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BUSINESS DIGITALIZATION AS AN ELEMENT OF THE ENVIRONMENTAL STRATEGY OF ENTERPRISE DEVELOPMENT

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The development of digital technologies not only changes the business processes of enterprises, but also forms the basis for building environmental sustainability. Digital transformation affects not only the increase in the efficiency of management decision-making, but also contributes to sustainable development. Digitalization as a catalyst for environmental sustainability covers the implementation and use of digital technologies, including to reduce negative impacts on the environment, conserve resources and minimize waste generation [1]. Businesses can use a wide range of digital solutions to achieve these goals, including: smart manufacturing based on process automation; product life cycle management by modelling environmental impacts, resource consumption and recycling opportunities; supply chain management and customer engagement through the use of specialized programs and applications.

At the same time, IT companies involved in digitalization also have a noticeable impact on the environment (for example, extraction of raw materials, e-waste, greenhouse gas emissions, water use). In 2021, the 200 companies studied as part of the Digital Inclusion Benchmark (DIB) process collectively generated operational greenhouse gas emissions of 262 million tonnes of carbon dioxide equivalent, representing 0.8% of global energy emissions [2].

Based on the International Monetary Fund's proposal to value a ton of carbon at US$75, the greenhouse gas emissions of these digital companies would equal about US$20 billion, or more than half of global GDP.

Providers of telecommunication services make the largest contribution to emissions (Figure 1). Hardware companies are the second largest group of polluters. IT services and software companies are the third largest group of operating issuers.

The biggest pollutants are produced data storage, managed by data centres located around the world. Example in France, they consume an average of 5.15 megawatts per m^2 per year. For example, this means that a 10,0 m^2 Data Centre consumes as much as a city of 50,000 inhabitants, such as Valenciennes (France) [3].

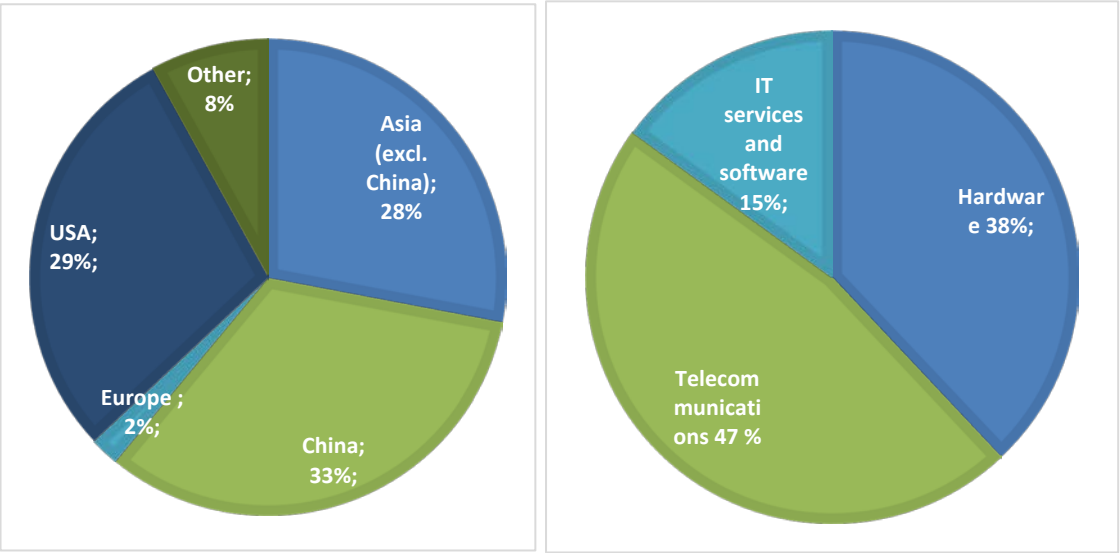

Figure 1. Distribution of operational GHG emissions, DIB200 companies, 2021

Source: [6]

Geographically, companies headquartered in Asia account for almost half of the emissions of the companies surveyed. Chinese manufacturers are responsible for a third of global emissions. Given the escalation of environmental problems, businesses are faced with an urgent need to implement sustainable practices that minimize their environmental footprint while maintaining economic growth and competitiveness [4].

Digitization provides enterprises with a number of powerful tools for the effective implementation of the concept of Corporate Digital Responsibility (CDR), which provides that the creation of the value of enterprise digitalization should be reflected not only in the creation of economic value, but also include social value and environmental value [5].

Digital transformation makes it possible to improve business processes, enterprise development models, organizational activities, and personnel competencies. Some experts believe that the impact of digitalization on society is CSR 2.0, and the Fourth Industrial Revolution is accelerating its impact [7].

In view of the concept of business ethics, CDR can be defined as a set of values and specific norms that guide the judgments and choices of an organization in matters that specifically concern digital matters. Such values and norms related to CDR share principles and goals with CSR or an organization's commitment (and accountability) to social and environmental affairs in general [5].

Along with the change in technological systems, approaches to CSR are also changing. Table 1 shows parallels between Web 2.0, the second generation of Internet network services that allow users to create and use information resources, and CSR 2.0 adapted to it. This new CSR – the so-called systemic or radical CSR, or CSR 2.0 – is based on five principles (creativity, scalability, responsiveness, locality and cyclicality) and forms the basis for a new model of responsible business based on values, good governance, social contribution and ecological integrity [8]. The development of digital technologies grew not only into the Web 3.0 format, but also transformed the concept of CSR in generation 3.0 (table 1).

If Web 2 emerged in the 2000s and is represented by interactive sites and content created by users (UGC (User-generated Content), which also got the opportunity to sell information, including that related to personal data of third parties, then the emergence Web 3 in the 2020s began building a decentralized system that allows users to store and control their information**.**

Table 1

Evolution and interaction of CDR and CSR

Web 2.0	**CSR 2.0**
A social phenomenon focused on meeting the needs of users and involves the active participation of people in filling the virtual space with informational materials, sharing experiences and skills.	Global common property involves the development of innovative partnerships and social entrepreneurship by involving groups of stakeholders based on transparency, decentralization, scaling of accumulated experience.
Web 3.0	**CSR 3.0**
Greater transparency and reliability of transactions; simplification of requests for official documents; increasing the speed of signing agreements at the national and international levels.	It is part of the organizational strategy and deals with societal topics that affect business activities in a broader and indirect sense, such as human rights and education inside and outside the company.

Source: developed by the authors based on [8; 9]

Digital responsibility is increasingly affecting society. The morality and ethics of any technology can be revealed only in the process of its application. CDR and CSR should complement and reinforce each other. Digital transformation is not limited to the effects on business processes and business models, it penetrated into people's personal lives.

Sustainable development and environmental responsibility have chosen the path of digitalization, which has become a transformative force for environmental sustainability, balancing digital pollution on the one hand, and optimizing the use of resources at all stages of the global value chain on the other. Digitization preserves the environment, gains competitive advantages and prepares society for the next evolutions based on the integration of CDR and CSR models.

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