



# UPU Think Tank Brief

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## Breaking silos – Integrating digital and green strategies in the global postal sector

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### Context and importance of the issue

The global postal sector faces a critical strategic dilemma – in spite of rapid progress in both digital transformation and environmental sustainability, these two essential transitions remain largely isolated from each other.<sup>1</sup>

This siloed approach not only limits the sector's potential synergies but also perpetuates inequalities, particularly for postal operators in developing countries who are often excluded from national climate and digital agendas.<sup>2</sup>

This policy brief examines how breaking down these silos through integrated, synergistic strategies can unlock the postal sector's unique potential to drive inclusive, sustainable development globally.

### Isolated transitions in a connected world

The postal sector stands at a unique intersection of physical and digital infrastructure, serving as a critical link between communities, businesses and governments worldwide. However, despite the integrated nature of postal operations, the sector's approach to transformation remains fundamentally fragmented.

Digital initiatives operate in one silo, with postal operators investing in e-commerce capabilities, tracking systems and digital platforms primarily to remain competitive, with little consideration for environmental impact or sustainability goals.

Meanwhile, green initiatives exist in another silo, where sustainability efforts focus on compliance-driven measures like fleet electrification and emissions reporting,

disconnected from the data capabilities and digital innovations that could amplify their impact.

This separation extends to strategic planning, which remains compartmentalized, with sustainability teams relegated to compliance and marketing roles rather than being integrated into core business strategy, while digital transformation teams rarely consider the environmental implications of their technology choices.

### The cost of silos

This fragmented approach creates several critical problems.

First, it leads to missed synergies, where digital tools like AI-powered route optimization could simultaneously improve efficiency and reduce emissions,<sup>3</sup> but are often implemented without environmental considerations.

Second, it results in inefficient resource allocation, as operators invest separately in digital and green initiatives, missing opportunities for integrated solutions that address both challenges.

Third, the impact remains limited, with isolated green efforts remaining small-scale compliance exercises rather than transformative business strategies, while digital innovations fail to contribute to sustainability goals.

Lastly, it creates a competitive disadvantage for postal operators, as larger platforms have integrated sustainability into their digital logistics platforms, leaving traditional Posts at risk of falling further behind.

<sup>1</sup> European Regulators Group for Postal Services (ERGP). *ERGP Report on Environmental Sustainability in the Postal Sector*. Brussels: ERGP, 2022.

<sup>2</sup> Universal Postal Union. *Postal Networks: Actors in the Social and Economic Development of the*

*Caribbean (Regional Development Plan 2017–2020)*. Berne: UPU, 2021.

<sup>3</sup> Integrated Skills. *Route optimisation for parcel and post – Swiss Post case study*. London: Integrated Skills, 2024.

## Emerging economies are at a disadvantage

The silo approach is compounded when postal operators in developing countries are excluded from national policy agendas.

Despite postal networks often being the most extensive public infrastructure in rural areas, they are rarely included in national broadband or digital inclusion plans.<sup>4</sup> They are similarly overlooked in climate planning, even though postal fleets and facilities could serve as testbeds for green technologies and circular economy models.<sup>5</sup>

This policy-level exclusion leads to missed opportunities to leverage existing postal infrastructure for scalable solutions to local challenges – from last-mile connectivity to disaster response – representing a massive untapped potential for sustainable development.

There are several root causes that lead to this fragmented approach. We explore four key causes in this policy brief.

### Root cause I: regulatory fragmentation

Traditional postal regulations focus on service obligations, speed and affordability, with little consideration for sustainability or digital innovation.

Different government departments oversee postal services, digital infrastructure and climate policy, creating bureaucratic silos that mirror operational ones.

This fragmentation in policymaking and governance structures makes it nearly impossible for postal operators to pursue integrated strategies, as they must navigate separate regulatory frameworks and compliance and reporting requirements for each aspect of their transformation efforts.

### Root cause II: financial constraints and alternative business priorities

Limited budgets force operators to choose between digital upgrades and green investments rather than pursuing integrated solutions.

