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Dissecting the Cost of Peering

Global evidence from IXP data — an Asia-Pacific lens

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Dissecting the cost of peering: Global evidence from internet exchange points (IXPs)

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ABSTRACT

Internet Exchange Points (IXPs) are critical Internet infrastructures that facilitate local traffic exchange between Internet Service Providers (ISPs) through various peering arrangements. We posit that peering can significantly impact telecommunications costs and market outcomes. This paper examines the economic costs associated with peering compared to IP Transit services and analyzes their downstream effects on telecommunications markets globally. Using a compre-

https://www.sciencedirect.com/science/article/pii/S0308596126001035

Peering is far cheaper than transit — and much of Asia-Pacific has the most to gain

01

Cheaper

Peering at an IXP costs a tiny fraction of buying IP transit — by 70–800× across the regions and years we studied.

02

Better markets

Larger peering savings track lower broadband prices, wider mobile coverage and higher telecom revenue.



03

Greatest in lower-income markets

Effects concentrate in low- & middle-income and moderately-regulated economies — much of South & Southeast Asia.

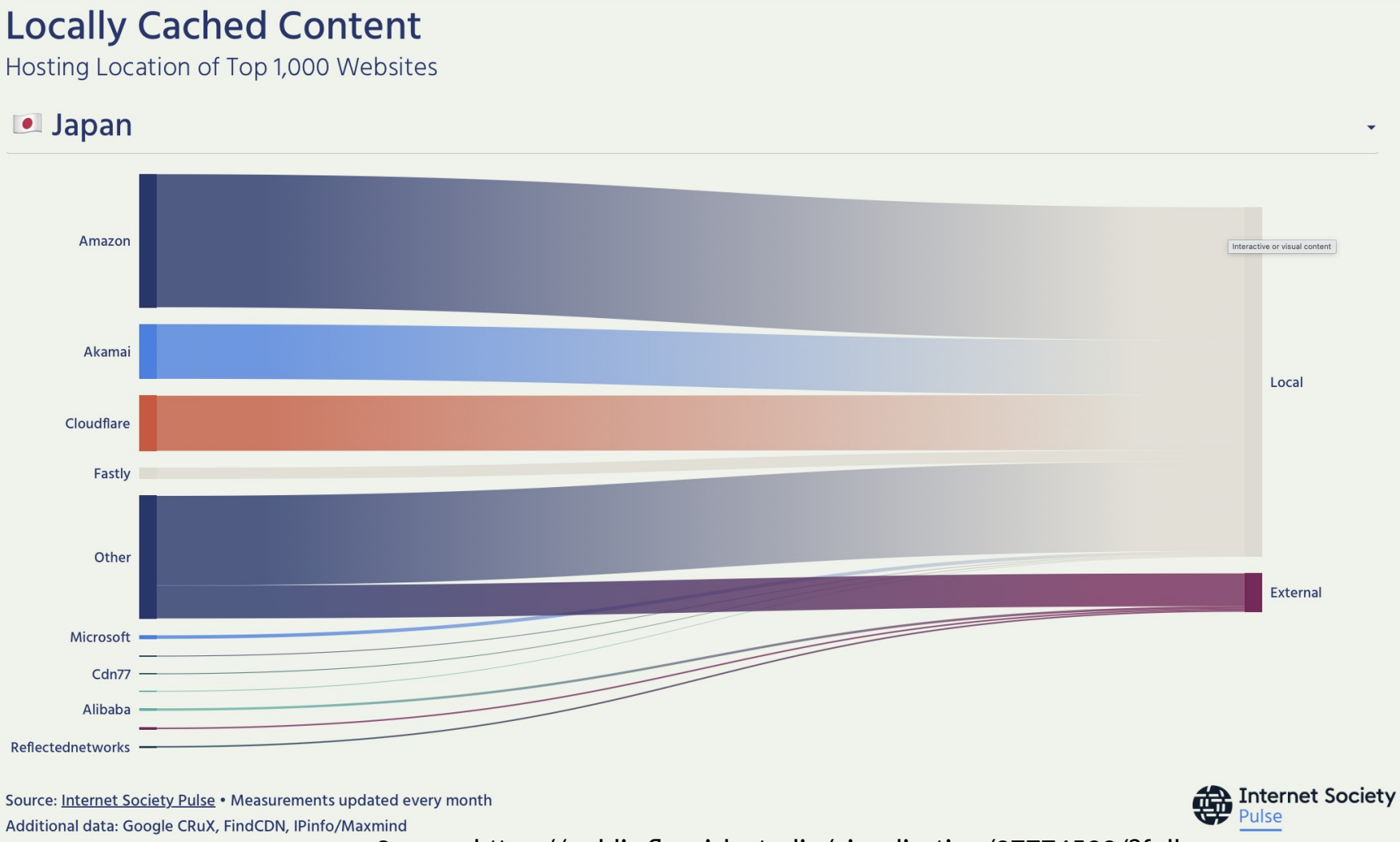


04

Intensity matters

It is not just having an IXP — how many local networks actually peer is what unlocks the gains.

