

**ITU Regional Regulatory Forum for Europe
Regulation supporting the Digital Transformation
November 30, 2020**

Session 2: Unlocking investments in broadband networks in Europe

Unlocking Investments in Broadband Networks: the World Bank Experience

Juan Navas-Sabater, Lead Digital Development Specialist, Digital Development Global Practice, World Bank

Outline of presentation

1. Broadband as a cornerstone of COVID-19 response
2. Innovative business models to encourage investment in broadband
3. Regulatory approaches and broadband mapping as key tools to facilitate investments
4. Selected World Bank examples

In times of crisis, digital clearly appears as a hidden hero...

BUSINESS INSIDER

South Korea is relying on technology to contain COVID-19, including measures that would break privacy laws in the US — and so far, it's working

Aaron Holmes May 2, 2020, 8:30 AM



The Washington Post

1.5 billion children around globe affected by school closure. What countries are doing to keep kids learning during pandemic.

"Education is the best quality of our life."



Vodafone reports 50% rise in internet use as more people work from home

Coronavirus places greater demand on network in Europe as families stay indoors


- [Coronavirus - latest updates](#)
- [See all our coronavirus coverage](#)



CNBC

How coronavirus accelerated the rise of telemedicine

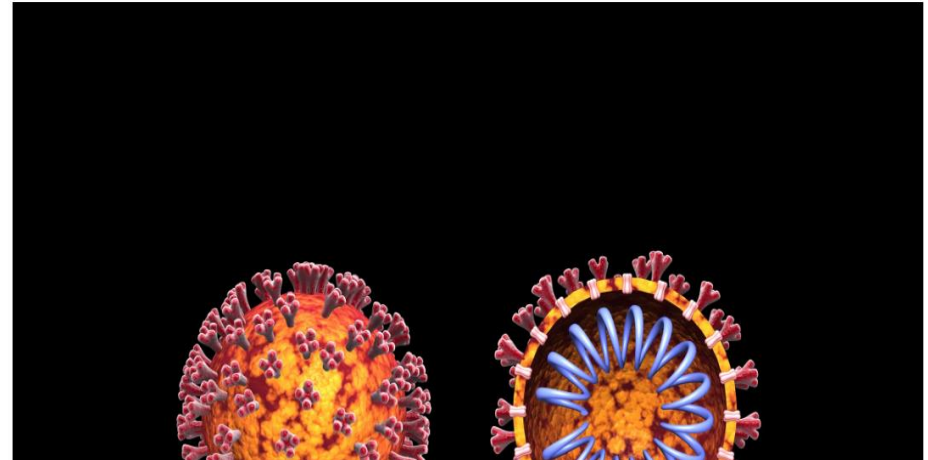
Natalie Zhang @NAT_ZHANG



WIRED

AI Can Help Scientists Find a Covid-19 Vaccine

Artificial intelligence has already played a vital role in the outbreak since day 1—a reminder for the first time it can be a tool for good.

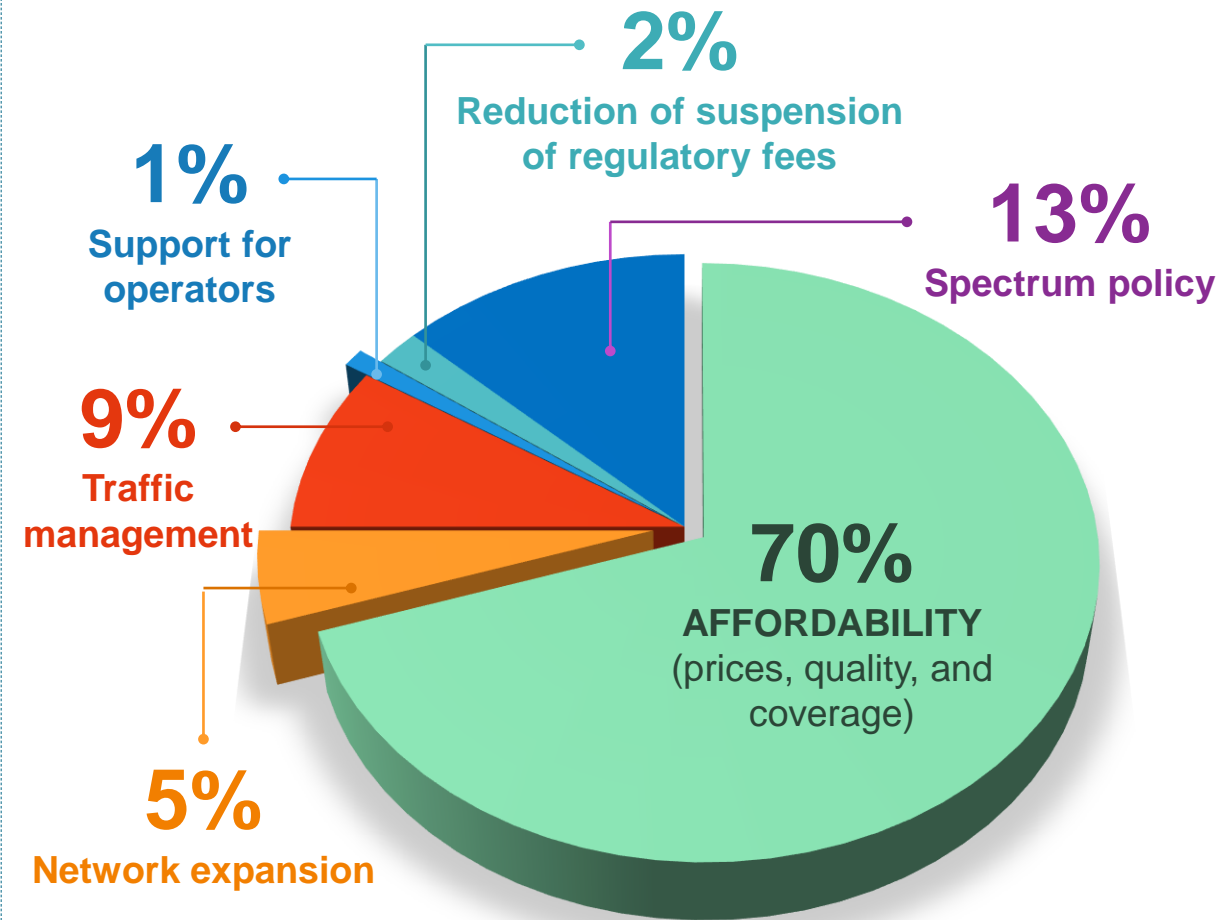


QUARTZ AFRICA

One of Africa's smallest economies is plugging social welfare gaps with digital cash transfers

