Information is power: how tech is transforming public sector sustainability

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Knowledge Partner
The twin transition
A new digital and sustainability framework for the Public Sector

Gianluca Di Pasquale
EY Green Economies & Infrastructure Leader

6 May 2021
Will the pandemic be a return to business-as-usual or a turning point for addressing sustainability?

We must rapidly reduce greenhouse gas emissions now to keep global warming to 1.5°C above preindustrial levels. Public sector action will be decisive in determining our fate through key actions:

Steering environmental action through policy:
- setting targets
- determining regulatory actions
- mobilizing resources, investments and capabilities

Transforming their own operations:
- Assessing and mitigating the carbon, water, and waste impacts from public services, including buildings footprints, procurement of goods and services, transport and workforce needs

How can governments harness the power of digital technologies and data to enable their sustainability journeys?
How can the public sector seize the opportunity for a green and digital recovery?

► Environmental sustainability and digital transformation now front and center for governments

► According to the OECD, only 29% of long-term recovery funding have been currently allocated toward green initiatives, but recent developments show that leaders are getting serious about investing in a sustainable and digital recovery

► Digital and sustainability often viewed as distinct, but the key is integrating the two

► A digital government can help create a sustainable government, and vice versa through a twin transition

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Recovery funding by environmental impact

Microsoft-EY Twin Transition Framework

SUSTAINABILITY OUTCOMES

**Fragmented**
- Global targets established but different entities take different approaches
- Little awareness of digital benefits for sustainability

**Limited**
- Climate action plans based on limited data and aimed at improving efficiencies
- Limited synchronization across different public entities

**Realized**
- Digital technologies seen as essential to the sustainability agenda
- Harmonization of local targets with global goals around clear measures and a standardized methodology

**Transformed**
- Sustainability practices become part of the public sector culture, which result in inclusive and climate-first policies and strategies
- Technology and sustainability awareness at every stage from school curriculum to green procurement practices

Our approach to the study:
- 12 countries
- 3 Regions (Americas, Europe, Asia)
- 4 stages and focus areas
How can digital approaches accelerate environmental achievements?

Achieving progress on environmental sustainability is an evolutionary journey by governments that requires investments in technology and data, leadership, inter-governmental collaboration, and stakeholder buy-in.
Thank you
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Digital and Sustainability
Robert Opp, Chief Digital Officer

May 2021
UNDP: Working in 170 countries and territories to eradicate poverty and reduction of inequalities and exclusion

- **18,000** people working
- **$5B** in revenue
- **Active in 170** countries and territories

**POVERTY**
- **24 Million** people
  - ...people in 22 countries gained access to financial services, 2018-19.

**GOVERNANCE**
- **60 countries**
  - ...elections assisted annually by UNDP, including in fragile and post-conflict settings.

**RESILIENCE**
- **3 Million**
  - ...displaced people in 13 countries benefited from improved, political, legal, and social conditions.

**ENVIRONMENT**
- **$1 Billion**
  - ...accessed by countries from vertical funds by UNDP, 2018-19

**ENERGY**
- **50 Countries**
  - ...partnered with UNDP on clean energy and energy efficiency, 2018-19

**GENDER**
- **1.3 Million**
  - ...women benefited from UNDP recovery programmes across 17 countries
COVID Acceleration: over 250 new digital projects in more than 80 countries to respond to and recover from COVID-19

**Country with on-going or completed COVID digital project**

- Honduras: Innovative transfer program
- Bangladesh: Telemedicine helpline
- Guinea-Bissau: Online Community Support Platform
- Uzbekistan: Digitalizing the mahalla system
- Namibia: Linking vendors to digital platform
- Montenegro: "Be Safe" helpline for domestic violence victims

**LEGEND**
- Country with on-going or completed COVID digital project
- Spotlight country
- Accelerator Labs project
We developed a framework for inclusive whole-of-society digital transformation as an overarching reference model

**Purpose of the framework**

- Serves as an **overarching reference model** to identify, structure and prioritize national digital transformation efforts and agendas
- Serves as a **basis for discussion for possible UNDP support**
- It is a **top-level framing** that could encompass other existing frameworks
- Can be **adapted by each country** based on national priorities and development objectives
- Meant to **complement ongoing digital work** in UNDP
- Builds on and incorporates existing experiences and models¹

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¹ For example Pathways for Prosperity Commission Inclusive Digital Economy Kit, World Bank Digital Economy for Africa framework, OECD “Going Digital” project
UNDP’s has a large portfolio for Nature, Climate and Energy support

