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Sommario/riassunto Roles and opportunities for information technology in meeting sustainability challenges -- Elements of a computer science research agenda for sustainability -- Programmatic and institutional opportunities to enhance computer science research for sustainability. "A broad and growing literature describes the deep and multidisciplinary nature of the sustainability challenges faced by the United States and the world. Despite the profound technical challenges

involved, sustainability is not, at its root, a technical problem, nor will merely technical solutions be sufficient. Instead, deep economic, political, and cultural adjustments will ultimately be required, along with a major, long-term commitment in each sphere to deploy the requisite technical solutions at scale. Nevertheless, technological advances and enablers have a clear role in supporting such change, and information technology (IT) is a natural bridge between technical and social solutions because it can offer improved communication and transparency for fostering the necessary economic, political, and cultural adjustments. Moreover, IT is at the heart of nearly every large-scale socioeconomic system-including systems for finance, manufacturing, and the generation and distribution of energy-and so sustainability-focused changes in those systems are inextricably linked with advances in IT. The focus of Computing Research for Sustainability is "greening through IT," the application of computing to promote sustainability broadly. The aim of this report is twofold: to shine a spotlight on areas where IT innovation and computer science (CS) research can help, and to urge the computing research community to bring its approaches and methodologies to bear on these pressing global challenges. Computing Research for Sustainability focuses on addressing medium- and long-term challenges in a way that would have significant, measurable impact. The findings and recommended principles of the Committee on Computing Research for Environmental and Societal Sustainability concern four areas: (1) the relevance of IT and CS to sustainability; (2) the value of the CS approach to problem solving, particularly as it pertains to sustainability challenges; (3) key CS research areas; and (4) strategy and pragmatic approaches for CS research on sustainability."--Publisher's description.