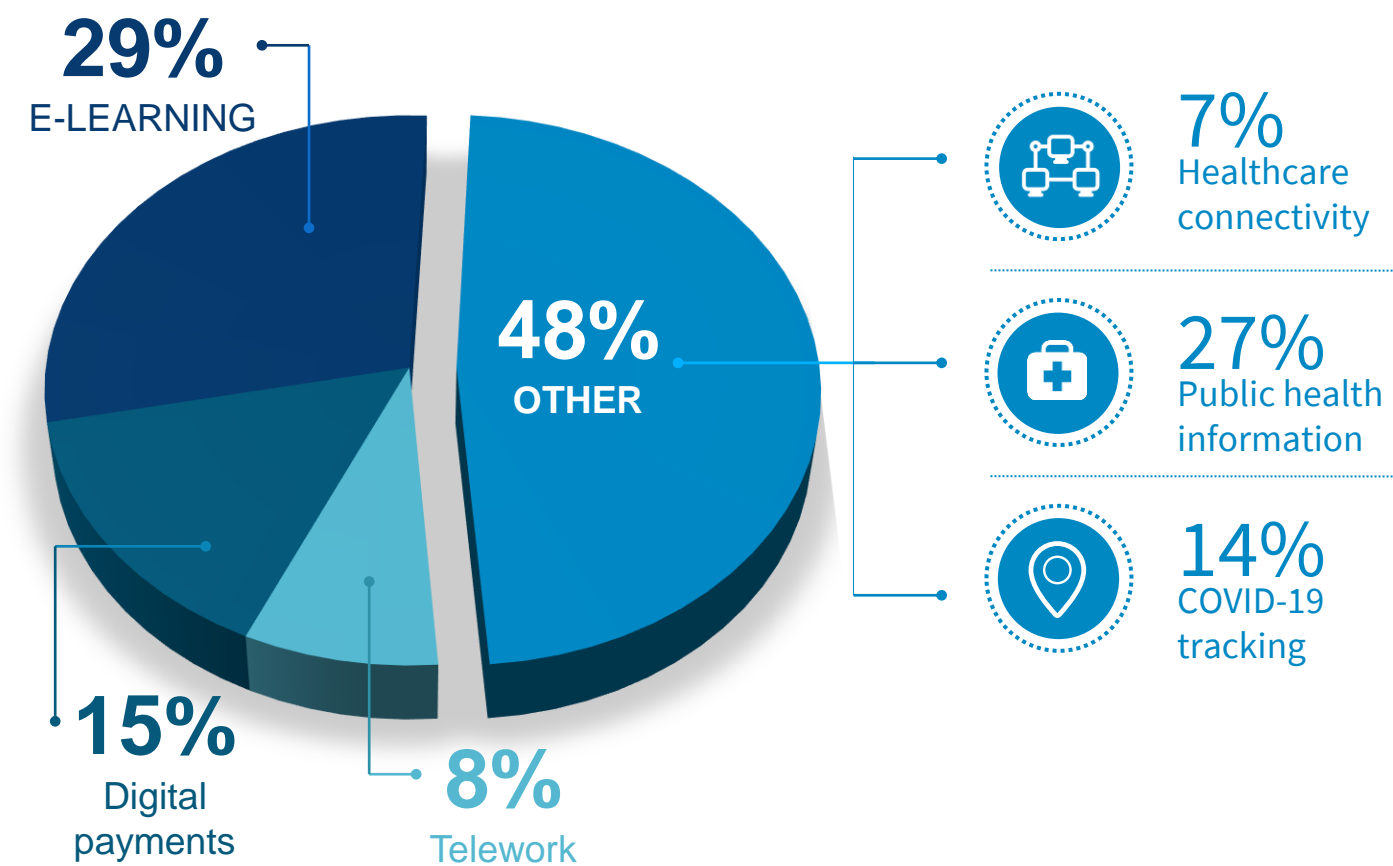
... and governments and industry have reacted accordingly

DIGITAL INFRASTRUCTURE



- ✓ Increasing bandwidth, strengthening resilience and security of networks, and managing congestion
- ✓ Affordability

DIGITAL SERVICES



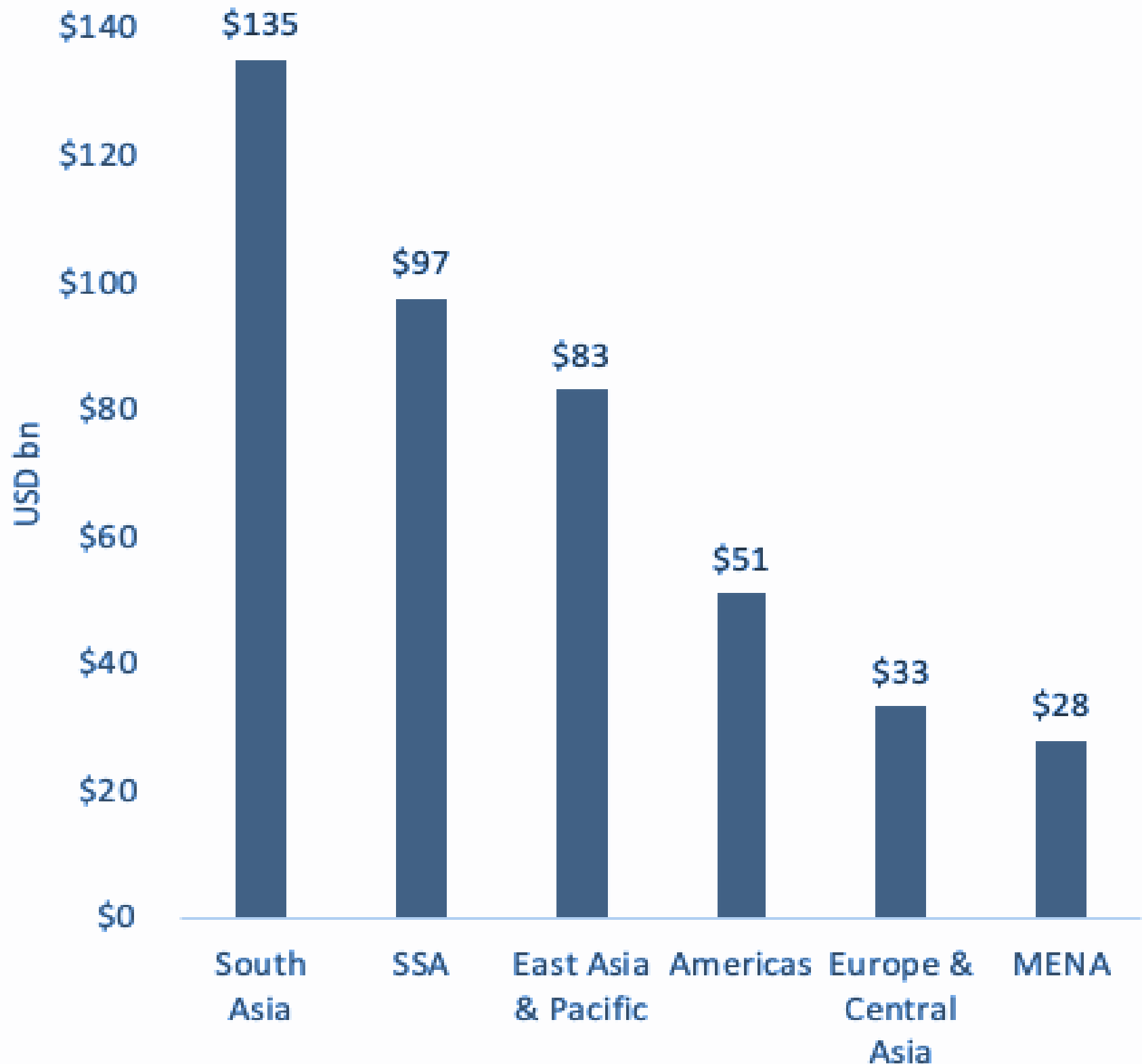
- ✓ Connecting vital services and ensuring the continuity of public services to safeguard the welfare of populations
- ✓ Powering FinTech and digital business models to support the most impacted businesses and communities
- ✓ Promoting trust, security and safety online
- ✓ Leveraging the power of mobile big data



