



LIQUID
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The Value of Regional ISPs & Data Service Providers in the Modern Era

*How Pan-African Connectivity
Drives Network Convergence
and Future-Network
Readiness*

12 May 2026



Standards Context

ITU-T SG12: Standards on **network performance, QoS / QoE** across terminals, networks and services

- QoE: End to end, multi domain paths, multi-operator

ITU-T SG13: standards for Future networks and emerging network technologies.

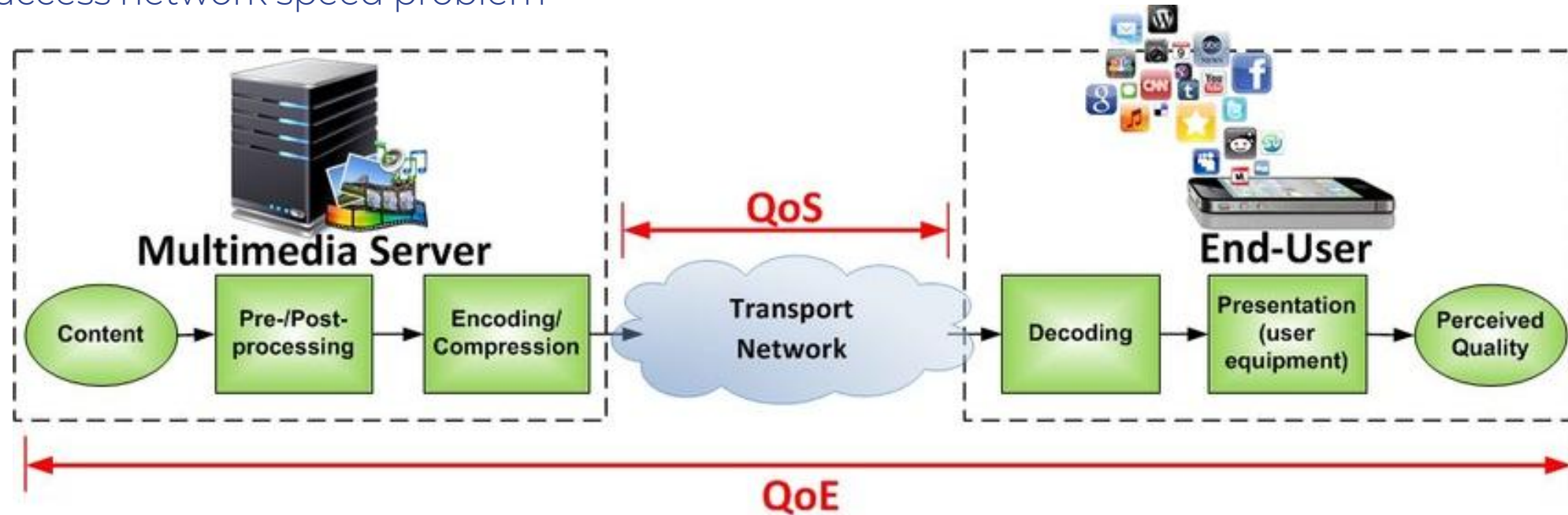
- Architectures, capabilities/APIs; softwarisation, orchestration, AI/ML; compute-network integration; non-radio IMT-2030

Thesis: SG13 aligned regional architectures make service quality outcomes predictable, repeatable.

Problem statement

QoS is now end-to-end, cross-network

- **QoE is shaped by the whole path:** Transport (access + metro + core + interconnect) + data centre / cloud + end user devices
- **Multi-operator** routing paths and interconnection quality often dominate user experience
- **Therefore:** future-network readiness is an architecture and operations problem— not just an access network speed problem



Regional ISP / DSP

In this context

- **ISPs/DSPs that operate** cross-border backbone + metro + aggregation **networks** at continental scale
- They **interconnect** national ISPs/MNOs, IXPs, data centres and cloud on-ramps
- They **enable ‘capabilities’** (reach, resilience, service assurance) that national networks can build on