Where is APAC/Japan getting its content from?



Source: https://public.flourish.studio/visualisation/27774599/?full

Asia-Pacific is where peering pays off most

The region combines high international-transit dependence with uneven local interconnection — the precise conditions under which our evidence shows the biggest gains.

Costly international links

Asia averages $21.09/Mbps transit vs $0.075 peering — over 3× Europe's transit price. The gap is largest where transit is priciest.

Traffic still leaves the region

Poor local interconnection sends domestic traffic offshore and back, adding cost and latency for every user.

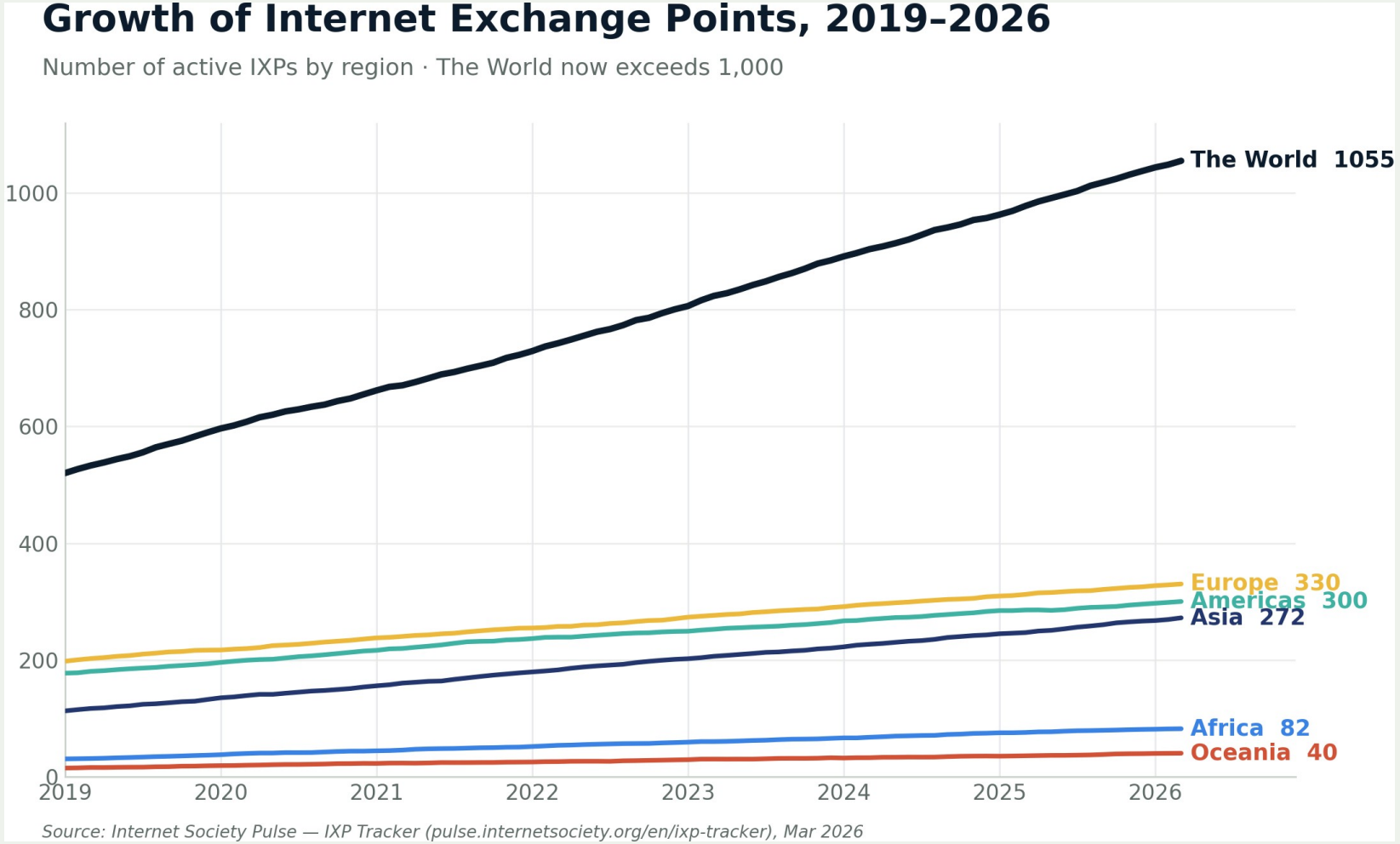
Resilience under stress

Local exchange means fewer single points of failure when a cable cut, typhoon or earthquake hits.