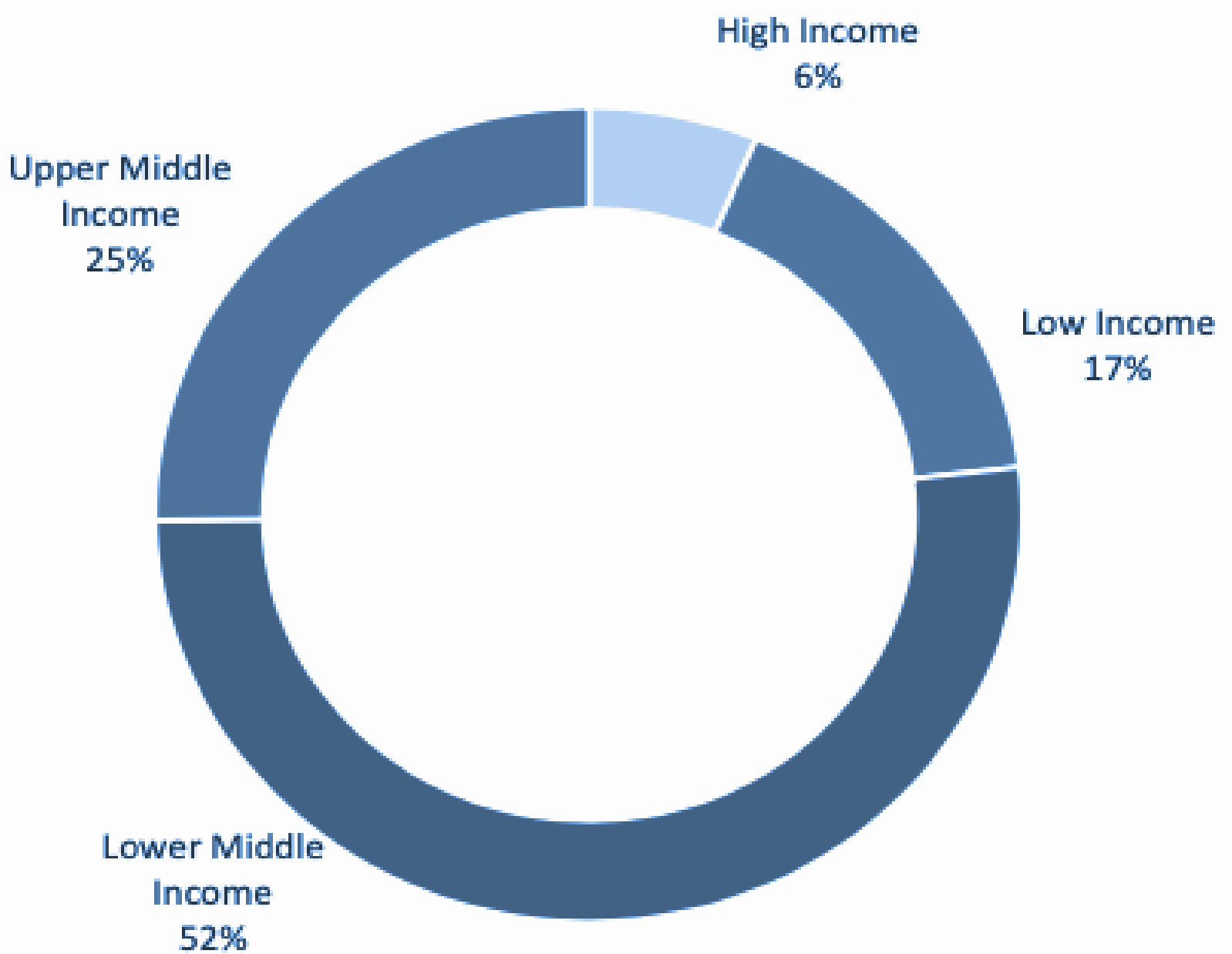
Source: World Bank, Digital Development COVID responses database

But significant investment challenges remain to bridge the global broadband digital divide