In developing countries and emerging

<sup>4</sup> United States Postal Service Office of Inspector General. *21st Century Post Office: Aligning with the National Broadband Infrastructure Initiative* (Report DA-MA-12-002). Arlington VA: 2012.

economies, basic operational sustainability often takes precedence over transformative investments.

The financial pressure is exacerbated by the need to show immediate returns to stakeholders, which favours short-term, single-purpose investments over longer-term integrated transformation projects that might deliver greater combined value.

### Root cause III: skills and mindset gaps

Workforce development programmes typically focus on either digital skills or environmental management, not the intersection of both.

Leadership teams often lack the cross-functional expertise to envision and implement integrated strategies. This skills gap extends throughout organizations, where employees are trained to think in terms of their specific functional areas rather than understanding how digital and environmental objectives can reinforce each other.

The result is an organizational culture that perpetuates silos even when leadership recognizes the need for integration.

### Root cause IV: market pressures

Intense competition from tech-driven logistics companies forces reactive rather than strategic responses. And to further exacerbate this, the pressure for immediate returns discourages longer-term integrated transformative investments.

Postal operators find themselves in a defensive position, trying to match competitors' digital capabilities or meet environmental regulations, rather than proactively designing business models that leverage the synergies between digital and green transformations.

This reactive stance means missed opportunities to differentiate through integrated value propositions that neither pure-play digital companies nor traditional logistics providers can match.

So, what can postal operators, especially in emerging economies, do?

<sup>5</sup> The Energy and Resources Institute (TERI). *Facilitating Zero Emission Deliveries for Postal Services*. New Delhi: TERI, 2024.

### **Solution: a dual-returns approach to digitization**

True integration means designing every initiative to serve both digital advancement and environmental sustainability. This approach involves deploying technology with purpose, specifically choosing digital innovations for their ability to reduce environmental impact while improving service.

It also means using operational data and analytics to continuously optimize for both efficiency and emissions reduction, creating a virtuous cycle where better data leads to both better service and lower environmental impact.

Further, integration requires building sustainability considerations into every digital platform and service from inception, rather than trying to retrofit green features after the fact.

This translates into leveraging digital capabilities to enable new sustainable services like reverse logistics and sharing economy models, where the digital and environmental benefits are inseparable.

In an integrated approach, every investment decision considers both digital and environmental returns, every new service is designed to advance both agendas, and every performance metric reflects progress on both fronts.

### **Short-, medium- and long-term opportunities for the postal sector**

According to our research, and based on what is feasible right now in the postal sector, quick wins are available through:

- AI-powered route optimization that prioritizes emissions reduction while improving efficiency
- digital platforms that incentivize and facilitate sustainable delivery choices
- solar-powered post offices serving as community digital hubs
- blockchain-based carbon credit systems for postal operations

These quick wins can demonstrate the value of integration while building momentum for deeper transformation.

In the medium term, dual transformation can include:

- developing fully integrated logistics platforms that balance speed, cost and environmental impact in real time

- positioning postal networks as backbones for circular economy systems
- creating data marketplaces that monetize insights while driving sustainability
- establishing regional green corridors with shared digital infrastructure

These initiatives require more substantial investment and coordination but offer proportionally greater returns in both digital and environmental value.

In the longer term, dual transition needs vision, systemic strategies and investments. The transformation potential includes:

- carbon-negative postal networks powered by renewable energy and optimized by AI
- Posts serving as primary enablers of sustainable e-commerce and digital inclusion
- fully circular logistics systems with zero waste and maximum resource efficiency
- the global postal network serving as a model for integrated sustainable development

This vision is ambitious but achievable if the sector commits to breaking down silos and embracing integration as its core strategy.

### **Measuring success**

New metrics are needed to track progress beyond separate digital and environmental key performance indicators (KPIs).

Integration indicators should include the percentage of digital investments with quantified environmental benefits, revenue from services that combine digital and green value propositions, reduction in total cost through integrated versus separate initiatives, and community impact scores measuring both digital inclusion and environmental improvement.