Fast-growing, mobile-first markets

Cheaper delivery expands mobile coverage and pulls new users online — strongest in the region's LMICs.

IXPs have grown — and Asia is closing the gap



Is peering cheaper — and does it help?

RQ1 What are the economic (cost / savings) benefits of peering?

RQ2 What is the difference in $ of peering vs IP transit for a given Mbps?



Peering prices

peering.exposed — the only global source of IXP port pricing (~150 IXPs, crowdsourced since 2017).



Transit prices

Telegeography IP Transit Pricing Suite — carrier quotes by city, port & CDR.



Operator survey

Anonymous June 2026 survey of 27 operators — the full cost of peering beyond port fees.



Outcomes & controls

ITU, Pulse IRI, PCH, Inclusive Internet Index, World Bank — prices, coverage, revenue, resilience.

Data sources: what went in

No comprehensive cost database exists — so we integrated these sources into one city / country × year panel.

Indicator	Data source	Frequency	Unit
Cost of transit	Telegeography IP Transit Pricing	Quarterly (2006–2024)	ISP-level
Recurring cost of peering	peering.exposed	Static (2018–2024)	IXP-level
Traffic volumes	PCH average traffic data	Static (2016–2024)	IXP-level
Peering intensity & participants	ISOC Pulse IXP Tracker	Annual (2018–2024)	Country
Content localization	ISOC Content Locality Tracker	Annual (2018–2024)	Country
Internet resilience indicators	ISOC Pulse (IRI)	Annual (2019–2023)	Country
Internet inclusivity index	Meta–Economist raw indicators	2018–2022	Country
Internet-related indicators	ITU Data Hub	2018–2023	Country