Connecting Humanity to Broadband – Investment Requirements by Region

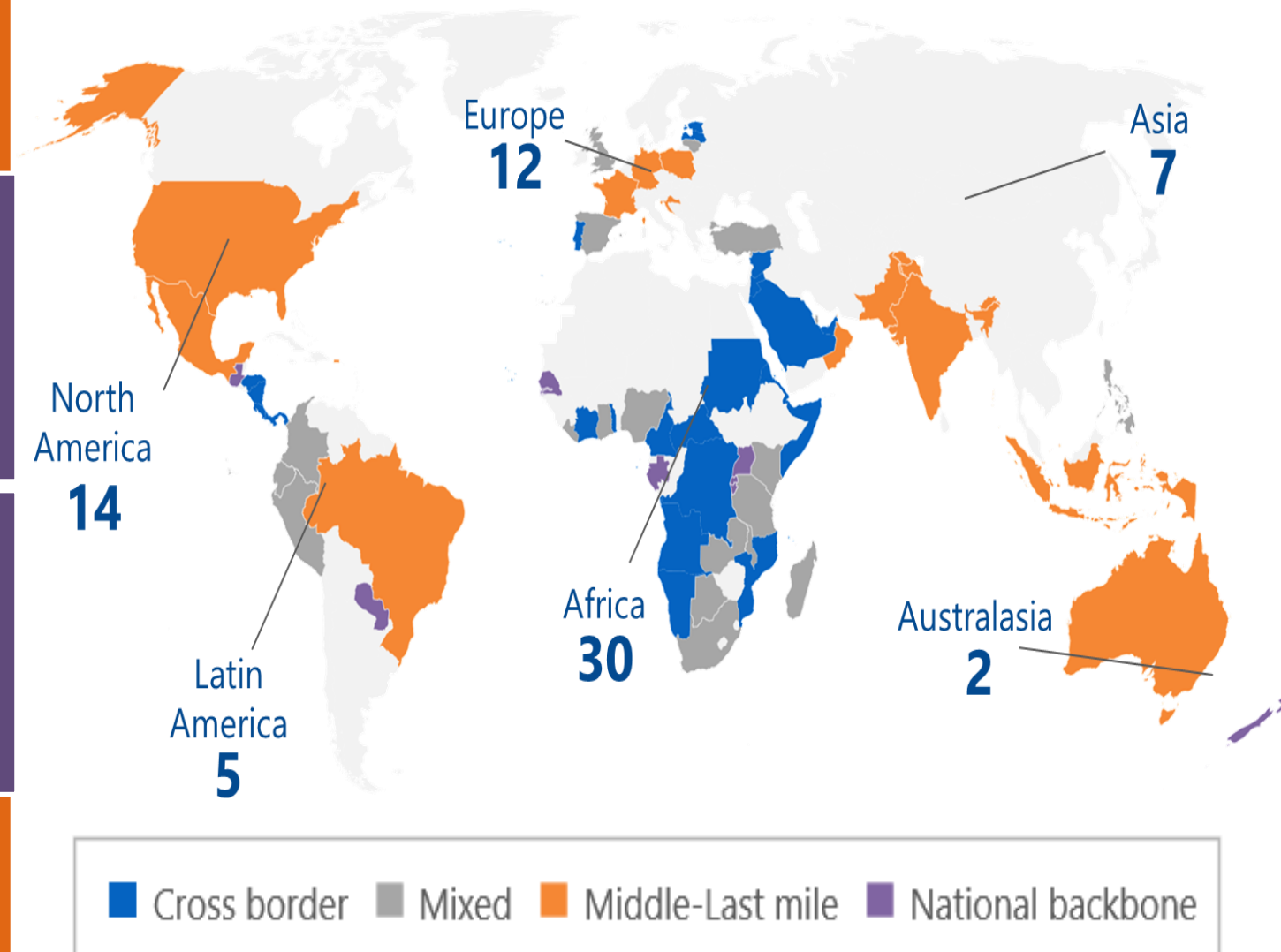
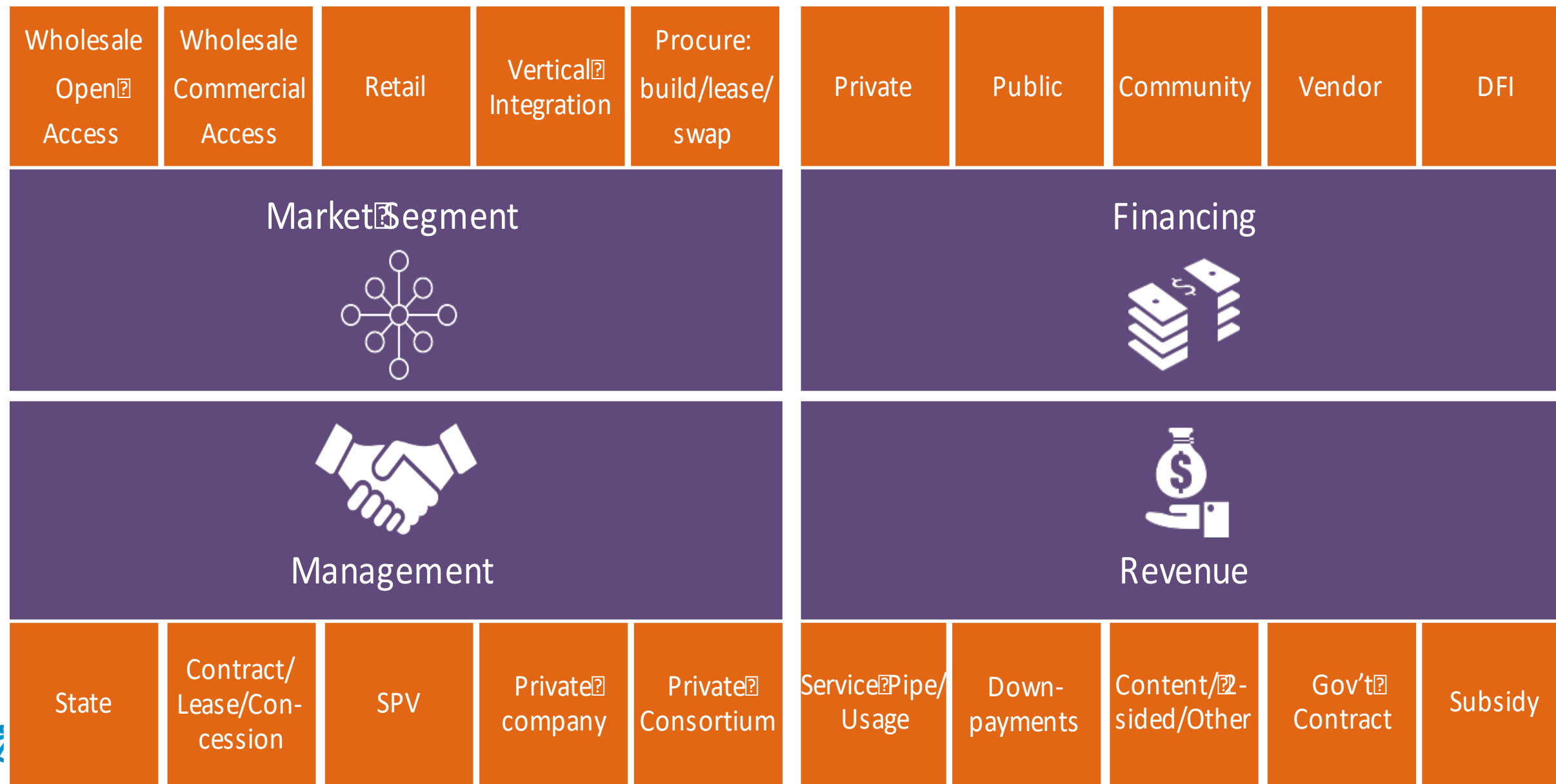


Connecting Humanity to Broadband – Investment Requirements by Country Income Group



Multiple innovative business models have emerged to encourage investments

Recent World Bank report analysed 70 individual cases and categorized them according to multiple parameters (online training available)



Key conclusion: Sector reforms are essential to unlock private investments

Private Sector Participation

Government intervention in infrastructure deployment should involve the private sector wherever possible. Advantages include cost and risk sharing, expertise, financial insight. Even where government intervention is indirect, private sector input should be considered.



Dealing with the traditional incumbent

In the presence of state-owned incumbents, structural changes should be considered as part of an overall national plan. If the state-owned incumbent is part of the solution, then it is quite likely that some sort of repositioning will be necessary.



Utility collaboration

In many cases, there is existing or planned utility infrastructure that telecommunications policy-makers have not considered or are not aware of when developing national broadband expansion plans.

State utilities have valuable assets, such as ducts and poles, buildings, land rights, and even fiber networks (such as SCADA) that could be leveraged for cost-effective deployment of the new infrastructure.

Joint projects are feasible – single civil works initiatives that include deployment of telecommunications networks and other utility networks.

The overlap extends nationwide through, for example, the electricity transmission networks.



Realistic business case and socio-economic benefit

Justification should be based on realistic business case and socio-economic cost-benefit analysis with a view to local, national and regional trends in the future. Economic net present value should be calculated, and the initiative reconsidered or abandoned if not positive.



