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The Environmental Impact of Email Communication and the Need for Sustainable Digital Practices

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Abstract

Emails are widely regarded as an efficient and intangible form of communication, yet their environmental impact remains largely overlooked. Through a review of existing literature on digital carbon emissions, data center energy consumption, and email usage patterns, this paper examines the carbon footprint associated with email use, emphasizing how the cumulative effects of data transmission, storage, and infrastructure contribute to global emissions. While existing research highlights the role of data centers and digital activity in environmental degradation, limited attention has been given to the behavioral patterns and systemic structures that sustain excessive email volume. The literature reviewed in this paper suggests that email-related emissions are not only a technological issue but also a behavioral and institutional one, driven by habits such as unnecessary communication, prolonged data storage, and reliance on high-volume digital systems. It further identifies gaps in current research, including the lack of analysis on demographic variation and device-specific impacts. To address these challenges, the paper proposes EcoMail, a behavioral intervention designed to encourage mindful email management and reduce unnecessary digital storage. By integrating environmental analysis with a practical solution, this study highlights the importance of rethinking everyday digital practices as part of broader sustainability efforts, demonstrating that small-scale behavioral changes, when scaled collectively, can contribute to meaningful reductions in the carbon footprint of digital communication.

Keywords: Carbon Footprint; Data Centers; Sustainability; Email Clutter; Technology