THE OPERATOR SURVEY · JUNE 2026

What operators told us about cost

PORT FEES

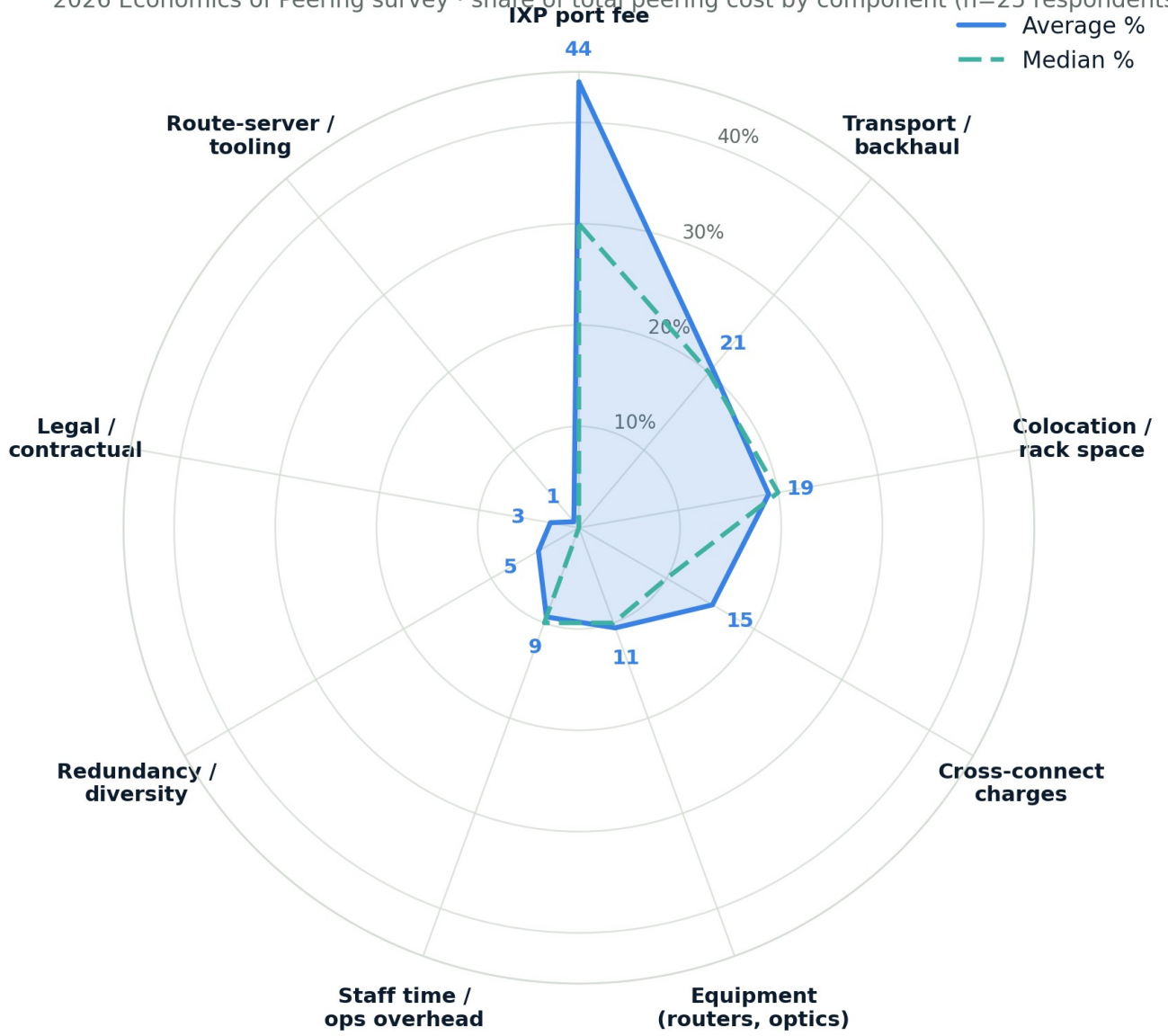
44%

of total peering cost is the monthly port fee, on average (30% at the median).

- 40% say the port fees is at least half their spend
- Next: transport / backhaul, colocation, cross-connects
- Other costs are marginal

What makes up the cost of peering?

2026 Economics of Peering survey · share of total peering cost by component (n=25 respondents)



IXP port fee dominates (avg 44% / median 30%); transport, colocation & cross-connects are the next tier. Source: Internet Society, 2026

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Making transit & peering comparable

STEP 1

Harmonize prices

Amortize transit non-recurring costs over 3 years; convert peering.exposed to $/Mbps/month; match at port level (10G & 100G) per country.

STEP 2

Add capacity & bandwidth

Combine with IP bandwidth (Telegeography) and peering bandwidth (PCH) for each city-year.

STEP 3

Join country indicators

Merge Internet-related indicators (ITU) at the country–year level.

STEP 4

Fill sparse cells

Quotes aren’t available every city-year, so forward / backward fill with the most recent value.

Key assumption: an ISP can reach the same destination via both peering and IP transit, assuming no loss in latency — so the price difference is a like-for-like saving.

Peering intensity — and why networks peer

Peering intensity

How much peering?

The ratio of IXP participants (or customers of members) to the number of active ASNs seen in a country.

Reason A — keep traffic local

We observe more peering intensity when more traffic is local: how much of the traffic to a country's Top-1000 websites is domestic vs routed internationally.

Reason B — reduce costs

We observe more peering intensity when peering is cheaper than IP transit. IXP port pricing typically accounts for 30–50% of total peering cost.

METHODOLOGY · THE MODEL

How we computed cost savings

Unit saving = **IP transit cost** $/Mbps/month − **Peering cost** $/Mbps/month

If unit saving > 0, peering is cheaper than transit; if < 0, peering is more expensive.

TWO-STAGE ESTIMATION

Stage 1 — predict

Predict peering intensity / savings from peering traffic, bandwidth capacity & broadband market share.

Stage 2 — relate

Use PREDICTED values in outcome regressions: broadband price, coverage, revenue, ARPU.