1000+ ongoing projects

$5B portfolio
We are leveraging digital technologies widely for sustainability initiatives

- **Traceable, Sustainable Supply Chains**
  
  *(Ecuador, Mongolia)*

- **FinTech Cash Apps for Reforestation**
  
  *(Philippines)*

- **AL/ML to monitor agricultural practices**
  
  *(Ecuador)*

- **Geospatial data for environment risk mgmt.**
  
  *(Maldives, Tuvalu)*

- **Crowdfunding renewable energy**
  
  *(Moldova)*
Coalition for Digital Environmental Sustainability (CODES)

Get Involved: SparkBlue.org/CODES
Microsoft: Digital transformations driving toward sustainability.

Amy Luers, PhD
Global Lead, Sustainability Science
Our core environmental sustainability commitments

- Carbon negative by 2030
- Zero waste by 2030
- Water positive by 2030
- Protect more land than we use by 2025
Achieving our Climate Commitments.

Four Action Plan

1. Reduce
2. Remove
3. Share
4. Invest
Action 1) **Reduce** our operations emissions to near zero

- **1.9 GW**
- **16 Contracts**
- **3 Continents**

- 60% in 2019 → 70% by 2023 → **100% by 2025**
Reduce supply/value chain emissions by half by 2030

Require supplier Reporting

Incentivize change carbon tax

Reduce the emissions of using our products

Scope 3

8.9%

Our Scope 3 carbon emissions related to devices was reduced by 8.9 percent (-524K mtCO₂e) from a 2017 base year.
Action #2) **Remove** the rest.

& **Remove** more – all historical emissions.
Action 3) **Share** what we learn

Microsoft carbon removal

2021 purchased 1.3M tons of carbon dioxide removal

Lessons from an early corporate purchase
Action 4) **Invest** in innovation.
Our goal is to empower every customer to meet their sustainability goals.
Transforming environmental monitoring & management

A Planetary Computer for a Sustainable Future

Ecosystem Monitoring

Forest Carbon Risk Assessment

AI-Accelerated Land Cover Mapping
Build an **integrated biodiversity information system** to:

- Monitor and assess biodiversity change across
- Support regional, national, decision-making to curtail biodiversity loss and restore degraded ecosystems.
Urban Air Quality Monitoring for Environmental Justice

Return to Microsoft Research Lab - Redmond

Urban Innovation
NRCan’s Digital Accelerator
Vik Pant, PhD, Chief Scientist and Chief Science Advisor
“Deploying technology to support climate action is one of our greatest priorities. By placing solutions like Microsoft Azure AI at the core of its digital strategy, NRCan is creating a more sustainable and prosperous future for Canadians.”

*Lisa Carroll, Public Sector Lead, Microsoft Canada*

“Climate change is real. Combatting climate change requires innovation and collaboration. Microsoft’s digital technologies will support workers and the sustainable development of our natural resources. This is how we get to net zero.”

*Seamus O’Regan Jr.,
Canada’s Minister of Natural Resources*
Electric Vehicle Load Prediction
Energy Technology Sector

**Challenge:** Extensive EV data needs to be modeled to better understand grid loads and support Canada’s aim to reduce greenhouse gas emissions

**Approach:** Take a step-by-step approach to understand and visualize data, and eventually build a predictive Machine Learning model

**Impacts:** Reduced load on electricity infrastructure by identifying patterns and correlations affecting grid utilization by EVs. Optimized use and management of infrastructure supporting greater use of EVs for diverse transportation needs.
**Challenge:** Misuse and misappropriation of ENERGY STAR® brand by retailers and manufacturers.

**Approach:** Build a Machine Learning tool to find on the web and flag misuses automatically and aid in enforcement.

**Impacts:** Strengthening Canadians’ ability to make correct energy related decisions.
**Challenge:** Little is known about structures (tailings ponds, waste rock piles, etc.) around active and abandoned mine sites, which makes it difficult to evaluate their associated social and environmental risks. Moreover, of 10K abandoned mine sites only 6.5K are included in the current national database.

**Approach:** Use AI on satellite images to automatically identify missing mines and their structures

**Impacts:** Locating abandoned/orphaned mines missing from the database will enhance understanding of climate-related risks and impacts on the surrounding area, help with cumulative impact assessment, and provide baseline for monitoring of change.
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