

DX and GX: Digital Sustainability

DXとGX：デジタル持続可能性

Michael Wade, TONOMUS Professor of Strategy and Digital
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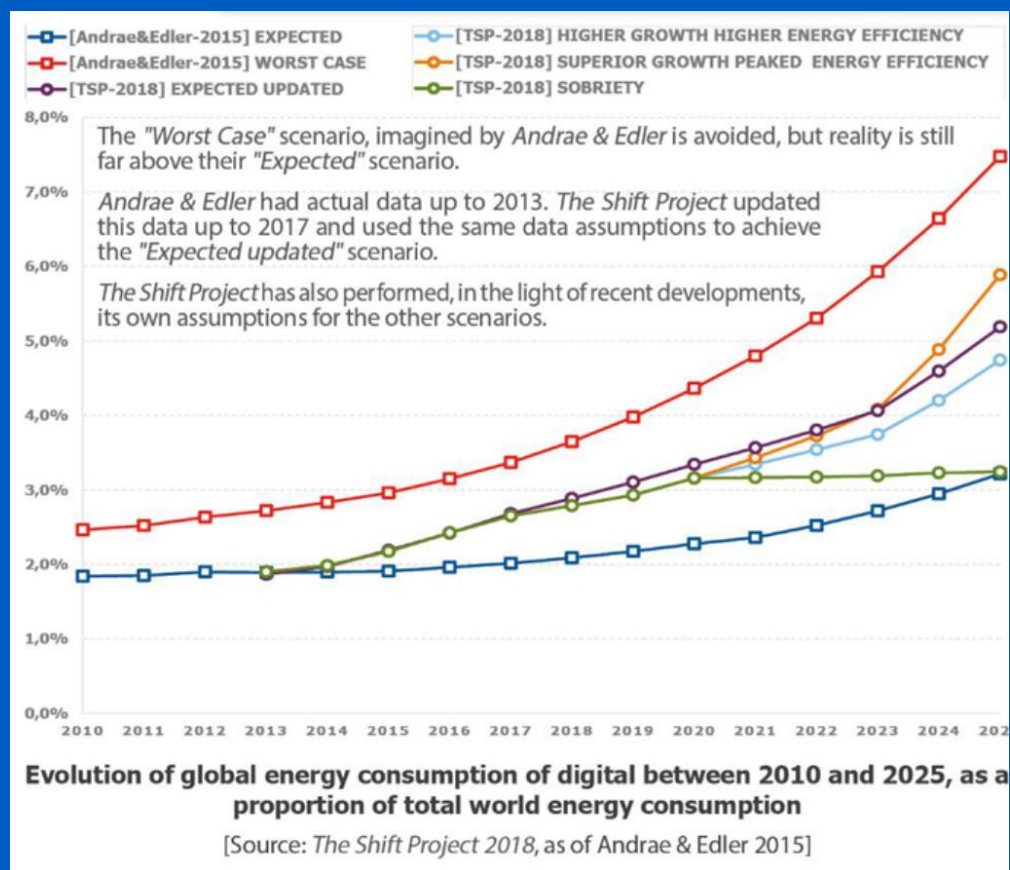
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Digital and AI have direct negative impacts on the environment... these need to be reduced.