About Liquid

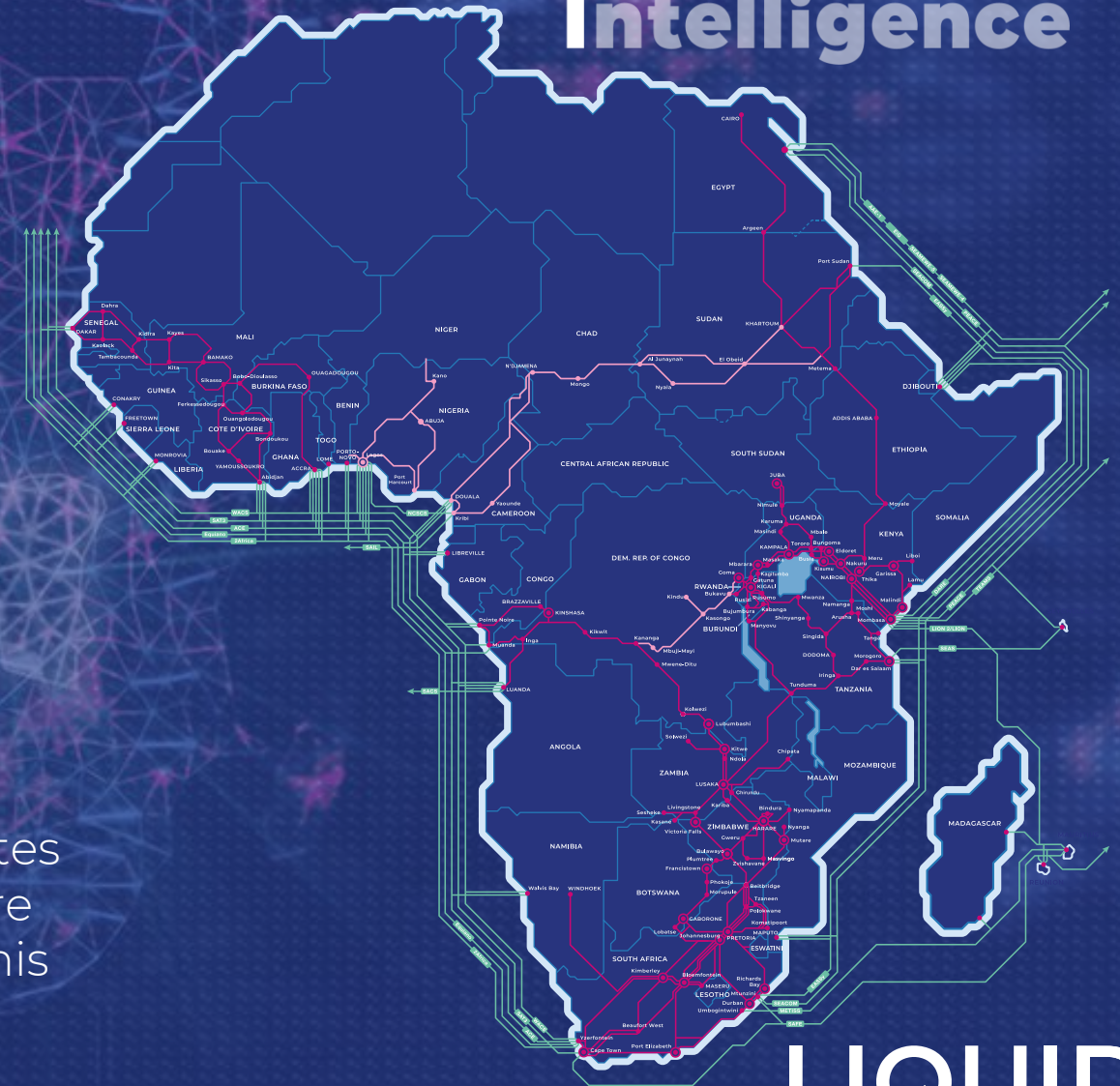
WELCOME TO
**African
Intelligence**



CASSAVA
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 LIQUID INTELLIGENT TECHNOLOGIES CONNECTIVITY • Fibre • Satellite • Wireless	 LIQUID CLOUD & CYBER SECURITY CLOUD & CYBER SECURITY • Cloud • Cyber security	 CASSAVA AI COMPUTE AI • Enterprise AI • CPU as a service	 Africa DataCentres CO-LOCATION • AI compute data centres powered by renewable energy	 sasai PAYMENTS • Fintech • Digital solutions
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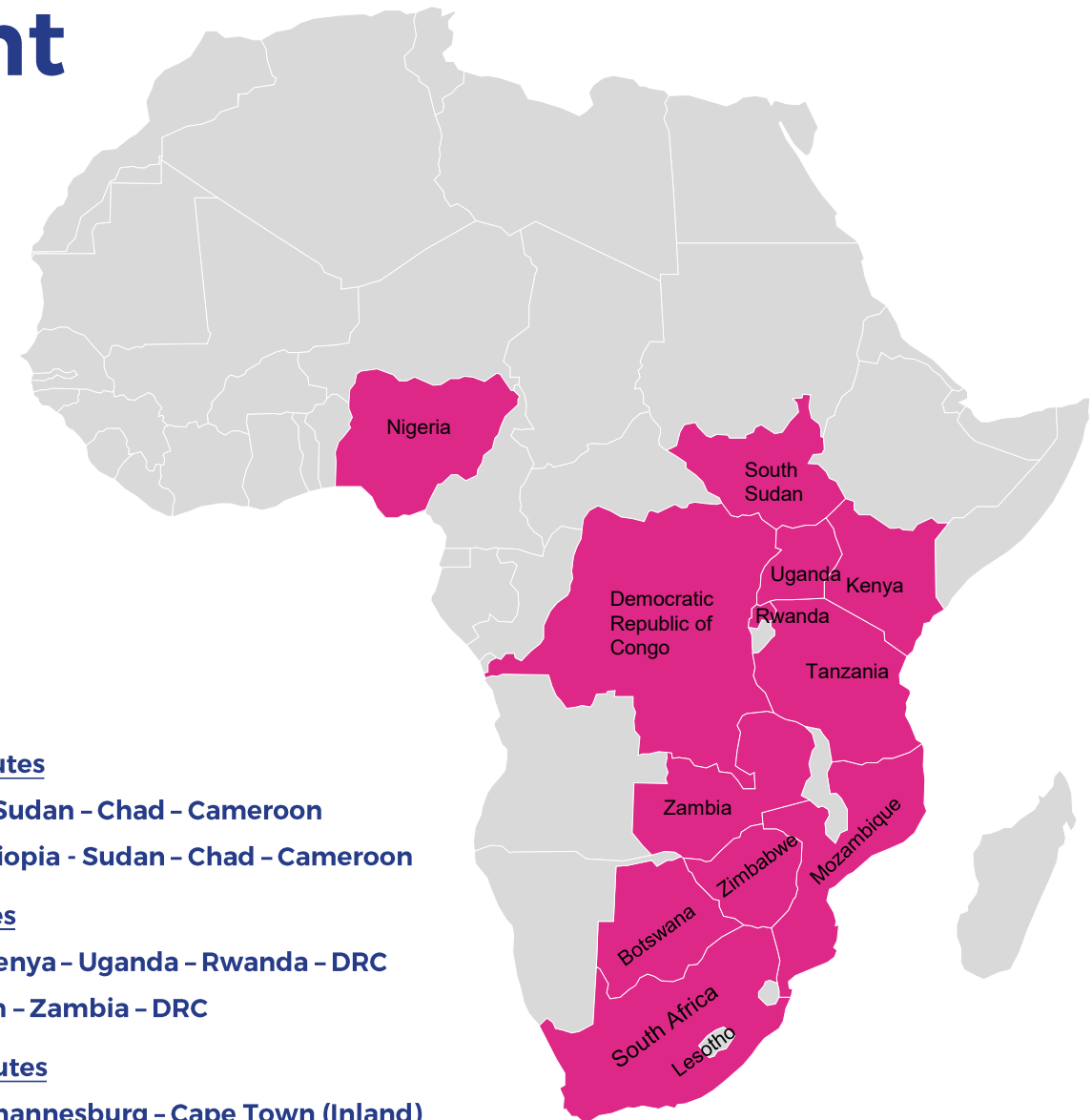
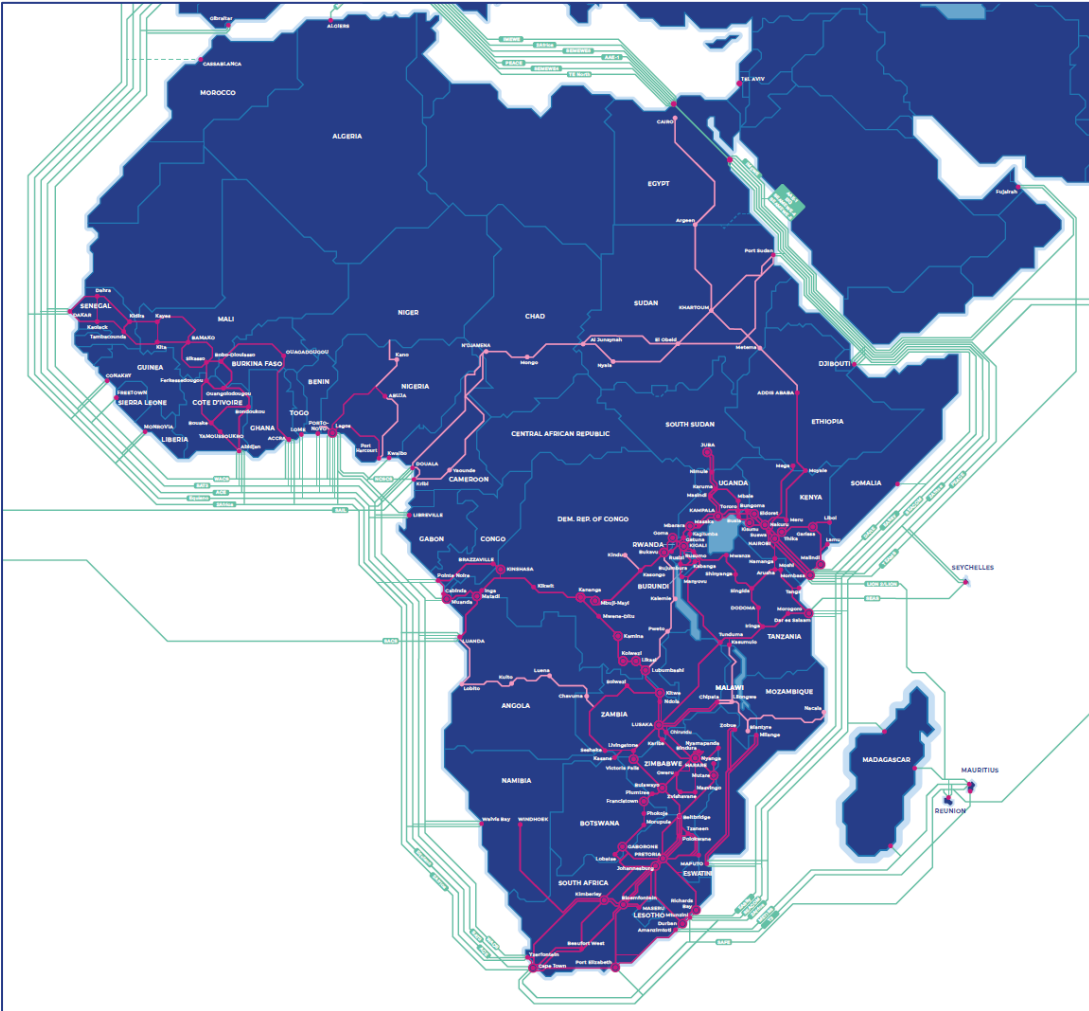