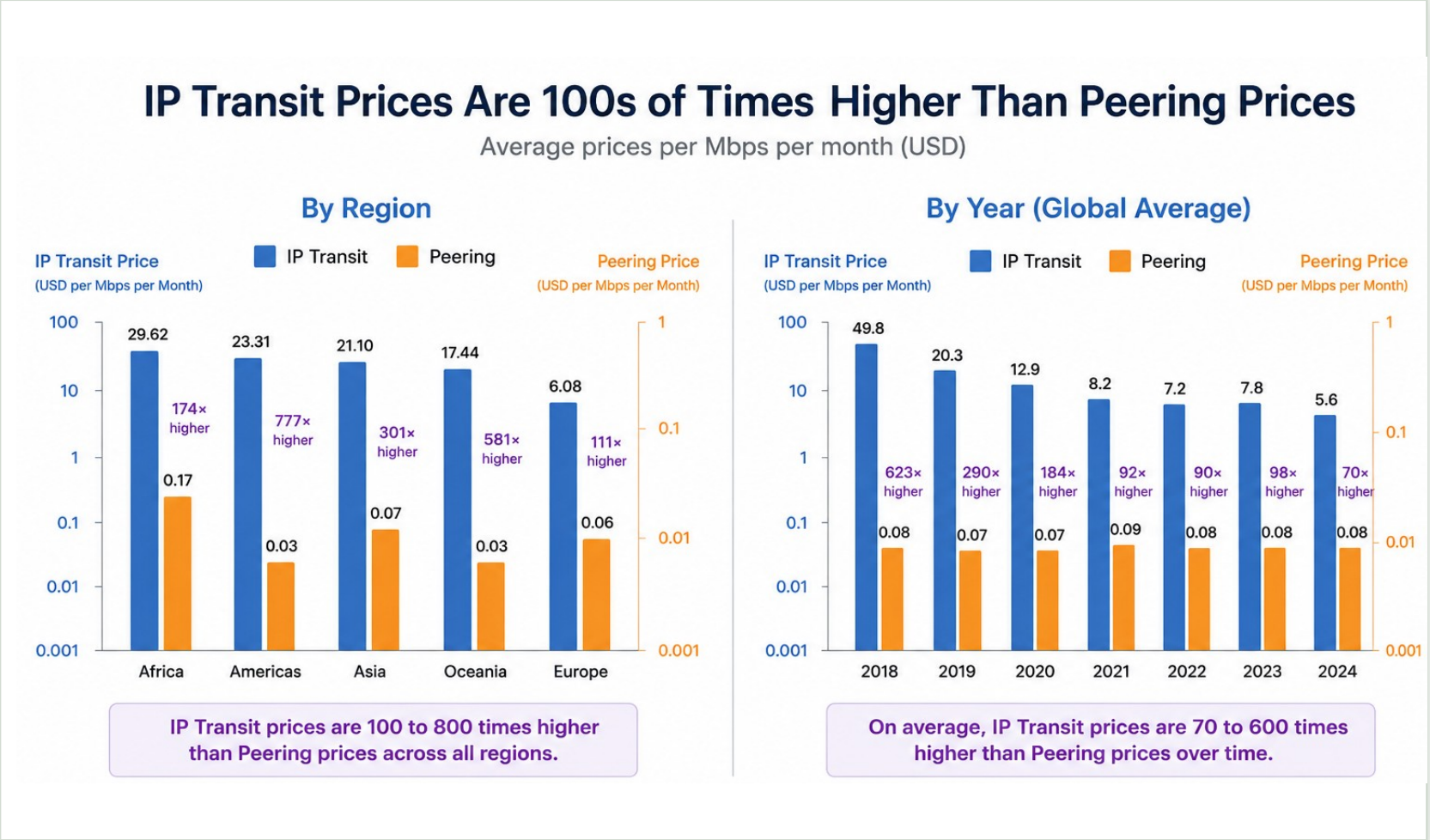
Controls

Market structure (HHI), broadband policy & year effects held constant.

Read the 95% CI

Coefficient plots: if the interval clears zero, the association is statistically significant.