Systemic metrics must track national inclusion of Posts in digital and climate strategies, cross-sector partnerships leveraging postal infrastructure, innovation indices measuring integrated solution development, and equity scores tracking twin disparity reduction.

These metrics should be standardized across the sector to enable benchmarking and knowledge sharing, while being flexible enough to accommodate different national contexts and development stages.

## Not just theory – global best practices

Several postal operators have already demonstrated what is possible when silos are broken down.

Swiss Post combines route optimization algorithms with carbon tracking, using real-time data to minimize emissions while maintaining service quality.<sup>6</sup> Its digital ID services are delivered through carbon-neutral post offices powered by renewable energy, showing how digital services and green infrastructure can reinforce each other.

Singapore Post integrates IoT sensors in electric delivery vehicles to optimize both battery usage and delivery efficiency, while its digital platforms facilitate circular economy services like electronics take-back programmes.<sup>7</sup> This integration extends to the Post's business model, where sustainable services generate new revenue streams rather than just adding costs.

Pos Malaysia uses data from its 400 solar-powered facilities to optimize energy usage across the network, while providing digital services to underserved communities through the same infrastructure.<sup>8</sup>

These examples from around the world show that by thinking holistically about infrastructure investments, postal operators, right now, can create facilities that serve multiple purposes: generating clean energy, reducing operational costs, providing community digital access points, and demonstrating climate resilience.

Posts are already demonstrating that integration is not just possible but profitable – creating competitive advantages while advancing both digital and environmental goals.

### Risk: emergence of a twin disparity

In the medium to long term, a failure to integrate digital and green strategies creates a new form of inequality: twin disparity.

This is likely to occur when rural and underserved regions lack both digital connectivity and climate-resilient infrastructure, creating a double disadvantage that is harder to overcome than either gap alone.

<sup>6</sup> Integrated Skills. Route optimisation for parcel and post – Swiss Post case study. London: Integrated Skills, 2024.

<sup>7</sup> Singapore Post. "SingPost Pilots Fully Electric Three-Wheelers, Deploys Electric Vans as Part of

Smaller postal operators cannot afford separate investments in digital and green technologies, meaning they fall behind on both fronts while better resourced competitors pull ahead with integrated solutions.

Communities most vulnerable to climate change are also excluded from digital economy opportunities, creating a vicious cycle where those who most need the benefits of both transitions are least able to access them.

Without integrated strategies, this disparity will deepen, leaving entire populations behind in both the digital economy and the transition to sustainability. The concentration of benefits in urban centres and wealthy nations while rural and developing areas face mounting challenges on both fronts threatens to create unprecedented inequality in access to economic opportunity and environmental security.

### From isolation to integration

The postal sector's future depends on breaking down the artificial barriers between digital and green transformations.

The current siloed approach not only limits the sector's potential but also perpetuates inequalities that threaten to leave millions behind in both the digital economy and the fight against climate change.

Integration is not merely an operational efficiency – it is a strategic imperative.

By designing every initiative to serve both digital advancement and environmental sustainability, postal operators can unlock synergies that make both transitions more achievable and impactful. The integrated approach transforms constraints into opportunities, where environmental requirements drive digital innovation and where digital capabilities enable unprecedented environmental performance.

The path forward requires coordinated action from policymakers, postal operators and international organizations. Most critically, it requires recognizing that in developing countries, postal networks represent untapped infrastructure that could leapfrog traditional

Green Plan to Replace Current Delivery Fleet." Media release, 16 August 2021.

<sup>8</sup> Pos Malaysia Berhad. *Sustainability Statement 2022: Sustainability for a Better Tomorrow*. Kuala Lumpur: Pos Malaysia, 2023.

development paths if properly integrated into national strategies.

The postal sector has always been about connection – connecting people, businesses and communities.

Now it needs to connect its own transformation efforts, breaking down silos to create integrated strategies that serve both people and planet. The cost of continued isolation is too high, and the opportunity for integrated transformation too valuable to miss.