Liquid, as part of **Cassava Technologies**, operates one of the largest pan-African digital infrastructure platforms — this scale is what makes the rest of this discussion practical, not theoretical.”

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The African Continent

Fibre Footprint



Northern Routes

Port Sudan – Sudan – Chad – Cameroon

Djibouti - Ethiopia - Sudan – Chad – Cameroon

Central Routes

Mombasa – Kenya – Uganda – Rwanda – DRC

Dar es Salaam – Zambia – DRC

Southern Routes

Mtunzini – Johannesburg – Cape Town (Inland)

Mtunzini - Port Elizabeth – Cape Town (Coastal)

Traffic Drivers

Upstream: Mostly **tier 1** transit providers offshore

PNI: Direct peers with hyperscalers, mostly onshore
e.g. Bytedance, Microsoft, Meta, Google, etc.

IXP-EU: Traffic transited through EU IX locations:

- France - Marseilles, DECIX – (Lisbon, Marseilles, Frankfurt), Equinix – London, Amsterdam IX and LINX1

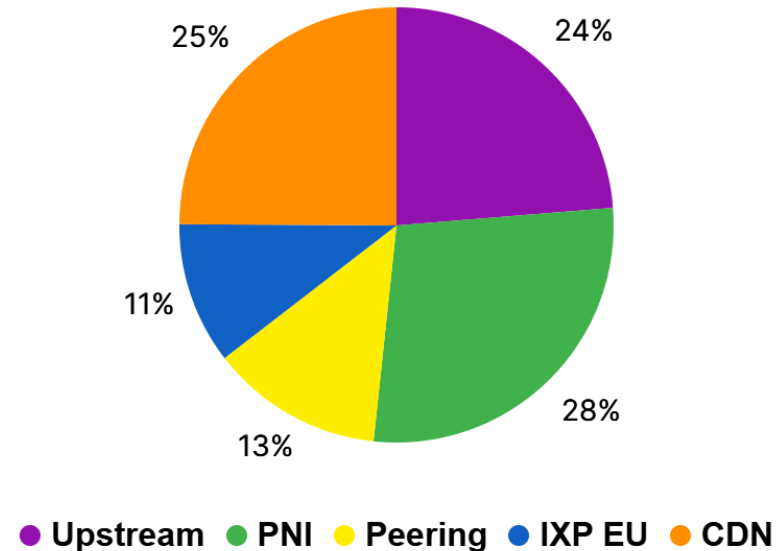
CDN: Direct peering onshore with Major content providers: Netflix, Meta, Google, Akamai, Cloudflare, Gcore, and Qwilt

Peering: Traffic transited through onshore and smaller offshore IX such as

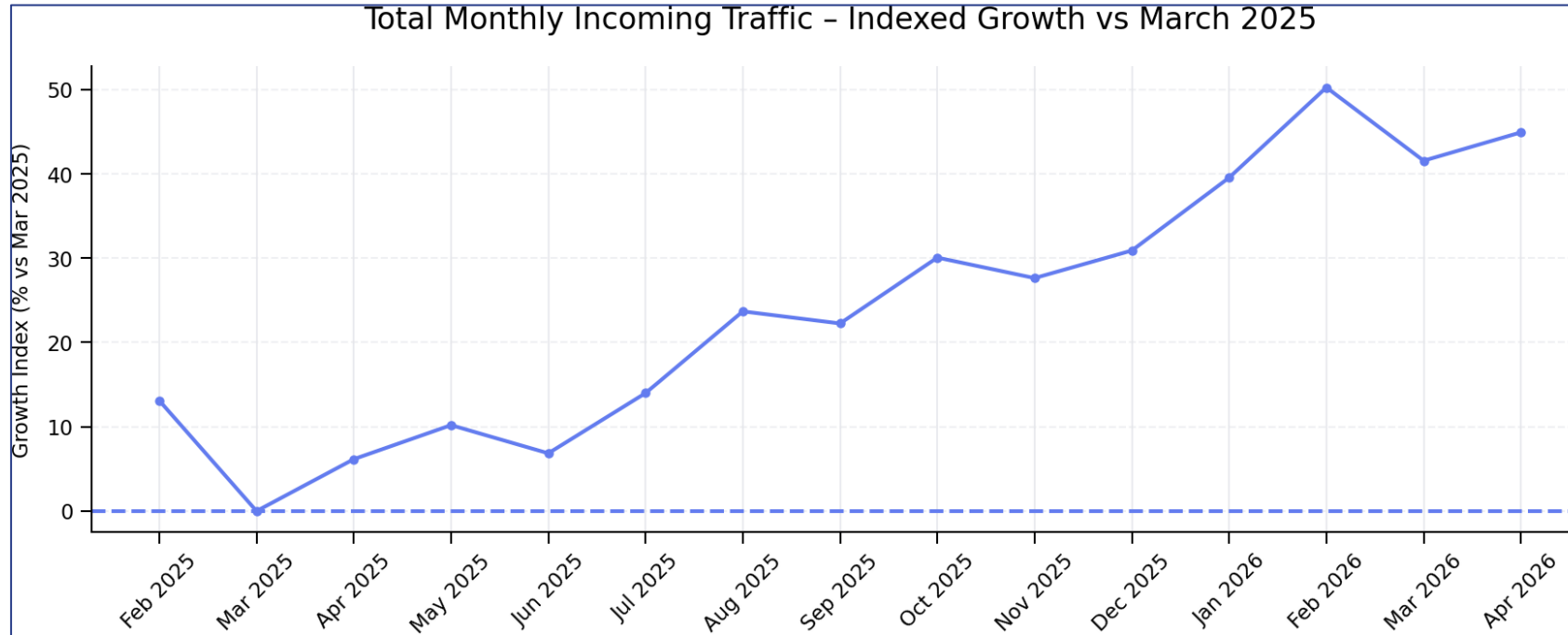
- CIXN CPT, IPX Nigeria, TIX Tanzania, NAP Africa (DBN and CPT), JINX Midrand, UIX, KIXP etc.