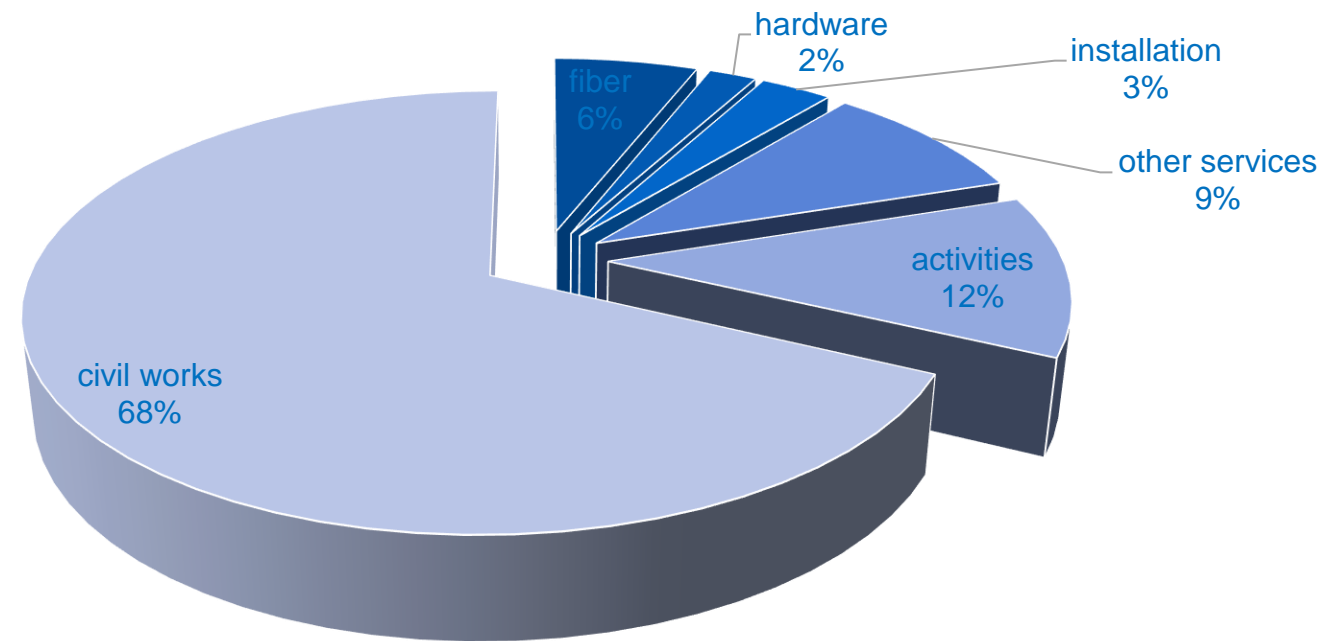
One business model failure can lead to another's success

The history of telecommunications infrastructure is filled with examples of overbuild, underutilization and failed commercial endeavors of all sorts. Long-lived assets can often be repurposed, commercialized or otherwise brought back into productive use. **Policy-makers can act to reduce the time assets lay idle by (re)commercializing and reducing barriers to cross-sectoral acquisition.**



Cost savings from infrastructure sharing are significant...

Fiber Network Cost Structure

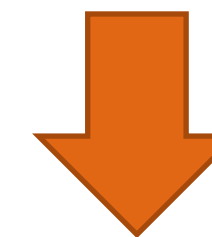


- ✓ 29–58% cost savings by using passive infrastructure sharing (Analysys Mason)
- ✓ 57–67% cost saving by reusing existing ducts where possible (OFCOM/CSMG)
- ✓ 75% cost savings for duct sharing in deployments that would otherwise require digging (EC impact assessment)
- ✓ 16–35% cost savings in mobile network infrastructure-sharing arrangements that are in place in various European markets (BEREC)

	US	Ireland	Norway	Italy	New Zealand	Basel, Switzerland	Bavaria, Germany	Denmark
Utility			36-utility partnership					14-utility partnership
Fiber Venture	EPB Fiber	SIRO	Altibox	Open Fiber	Northpower Fiber	IWB Net	M-Net	WAOO
Trigger for FTTx	<ul style="list-style-type: none"> ■ Business diversification ■ Public funding 	<ul style="list-style-type: none"> ■ Market opportunity ■ National policy 	<ul style="list-style-type: none"> ■ Business diversification 	<ul style="list-style-type: none"> ■ National policy ■ Public funding 	<ul style="list-style-type: none"> ■ National policy ■ Public funding 	<ul style="list-style-type: none"> ■ National policy ■ Market opportunity 	<ul style="list-style-type: none"> ■ Business diversification 	<ul style="list-style-type: none"> ■ Business diversification
Business model	<ul style="list-style-type: none"> ■ Retail 	<ul style="list-style-type: none"> ■ Wholesale 	<ul style="list-style-type: none"> ■ Retail 	<ul style="list-style-type: none"> ■ Wholesale 	<ul style="list-style-type: none"> ■ Wholesale 	<ul style="list-style-type: none"> ■ Wholesale ■ Retail (B2B) 	<ul style="list-style-type: none"> ■ Retail ■ Wholesale 	<ul style="list-style-type: none"> ■ Retail

EU Broadband Cost Reduction Directive 2014/61

- Access to infrastructure
- Coordination of civil works
- Streamlining permit granting
- In building infrastructure



Single Information Point

Ensures adequate transparency on existing and planned network infrastructure

... and broadband mapping emerges as an essential tool to attract investment

Broadband Mapping Objectives

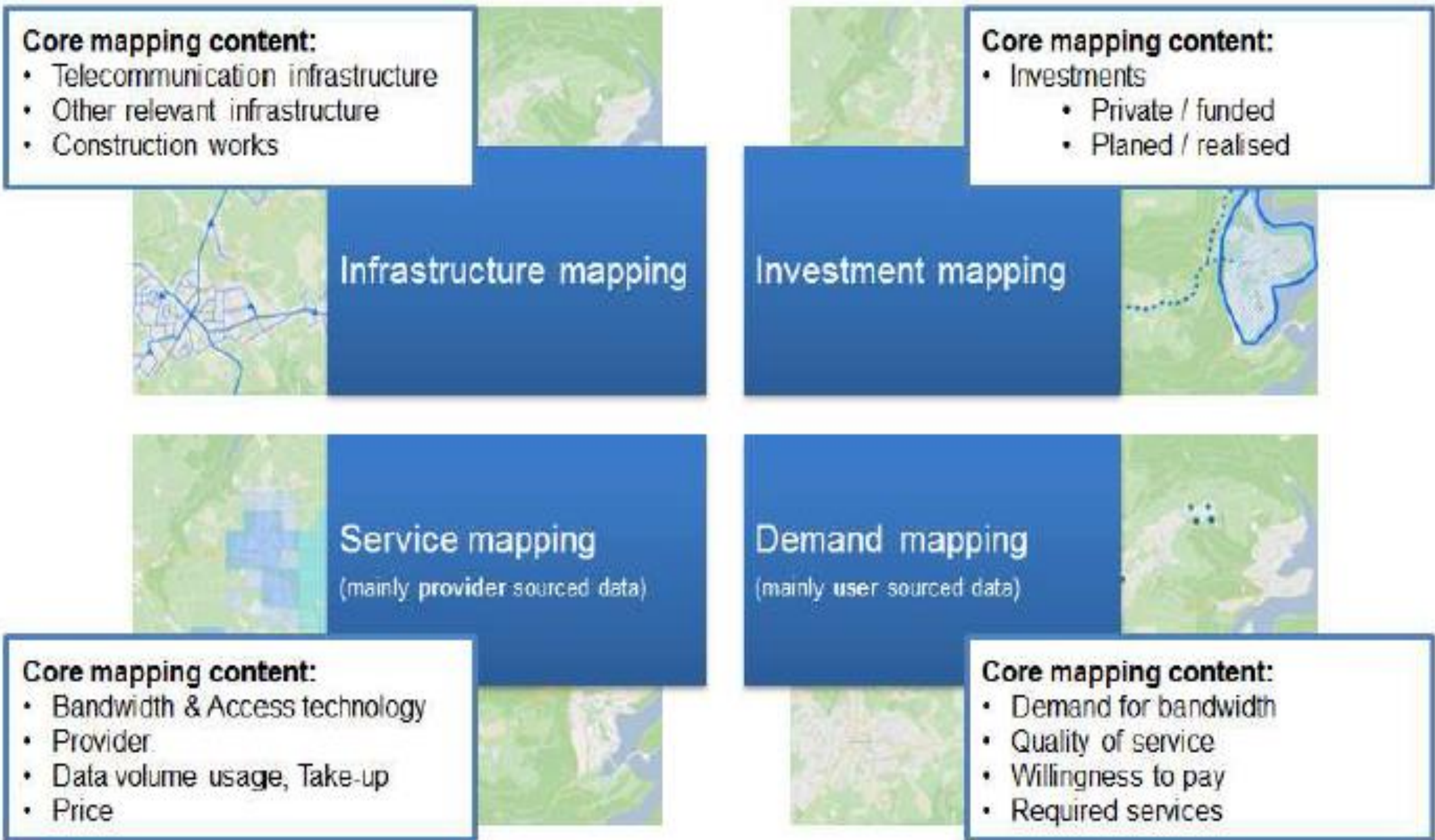
(1) To **create insight** into the current state of broadband availability