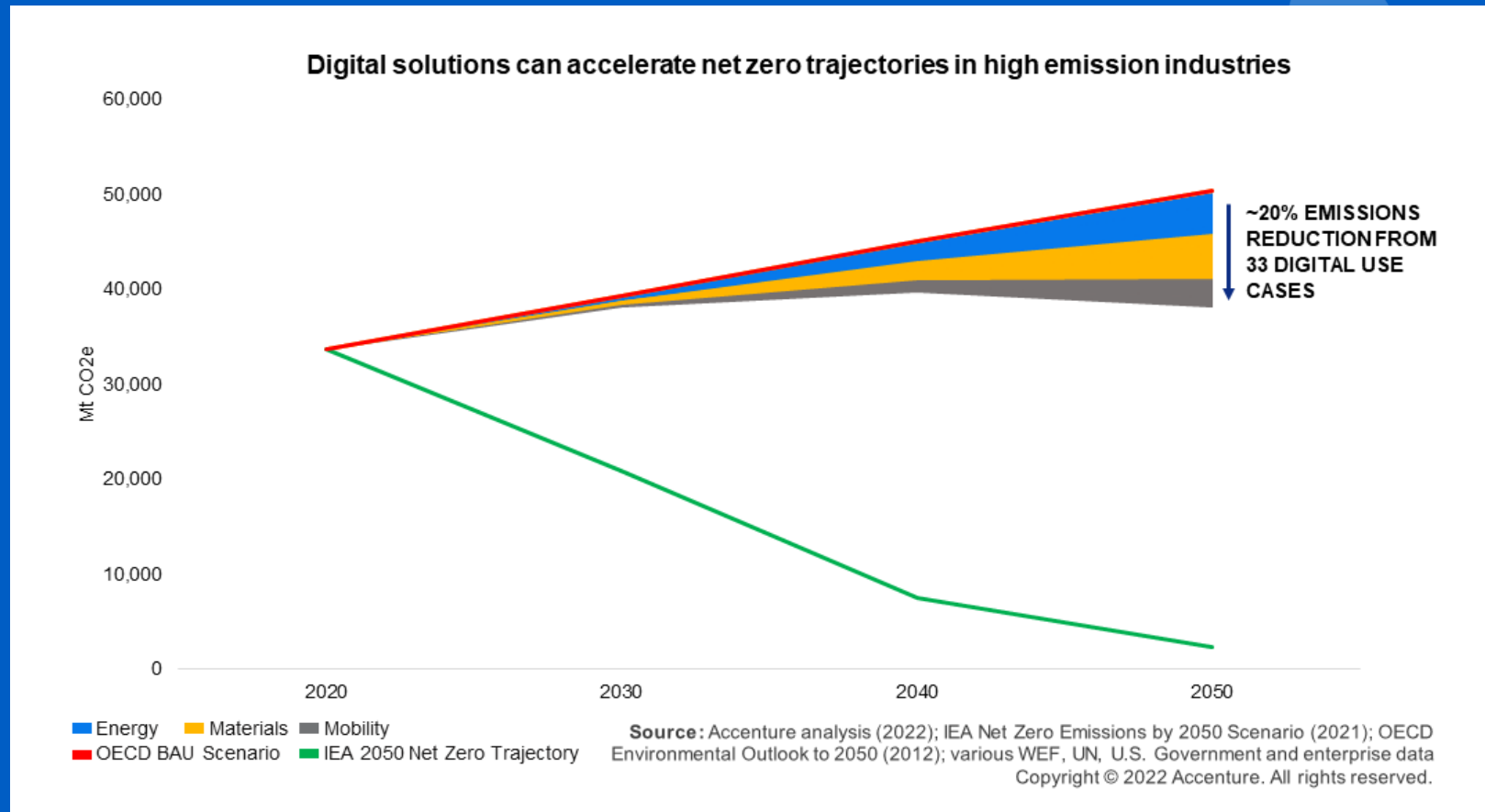
デジタルとAIは、環境に直接的悪影響を及ぼす。この影響を減らす必要がある。



世界のエネルギー消費における、デジタル・エネルギー消費の比率の推移
(2010-2025)

However, they can also reduce negative impacts elsewhere...
these need to be leveraged

だが、デジタルとAIは別の所で悪影響を削減できる。このことを活かすべき。



デジタル・ソリューションは、高排出産業でのネット・ゼロへの軌道を加速できる：
33のデジタル活用事例による、20%までの排出量削減（青：エネルギー、黄：素材、灰：モビリティ）

There are three levers for combining DX and GX

DXとGXの組み合わせには、3つのレバーがある。

See better:

より良く「見る」

Increasing transparency

透明性の向上



Act better:

より良く「行動する」

Modelling simulating,

and manipulating

モデル化、シミュレーション、操作



Scale better:

より良く「拡大する」

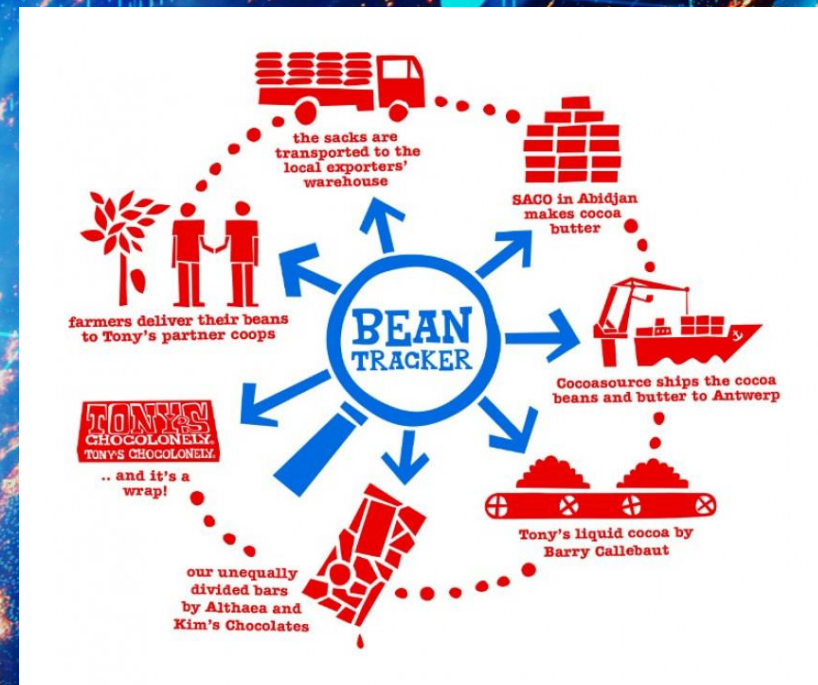
Making everything

connected and smart

あらゆるものを






コネクテッドでスマートに



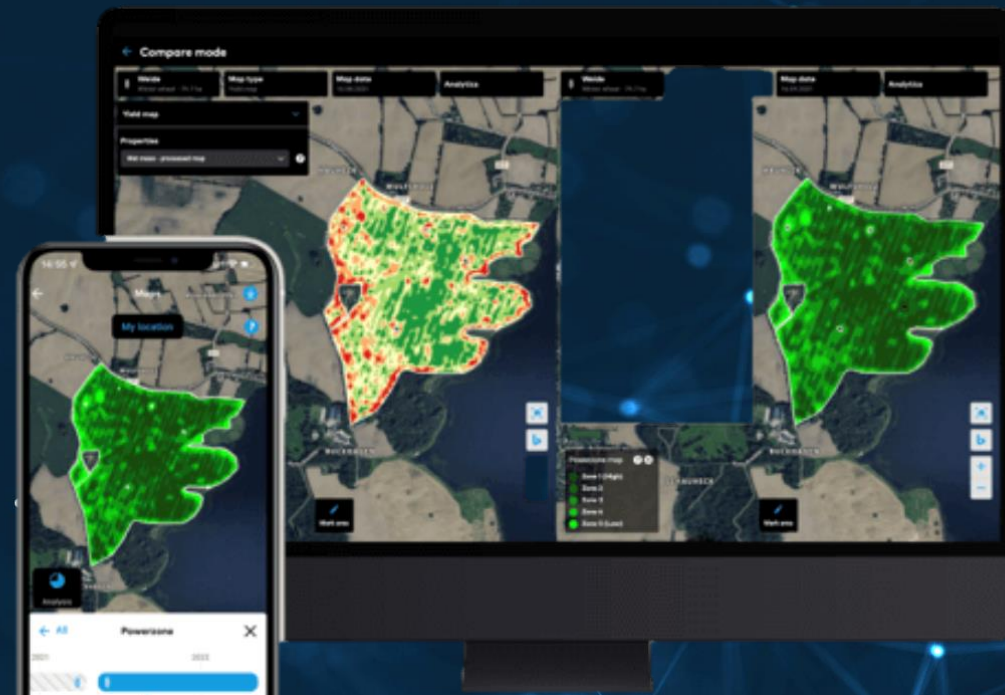


See better: Increasing transparency
より良く「見る」：透明性の向上



INDUSTRY	USE CASE (CONTEXTUALIZED FOR INDUSTRY)
 2.1. Construction and Cities	A: Building operational efficiency optimization enabled by virtual twin technologies B: Enhanced urban design through simulation, planification and optimization
 2.2. Consumer Packaged Goods	A: Sustainable product development supported by LCA-based 3D modeling and simulation B: Manufacturing plant optimization for FMCG products with process virtual twins
 2.3. Transportation and Mobility	A: Product design, prototyping and testing with virtual twin technologies B: After-market performance optimization via virtual twin technologies
 2.4. Life Sciences	A: Manufacturing plant optimization for pharmaceutical products with process virtual twins B: Virtualization of clinical trials enabled by virtual twin technologies
 2.5. Electrical and Electronics	A: Waste Electric and Electronic Equipment value recovery supported by virtual twin B: Circular electrical and electronic product design enablement

Act better: Modelling simulating, and manipulating
より良く「行動する」：モデル化、シミュレーション、操作



Scale better: Making everything connected and smart
より良く「拡大する」：あらゆるものを、コネクテッドでスマートに

UN environment programme

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Digitalization for Sustainability















IMDA launches a \$30 million funding initiative to spur green computing research

The Edge Singapore
Thu, Jan 25, 2024 • 10:52 AM GMT+08 • 2 min read