IP transit is 100s of times higher than peering



$18.27

avg IP transit / Mbps / month

$0.054

avg peering / Mbps / month

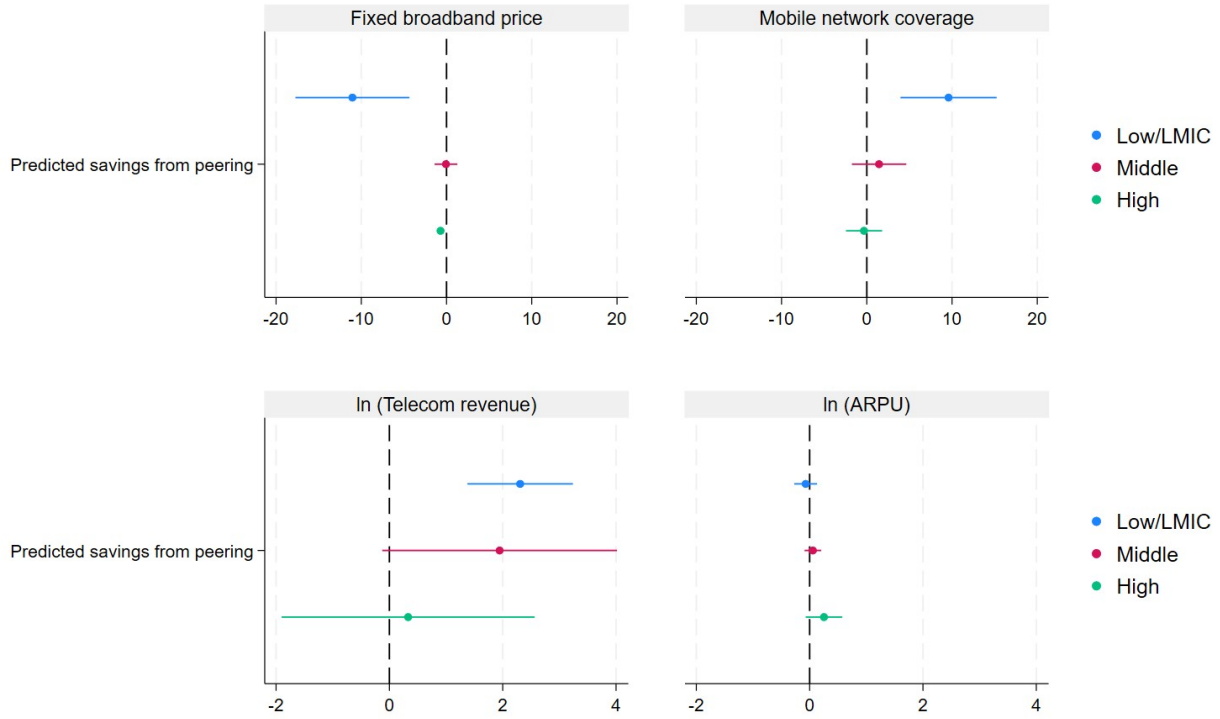
70–800× higher across regions & years

The cost gap in your region

Panel averages from the study. Asia and Oceania pay well above European transit prices — so the saving per megabit is larger here.

Region	IP transit $/Mbps/mo	Peering $/Mbps/mo	Multiple
Asia	$21.09	$0.075	~280×
Oceania	$17.44	$0.033	~530×
Africa	$29.62	$0.100	~300×
Europe	$6.08	$0.040	~150×
All regions (mean)	$18.27	$0.054	~340×
Asia (median)	$8.69	$0.055	~160×

Savings link to prices, coverage & revenue



Broadband prices ↓

Strongly negative — more peering savings link to lower broadband prices (blue).

Mobile coverage ↑

Positive — more savings link to wider mobile network coverage (green).