(2) To **coordinate** broadband **deployment** measures

(3) To **reduce costs** of broadband deployment



Categories of Broadband Mapping



Multiple stakeholders benefit from a broadband mapping initiative

		Stakeholders			
		Public Sector (including NRA)	Telecom Operators	Alternative Infrastructure Owners	Consumers
Objectives	Insight into availability of broadband	-Monitoring progress on universal access -Network expansion obligations -Other M&E	-Identifying new markets	-NA	-Identifying closest networks -Civil society coordination for demand aggregation
	Coordinate broadband deployment measures	-Faster network deployment to extend access to the unconnected -Increased competition	-Easier and more reliable Investment planning	-Alternative revenue source	-Quicker expansion of broadband networks to consumers in unconnected areas
	Reduce cost of broadband network deployment	-Faster network deployment -Increased affordability of services (increasing adoption)	-Reduced cost and time of network deployment -Quicker expansion to new markets	-Alternative revenue source	-Reduced price of broadband services -Increased access to broadband

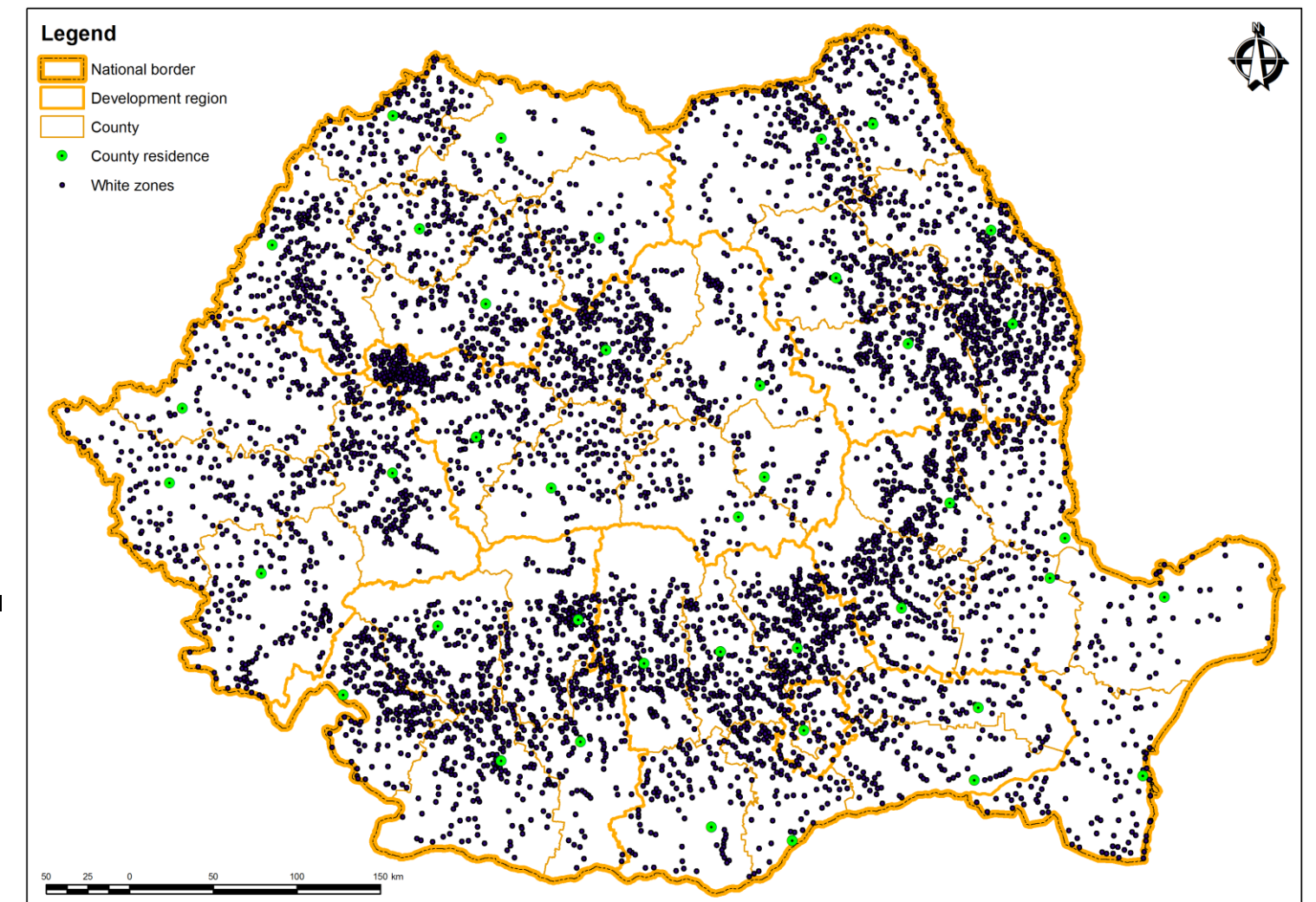
World Bank examples: Romania demand mapping exercise to inform state intervention

Romanian MIS provided the list of 'white' and 'grey' areas, at the national level, and asked support from the World Bank with **identification on where and how to intervene** in the 2015-2020 period.

Given the four types of broadband mapping (infrastructure, service, demand and funding), WB considered that a **demand mapping** in correlation with public funding opportunities is the most appropriate for determining a **typology of undersupplied areas and the suitable models** of intervention in Romania.

The demand mapping exercise had **two objectives:**

- Identification of a typology of 'white' and 'grey' areas from Romania based on socio-economic and demographic indicators used as a proxy for the potential demand for broadband services;
- Identification of suitable models of publicly-funded intervention for the prevalent types of 'white' and 'grey' areas from Romania.



