! The economy!
Perhaps the most famous Covid Meme.

Circular economy over linear

- Degrowth - ‘a performative fiction, used to mean the need to break with the cycle of productivity’ (Latouche 2020), ‘GDP does not include off-market transactions (...), since expenses related to the repairs of damages caused by growth (uncertainty, pollution, stress, health problems) are counted as positive, since negative externalities and damage to the environment are not deduced’ (ibid.).
- “Durable economics” (Jaeger-Erben, Wieser, Marwede and Hofmann 2023)
- “Doughnut economics”- a model of economy where social foundations such as water, social equality are accompanied by the so-called ecological ceiling such as taking into account air pollution, biodiversity loss, chemical pollution, climate change (Raworth 2017).

Embracing sustainability in the EU



Chapter VI: Sustainability

23. To avoid significant harm to the environment and to promote a circular economy, digital products and services should be designed, produced, used, repaired, recycled and disposed of in a way that mitigates their negative impact on the environment and on society and avoids premature obsolescence.

24. Everyone should have access to accurate, easy-to-understand information on the environmental impact and energy consumption of digital products and services, their reparability and lifetime, allowing them to make responsible choices.

We commit to:

a. supporting the development and use of sustainable digital technologies that have minimal negative environmental and social impact;

b. incentivising sustainable consumer choices and business models, and fostering sustainable and responsible corporate behaviour throughout global value chains of digital products and services, including with a view to combating forced labour;

c. promoting the development, deployment and active use of innovative digital technologies with a positive impact on the environment and climate, in order to accelerate the green transition;

d. promoting sustainability standards and labels for digital products and services.

Brundtland Report (1987)

Green Deal - the European Commission had acknowledged the importance of digital technologies in achieving the policy goals

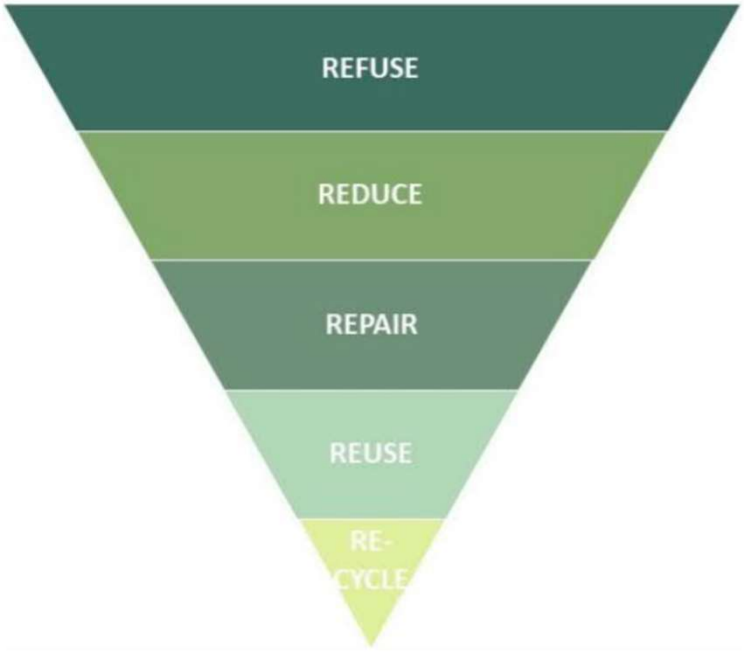
The Circular Economy Action Plan (2020) - to stimulate important and disruptive changes in the market to contribute to the combat against climate change and biodiversity loss + the quality of the goods that are produced be improved and that we ensure that all corporations act on maximum responsibly and sell sustainable products, as well as that they maintain, repair, recycle, and upcycle goods such as devices and clothes.

European Declaration on Digital Rights and Principles: 'The digital transformation affects every aspect of people's lives. It offers significant opportunities for a better quality of life, economic growth and sustainability' (Article 2)

Draghi report (2024) 'The EU is also the world leader in sustainability and environmental standards and progress towards the circular economy, backed by the most ambitious global targets for decarbonisation, and can benefit from the largest exclusive economic zone in the world, covering 17 million square kilometres, 4 times the EUs land surface' (p. 7)

What is digital circular economy?

- **avoiding waste but on 'steroids'** i.e. 'by having a complete overview of their supply chain, digital businesses can minimize environmental harm, while boosting profits and competitiveness.' (World Economic Forum 2022).
- materials used efficiently, avoiding waste so natural resources have room to regenerate instead of being depleted (The data-based circular economy brings both opportunities and challenges – Sitra)
- material information for each link in a product's value chain (ibid.)
- is an integral part of the ongoing green and digital transitions, also labelled the 'twin transition'.



Source: Circular-citizens.com

The role of AI and data in accelerating circular economy

- AI and data as critical drivers of the digital circular economy
- can help identify patterns based on available data to enable resource-efficiency and the avoidance of waste
- can be a two-edged sword: while they can enhance sustainability by facilitating predictive maintenance or pollution mitigation, they consume large amounts of energy (Communication on the Green Deal)
- The training of one AI model can emit as much carbon dioxide as five cars during their entire life cycle.