An **extensive local IXP** presence keeps traffic local and **reduces latency**

Incoming Traffic Apr 2026



Regional Traffic Trends



- The total incoming Traffic Groupwide **Increased** in Feb as compared to Jan 2026 by **7.6%**.
- Upstream, Peering, CDN & PNI traffic usage increased by **12.7%, 6.5%, 6.2% & 8.3%** respectively while IXP decreased by -1.1% in Feb as opposed to Jan 2026.
- The highest Traffic increase in UPSTREAM is caused by increased **LEO operator** traffic usage in Feb 2026.



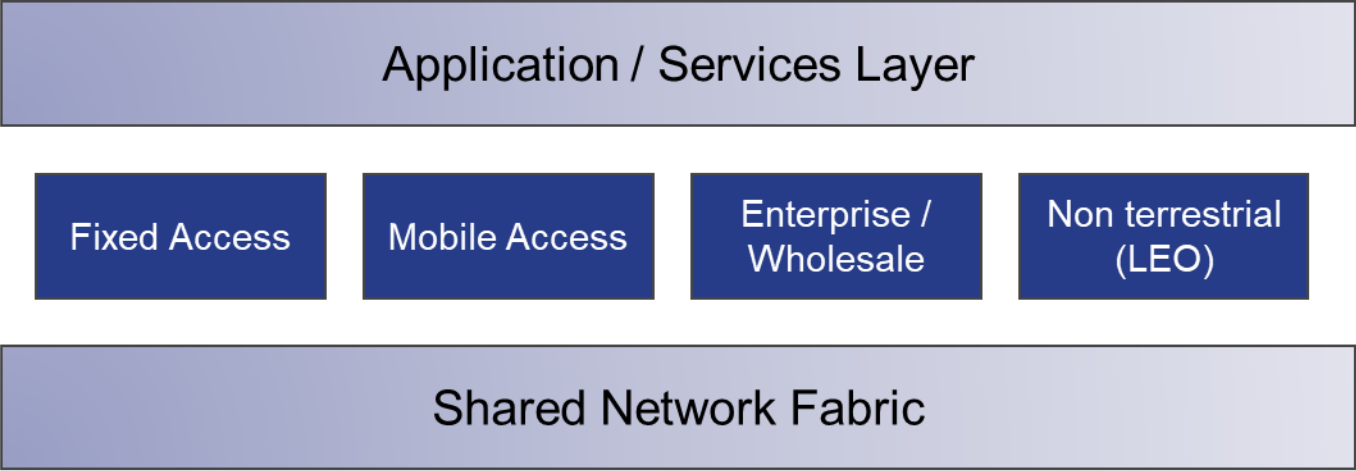
We learnt..

- Liquid operates **Pan African Digital** Infrastructure with **global reach.**



Network Convergence:

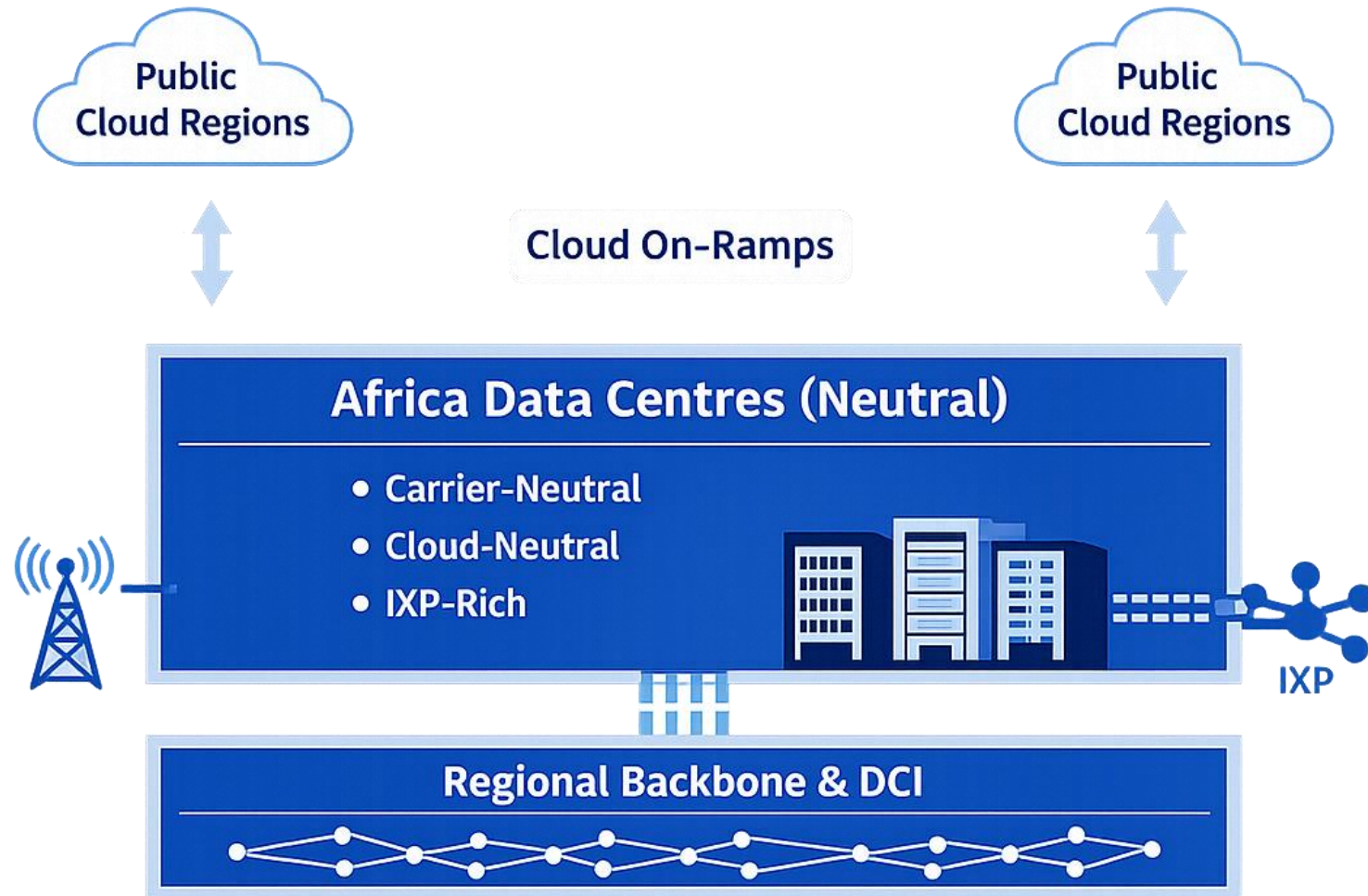
One Fabric, Many Services



Transport • Interconnection • Control • Capability exposure

- **Convergence** means **shared** IP transport for fixed, mobile backhaul, LEO, enterprise WAN and wholesale
- A single, resilient transport layer simplifies operations and improves service assurance
- Regional scale supports common QoS classes and cross-market service behaviours