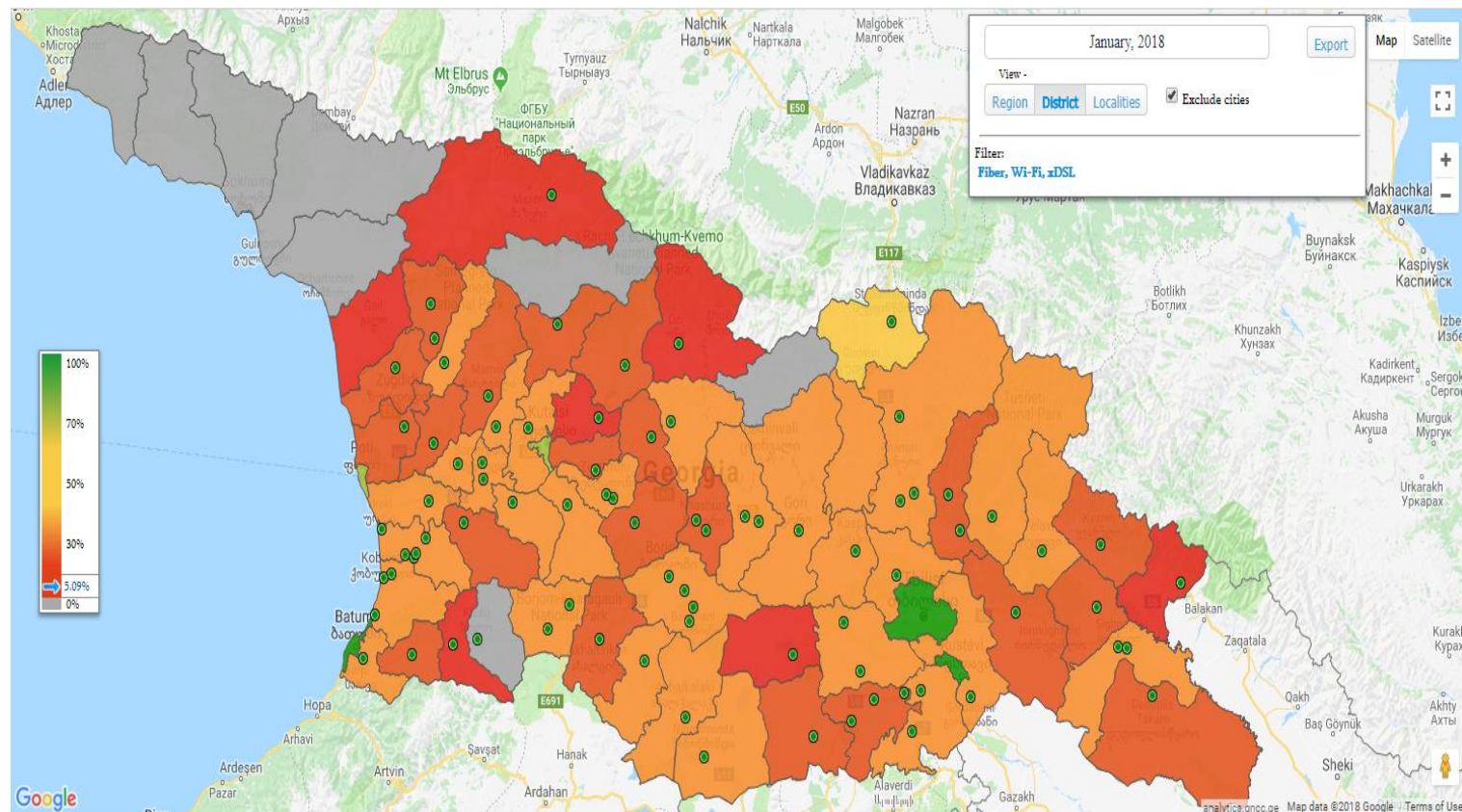
EU4Digital Initiative in the Eastern Partnership countries



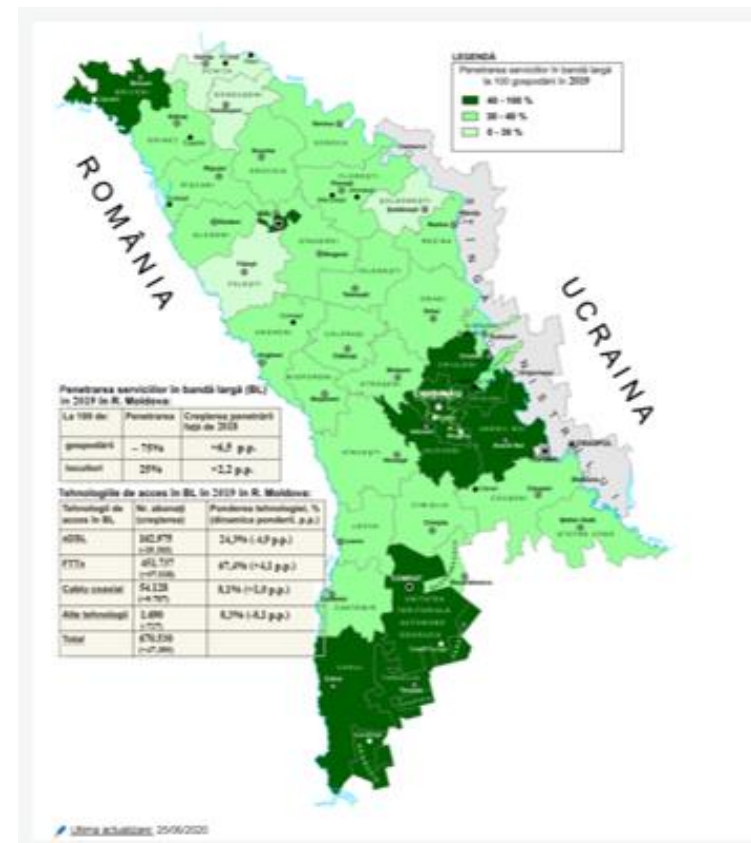
- **With EU funding, WB is working with EaP countries to define or update their broadband strategies** to provide the policy lever to develop broadband markets
- **Transposition of EU Directive 61** to facilitate cost reduction of network deployment is a core legislation being addressed through the program
- WB with UKE (Poland) is advising on legal, institutional and technical requirements to **implement broadband mapping**, including single information point
- In parallel, WB is financing **Log-In Georgia Project** (US\$ 40 M IBRD + \$40M Government) to expand access to broadband in 1000 villages