IMDA also invites industry partners to participate in green software trials to better understand how to develop green software.
Photo: Pixels

Follow us on [Facebook](#) and join our [Telegram](#) channel for the latest updates.

The Infocomm Media Development Authority (IMDA) has launched two green computing initiatives that aim to promote sustainable practices and efficient use of computing resources in the tech sector.

GOV.UK

Bring photo ID to vote Check what photo ID you'll need to vote in person in the General Election on 4 July.

Home > International > Foreign affairs > Digital development strategy 2024 to 2030

Foreign, Commonwealth & Development Office

Policy paper Digital development strategy 2024 to 2030

Published 18 March 2024

CODES

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The Coalition for Digital Environmental Sustainability

A Sustainable Planet in the Digital Age

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The role of government is critical

政府の役割は極めて重要

Recommendations...提言

- Most of the focus of DX and AIX has been on improving performance in terms of efficiency gains and new sources of revenue. Organizations should be incentivized to use digital and AI to also improve environmental objectives.
DXとAIXの焦点の大半は、効率向上と新収益源獲得などの、業績改善に置かれてきた。組織は、デジタルとAIを環境目標の改善にも活用するよう、奨励されるべき。
- This can happen by leveraging digital and AI tools to see better, act better, and scale better.
デジタルとAIのツールを、より良く「見る」「行動する」「拡大する」ことに活用すれば、これは可能。
- Organizations need to create joint governance between digital and sustainability teams.
They need to work together!
組織は、デジタル・チームとサステナビリティ・チームと一緒に統治すべき。両チームの協働は不可欠。
- Regulation and incentives can be used to achieve all three objectives. Governments can play a critical role!
三つの目標達成に、規制とインセンティブが活用できる。政府は重要な役割を果たせる。