Scattered legal framework for digital circular economy (1)

Several regulations directed towards the adoption of a circular economy

- Ecodesign for Sustainable Products Regulation - European Commission (europa.eu)
- the Corporate Responsibility Directive,
- the Green Claims Directive,
- and the Directive on the Right to Repair are not sufficient to attain digital circular economy in themselves
- not sufficiently focusing on digitalising and making use of data and the role of AI in circular economy

Recent regulatory frameworks on digital technologies

- looking at Digital Services Act, AI Act or Data Act, references to the green transition are rather scarce and general, or even vague (Schütte and Mäihäniemi 2024)

Scattered legal framework for digital circular economy (2)

- Neglecting the necessary interoperability of crucial regulation can lead to regulatory gaps and inconsistent regulation
- Can lead to legal uncertainty and ultimately have a chilling effect on the uptake of new technologies and investment in sustainable practices.
- Create a multi-layered legal jungle especially for SMEs

(Schütte and Mäihäniemi 2024)

Example 1 Digital Product Passport

- a digital identity card for products, components, and materials, which will store relevant information to support products' sustainability, promote their circularity and strengthen legal compliance.
- information accessible electronically, making it easier for consumers, manufacturers, and authorities to make more informed decisions related to sustainability, circularity and regulatory compliance
- Product's technical performance/, Materials and their origin, Repair activities, Recycling capabilities, Lifecycle environmental impacts
- can enable innovation and improve maximum the functioning of consumer markets
- can also impose a large burden on businesses, especially small and medium-sized enterprises, and thus lead to a 'sustainability gap'
- may exacerbate the problem of inequality between enterprises that operate in emerging and developed markets because enterprises in emerging markets may lack the resources that are necessary to comply with sustainability requirements in the markets of high-income nations (World Economic Forum 2023)

Example 2: Recommender system of Temu may prevent access of consumers of products of a good quality, 2nd hand products

Temu – an online market place

EU Takes Action Against Temu for Alleged Digital Services Act Breaches

EU launches formal investigation into Temu's compliance with the Digital Services Act, focusing on user safety, transparency, and marketplace integrity.

Photo Credit: Unsplash+

Posted Friday, November 1, 2024 6:00 pm

TEMU UNDER THE MICROSCOPE

Sale of non-compliant products

Addictive design scrutiny

Staff Writer

The European Union (EU) has launched a formal investigation into the practices of the e-commerce platform Temu, marking a significant step under the recently enacted Digital Services Act (DSA). The proceedings, announced on October 31, 2024,

EC concerns

- 'Notice and Action mechanism' (users can notify illegal products),
- the online interfaces (should not deceive or manipulate users via so called 'dark patterns'),
- the protection of minors,
- the transparency of recommender systems (consumers do not see green products or are greenwashed)
- the traceability of traders and compliance by design

Commission opens formal proceedings against Temu under DSA (europa.eu)

Possible DSA infringments by Temu

- Article 27 Recommender system transparency - providers of online platforms that use recommender systems shall set out in their terms and conditions, in plain and intelligible language, the main parameters = why certain information is suggested to the recipient of the service, used in their recommender systems, as well as any options for the recipients of the service to modify or influence those main parameters
- Article 34 Risk assessment: providers of VLOP shall diligently identify, analyse and assess any systemic risks from the design or functioning of their service and its related systems, including algorithmic systems, or from the use made of their services

(a) the design of their recommender systems and any other relevant algorithmic system; (b) their content moderation systems; (c) the applicable terms and conditions and their enforcement; (d) systems for selecting and presenting advertisements; (e) data related practices of the provider

- Article 35 - mitigation of these risks
- Article 38 – providers of VLOP that use recommender systems shall provide at least one option for each of their recommender systems which is not based on profiling
- Article 40 - data access and scrutiny - providers of VLOP shall provide the Digital Services Coordinator of establishment or the Commission access to data that are necessary to monitor and assess compliance

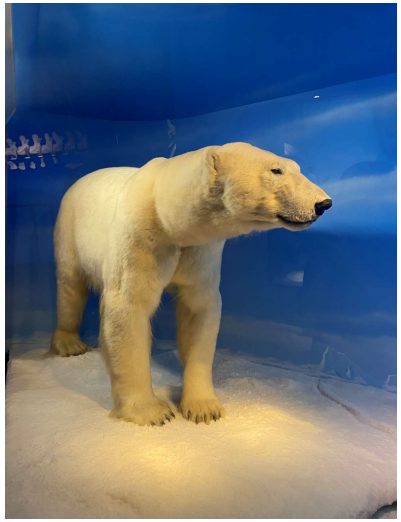
Example 3: The Resources Market (Materiaalitori) in Finland

- promotes the utilization of waste, side streams and surplus materials as well as reusable parts by providing a meeting place where providers and users of materials can find each other
- providers and users can also search for and offer services related to these materials on the material market, such as waste management and expert services
- Possibility to offer and search for circular economy expert services and know-how
- cost-effective operation and the development of new ways of utilization and business
- professional exchange of waste and side streams of Finnish companies and organizations and related services
- owned by the Ministry of the Environment

Source: Kiertotalouden markkinapaikka yrityksille - Materiaalitori

- Problems such as trust in government if model is copied to other countries, sensitive information of companies to be shared, safety, should companies be involved in co-creation of similar databases etc.

Possible measures to address the digital v. sustainability gap



- Common agenda for the EU on sustainability transitions?
- Embracing sustainability on a larger scale, as a goal of also data governance and AI regulations
- Incorportating specific provisions on specific behaviour that encourages unsustainable actions or overconsumption, especially by dominant and large online platforms, e.g. imposing obligatory quota (%) for ads of 2nd hand, recycled and upcycled products
- Designing such models of online platforms that encourage digital circular economy by data se from governments and NGOs
- Increasing transparency of a product life - 'cradle to cradle' model
- Moving away from consent and consumer autonomy and consumer choices, towards a stricter approach inin recent AI and data governance regulation
- Platforms for sharing industry data on waste – to enable reuse of waste for other purposes
- Increasing repair and upcycling of products by adjusting IPR- regulations and responsibilities of online sellers

LAPIN YLIOPISTO
UNIVERSITY OF LAPLAND

Questions or comments?

Thank you!

beata.maihaniemi@ulapland.fi