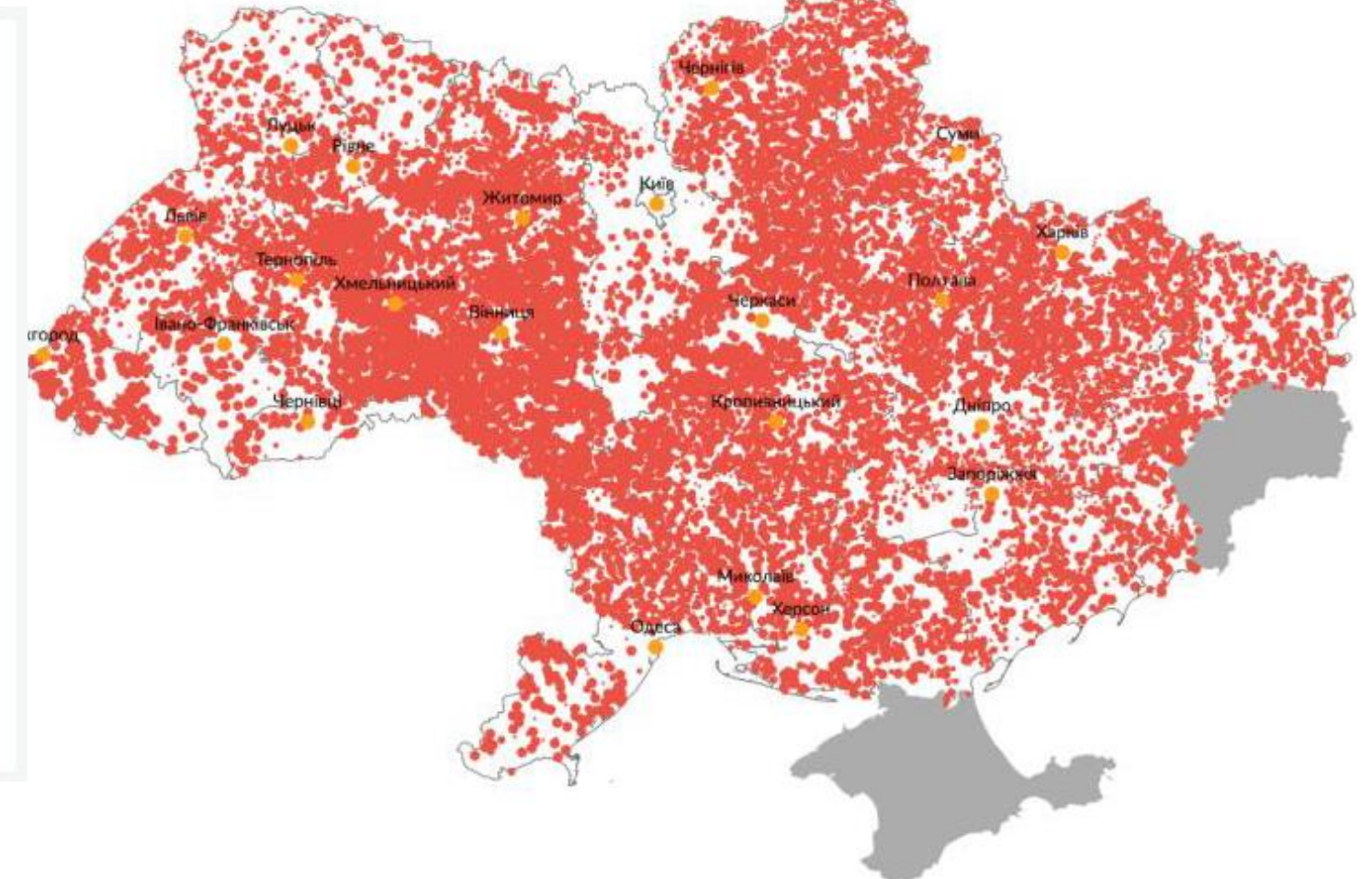
Georgia: Fixed Broadband (+WiFi) Penetration by District (excluding cities)



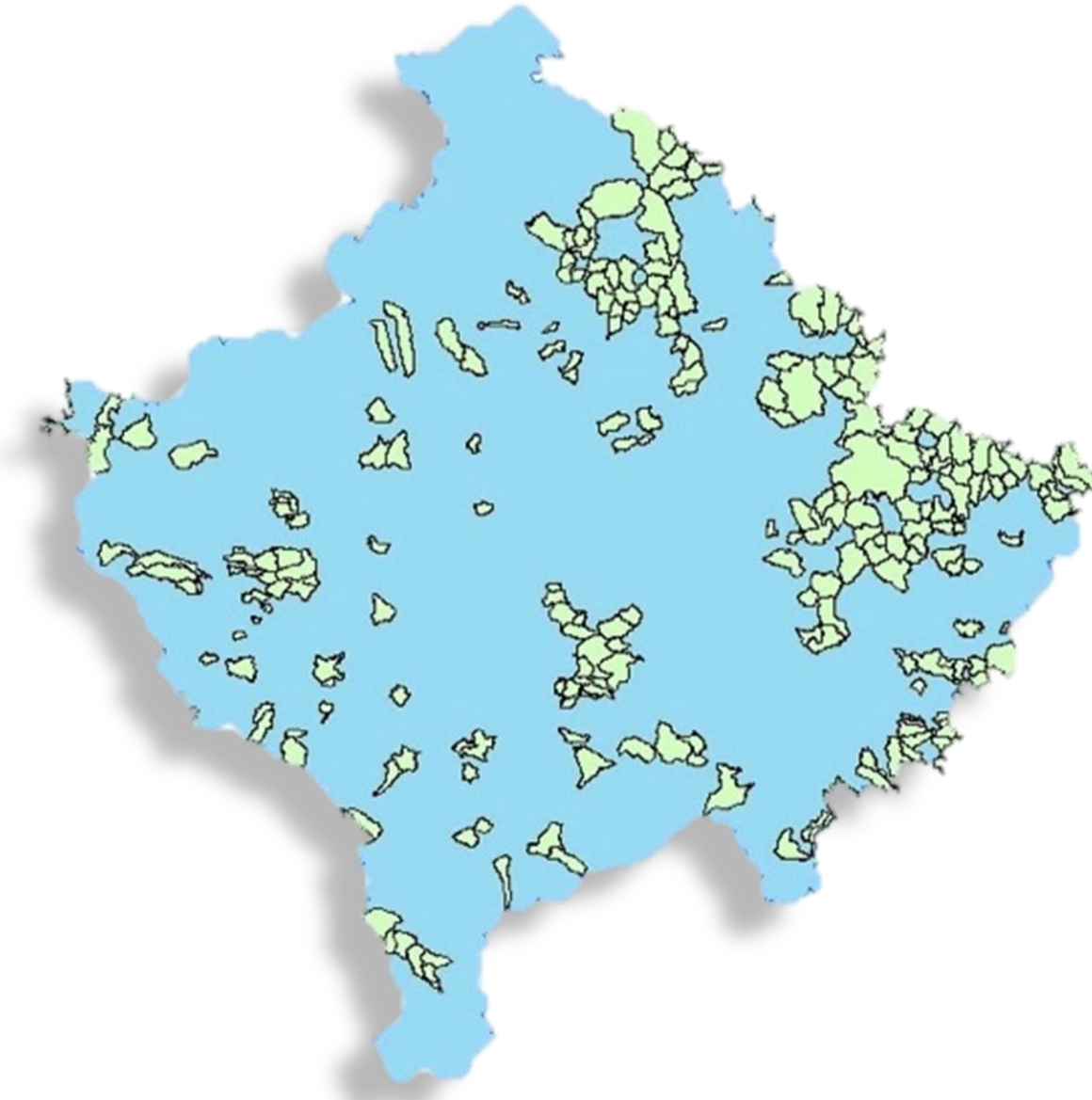
Moldova: Fixed Broadband



Ukraine: Fixed Broadband



The Balkans Digital Highway Initiative and Kosovo Digital Economy (KODE) Project



FOSTERING INFRASTRUCTURE SHARING IN THE WESTERN BALKANS:
Balkans Digital Highway Pre-feasibility Studies

SUMMARY

PPIAF
Public-Private Infrastructure Advisory Facility

WORLD BANK GROUP
Digital Development



Objective: Improve access to better quality and high-speed broadband services in Project areas and to online knowledge sources, services and labor markets among citizens, and public and academic institutions.

Financing: \$25M IDA credit



Thank you!

Juan Navas-Sabater, Lead Digital Development Specialist, Digital Development Global Practice, World Bank