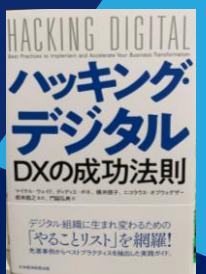
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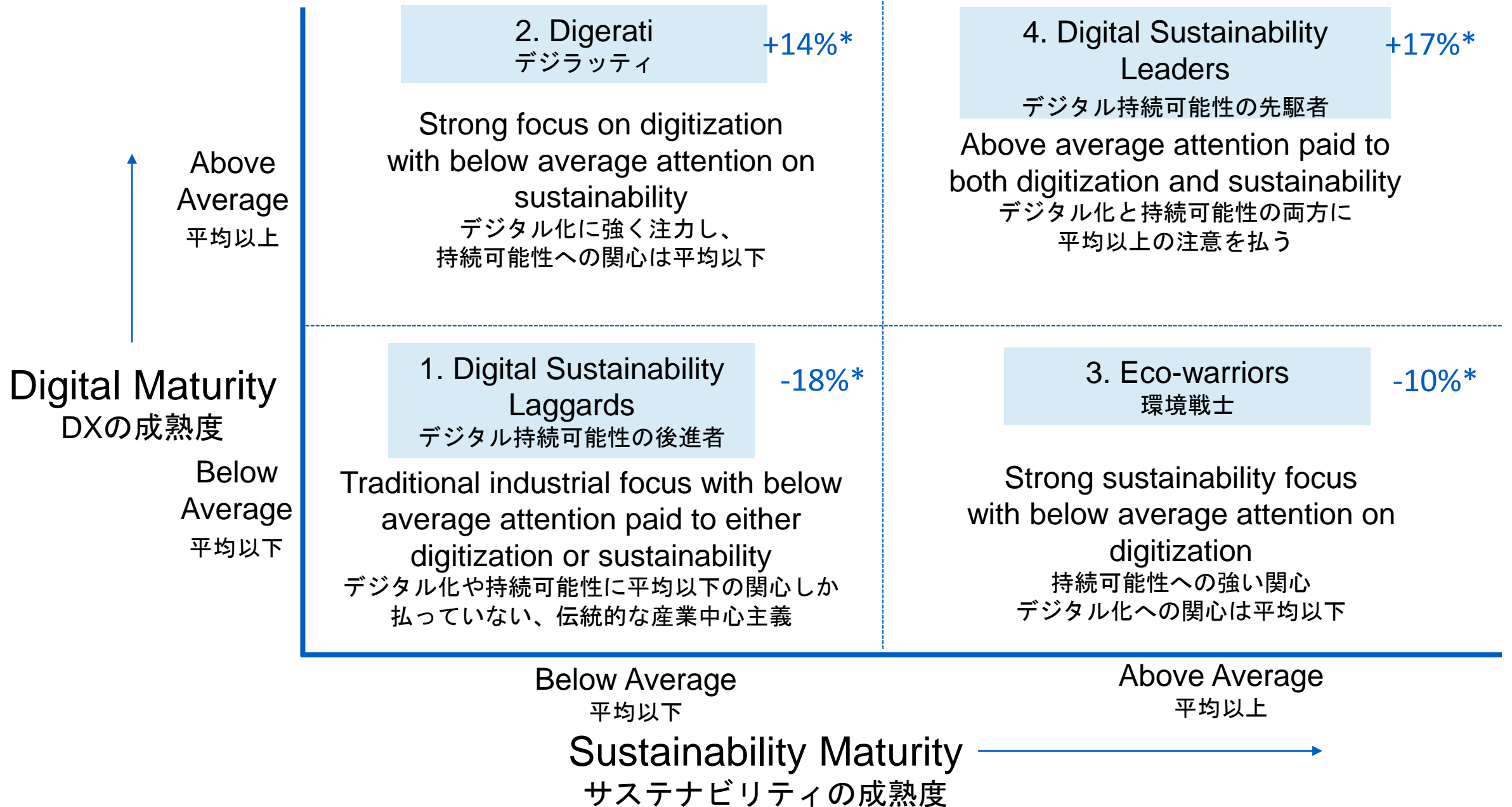
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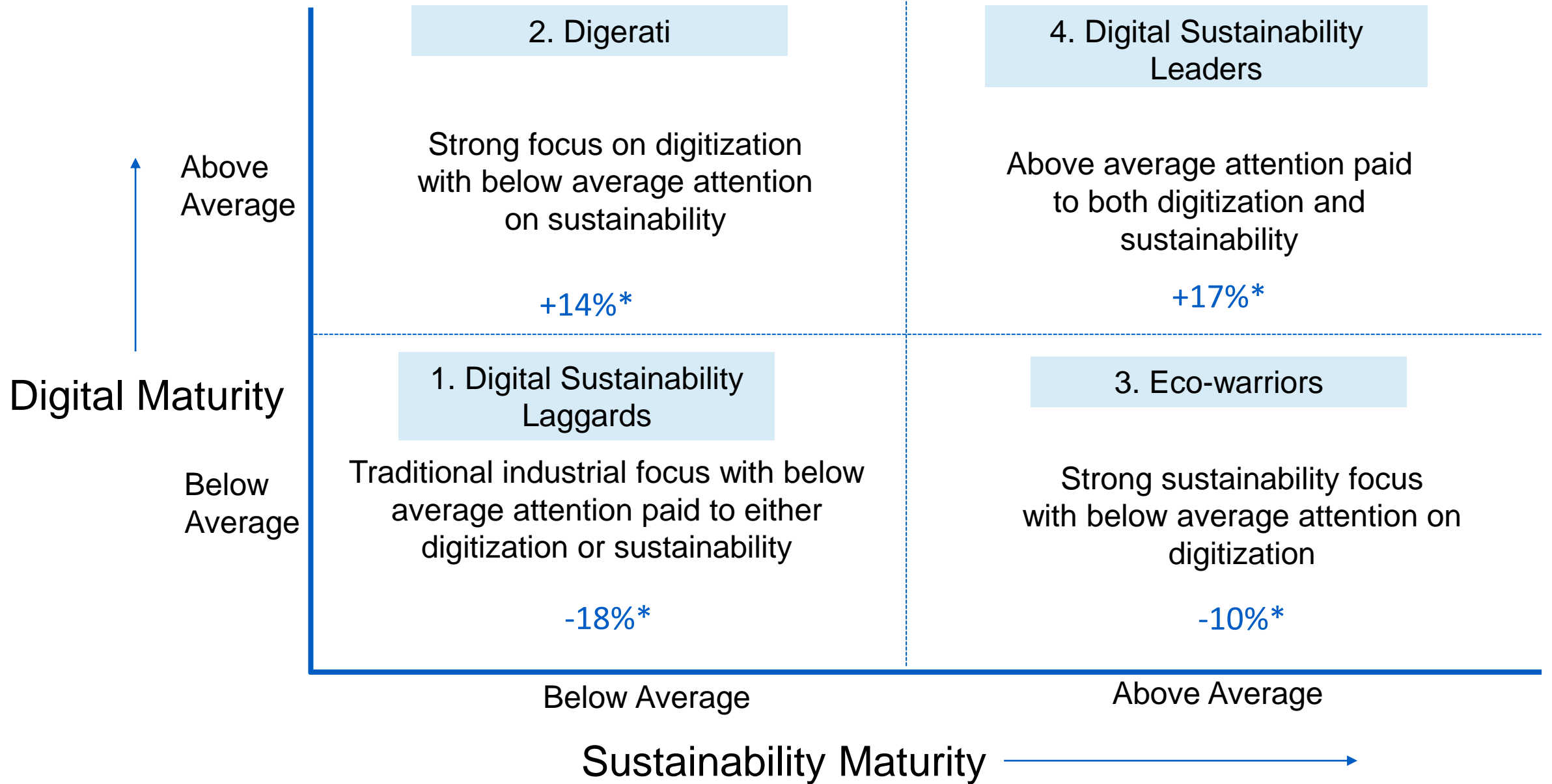
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Appendices



* Over/under valuation of organizations compared to industry average



* Over/under valuation of organizations compared to industry average