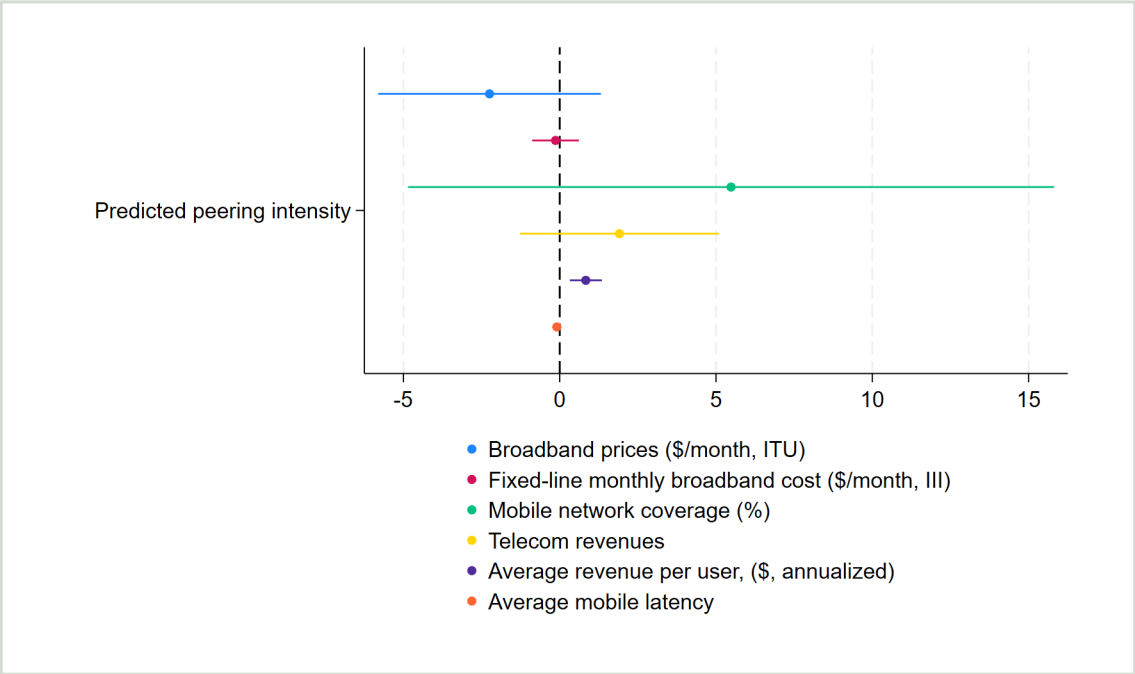
Telecom revenue ↑

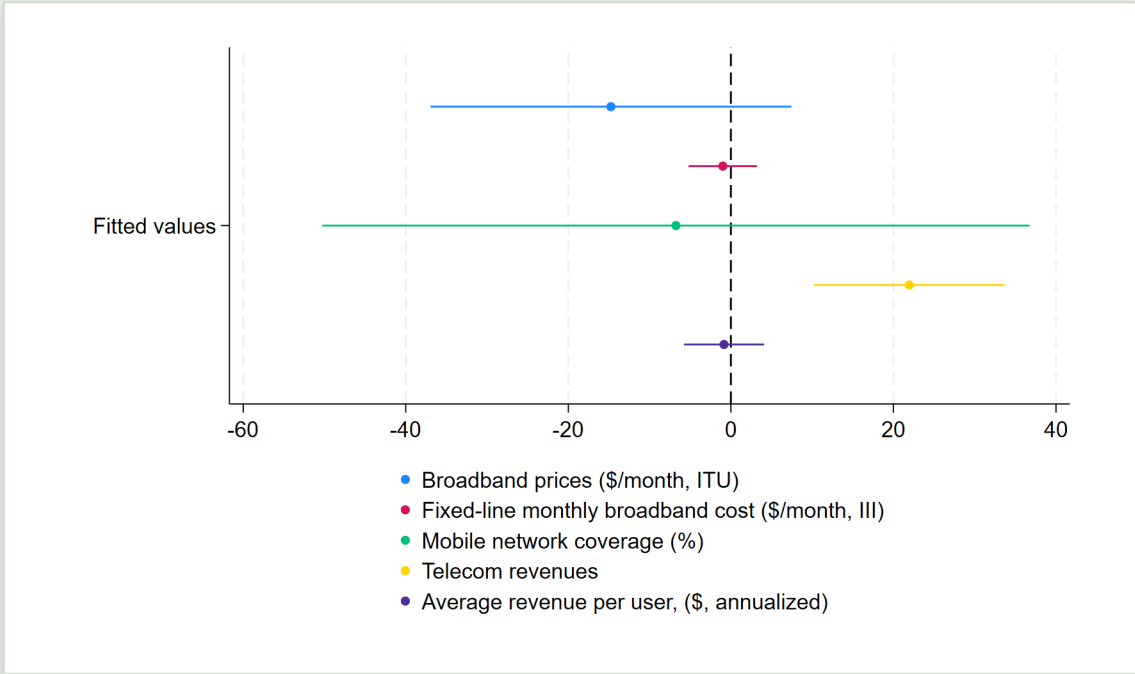
Positive — operators earn more overall revenue as savings rise.

ARPU ≈ flat

Slightly negative, uncertainty overlaps zero — growth is more users, not higher bills (purple).

Localization lifts ARPU; cost lifts revenue





Keep traffic local → higher ARPU

+83 pts ARPU per unit of intensity (significant at 1%).

Lower prices → higher overall revenue

~22% higher telecom revenue per unit of cost-driven intensity.

FINDING 3 · WHERE IT MATTERS MOST

The developing world — and much of APAC — gains most

Splitting the sample by income, economic freedom and peering readiness shows the benefits concentrate where transit is expensive and local interconnection is underdeveloped.



Low & middle-income

Price falls and wider mobile coverage are driven by LMICs; revenue gains by LMIC + middle-income — i.e. much of South & Southeast Asia.



Moderately regulated

Effects concentrate in “Moderate” economies on the Index of Economic Freedom — where many APAC markets sit, not the fully liberal ones.