The time for parallel tracks has passed. The future belongs to those who can integrate digital innovation with environmental sustainability, creating solutions that are not just efficient or green, but both – becoming something greater than the sum of their parts.

This integration represents not just the future of the postal sector, but a model for how traditional infrastructure can transform to meet the challenges of the 21st century while leaving no one behind.

### **Policy recommendations for governments**

*Integrate the postal network into the national socio-economic growth agenda*

Governments need to include Posts in national planning, recognizing postal operators as essential infrastructure in both digital inclusion and climate strategies.

This means mandating postal participation in national broadband deployment and green logistics planning, and leveraging postal networks for disaster resilience and climate adaptation programmes.

*Create integrated policy frameworks*

To support the twin-transition process, policymakers have to create integrated policy frameworks that merge postal sector considerations into both national digital strategies and climate action plans.

This requires establishing inter-ministerial coordination mechanisms linking postal, digital, environmental and development policies, breaking down the bureaucratic silos that mirror operational ones.

<sup>9</sup> OSCAR – the UPU's free Online Solution for Carbon Analysis and Reporting – provides postal operators with a secure, .POST-hosted platform to measure, benchmark and reduce greenhouse gas

Policies and regulations should incentivize integrated solutions rather than separate compliance measures, rewarding operators who design services that advance both digital and environmental objectives.

*Provide financial support to the twin-transition agenda*

The twin-transition agenda, much like the digitization or the sustainability transitions, requires substantive investment.

To incentivize a dual, integrated approach, financial support should be targeted specifically at projects that address both digital and green objectives, with tax incentives for integrated infrastructure investments such as solar-powered digital service points.

Governments should support public–private partnerships that leverage postal networks for combined digital–green initiatives, recognizing that the public value created by such integration justifies public investment.

### **Policy recommendations for postal operators**

*Restructure strategic functions to support a twin transition*

Postal operators need to fundamentally restructure for integration, either merging digital and sustainability teams or creating cross-functional innovation units that break down organizational silos.

Environmental criteria should be embedded in all digital investment decisions, with sustainability metrics included in digital project KPIs and vice versa.<sup>9</sup> This organizational transformation ought to extend to service development, where new offerings should inherently combine digital convenience with environmental benefits.

Operators should use digital platforms to make green options like consolidated delivery more attractive to customers, leveraging data analytics to identify and promote the most sustainable service options.

emissions in line with the GHG Protocol. Registration: <https://www.upu.int/en/Postal-Solutions/Technical-Solutions/Products/OSCAR>

### *Upskill human capacity to lead the twin-transition agenda*

Building integrated capabilities requires training the workforce in both digital and sustainability skills, recruiting leadership with cross-functional expertise, and partnering with technology providers who understand sustainability imperatives.

The transformation should be cultural as well as structural, creating an organizational mindset where every employee understands how their work can advance both digital and environmental goals.

### **Policy recommendations for international organizations**

#### *Promote knowledge exchange and peer learning*

International organizations can facilitate knowledge transfer by creating platforms for sharing integrated solution best practices and by developing common standards for measuring combined digital–environmental impact.

Support for South-South cooperation on integrated transformation approaches can help operators in developing countries learn from peers facing similar challenges rather than trying to replicate models from very different contexts.

#### *Create a “twin-transition accelerator”*

Under a multi-stakeholder framework, a twin-transition accelerator could be launched to fund integrated pilot projects that demonstrate the value of breaking down silos.

To further assist all stakeholders in the value chain, technical assistance projects can be undertaken to address both digital and green capabilities in an integrated manner, while regulatory sandboxes allow for testing of integrated service innovations without the constraints of existing fragmented regulations.

International organizations should also address systemic barriers by working with development banks to create financing instruments specifically designed for integrated projects, advocating for postal inclusion in global digital and climate initiatives, and supporting smaller operators in accessing the technology and expertise needed for integrated solutions.

### **Information and disclaimers**

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