Peering Readiness cuts both ways

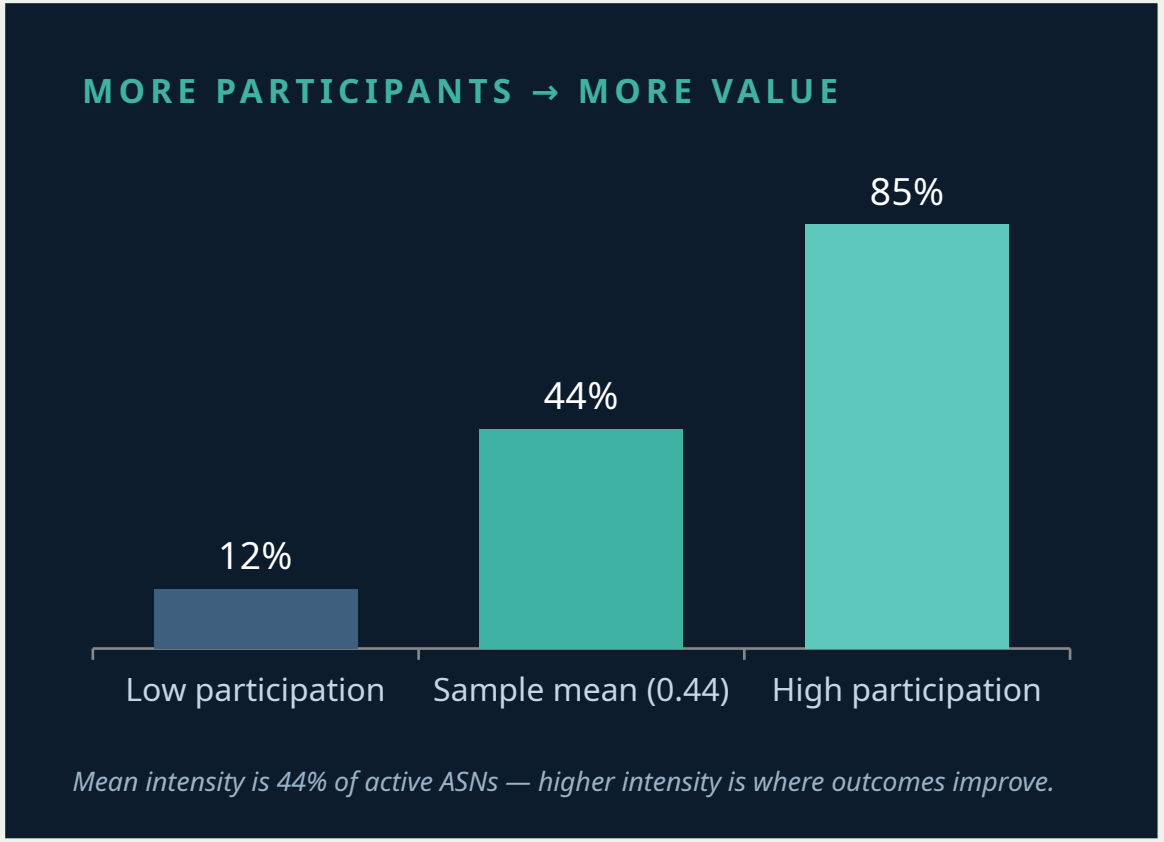
Price falls come from higher-readiness country-years; revenue gains show up more where readiness is lower — APAC spans both ends.

Building an IXP is not enough — use it

Peering intensity is the driver

Intensity = the share of a country's active networks that actually participate in the local IXP.

- Gains come from how BROADLY networks connect — not the mere existence of an exchange.
- Cost-driven intensity tracks higher revenue; localization-driven intensity tracks higher ARPU.
- Policy goal: more networks on the fabric, more traffic kept local.



READING THE EVIDENCE HONESTLY

Strong signal — with the right caveats

Associations, not proof

The two-stage design isolates a channel but not clean causation — intensity reflects the same conditions it explains.

Port fees are a proxy

peering.exposed captures port fees; backhaul, colocation & cross-connects add to real cost (survey: port ≈ 44%).

Uneven coverage & fills

Intensity / localization data cover mainly 2024–2026; forward-fill risks over-generalising sparse city-years.

Survey & sample limits

27 respondents, skewed to North America / Europe; transit quotes often international — may overstate the local gap.

IN SUMMARY

Key findings

Peering is cheaper

On average, peering costs were dramatically lower than IP transit between 2019 and 2024.

Benefits to consumers

Greater savings link to lower broadband prices and more bandwidth for users.

Impact on ISPs

Savings link to wider mobile coverage and higher telecom revenue — though ARPU did not rise significantly.

Localization helps

More peering and traffic localization link to lower prices and expanded network capacity.

Global disparity

Benefits are strongest in moderately-regulated low- and middle-income economies — developing markets benefit most.

For Asia-Pacific: transit costs well above European levels and uneven interconnection mean the largest upside sits in the region’s emerging markets.

THE TAKEAWAY

More peering, more participation

—

a cheaper, stronger Asia-Pacific Internet

Peering is structurally cheaper than transit, and those savings ripple into lower broadband prices, wider mobile coverage and larger telecom markets — with developing economies, and much of Asia-Pacific, gaining most. The lever is participation: more networks on the fabric, more traffic kept local. Treat IXPs as strategic national infrastructure.

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