Cloud Proximity & Data Centre Interconnect



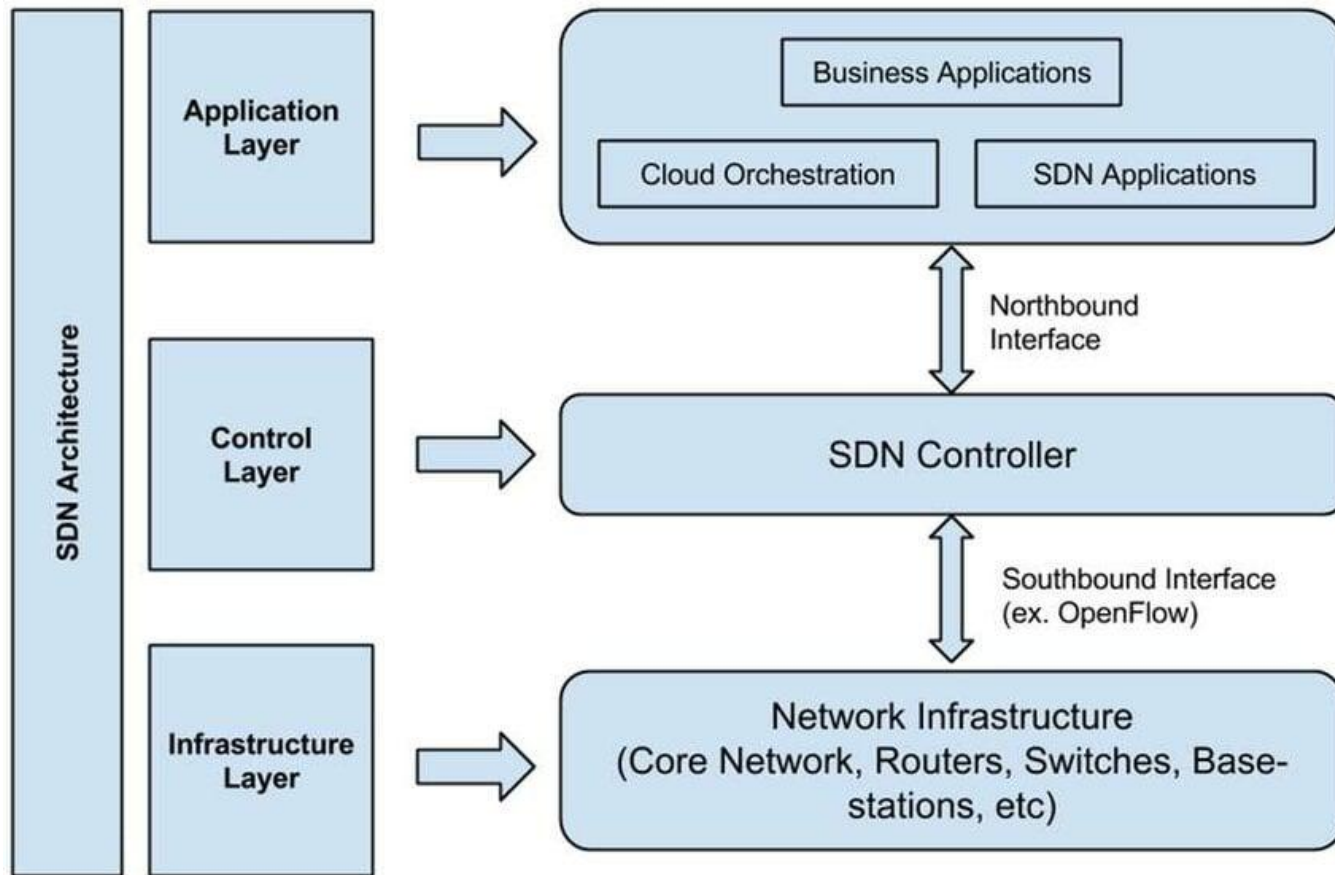
- Neutral data centres provide cloud-adjacent locations
- GPU deployments mean that Compute/ AI workloads are accommodated.
- On-Ramps (ExpressRoute, Direct Connect, Peering) to public cloud regions.
- Multiple carriers and IXPs for traffic localization
- Regional DCI connects these hubs into a coherent fabric

QoS/QoE Outcomes enabled by Liquid's Infrastructure

Metric	Infrastructure Driver	Customer Impact
Latency and Jitter	Shorter routing paths + Optimised regional interconnections	Faster response times, more consistent application performance
Availability	Path diversity and regional redundancy	Fewer service outages, Improved service continuity
Packet Loss / Congestion	Open peering strategy, Strong IXP Presence, proactive capacity engineering	Better Overall User Experience

- Liquid's **open peering policy** and **extensive local IXP** presence keeps traffic local and **reduces latency**
- **Dense peering Network** + major IX presence **reduce congestion** risk and **improve availability** while SLAs reinforce measurable QoS/QoE intent

Softwarization and AI/ML for Assurance



- **AI SDN:** Dynamic Intelligence via SDN applications (e.g. ROA)
- Realtime, Service aware route optimization
- AI/ML used to analyse data and predict failures, expedite RCA processes.
- SDN Controllers and orchestrators for config rollout, service activation
- Shared network fabric remains core and is operated via south bound interfaces e.g. openflow.

Target Outcome: fewer recurring incidents, faster restoration, and more stable customer experience

Future-ready architectures → measured, improved quality Outcomes

SG13: Architectures & Capabilities

Cloud-Native, Orchestrated Transport

Realised by



Regional Network Fabric

At Scale, In Operation

Observed as



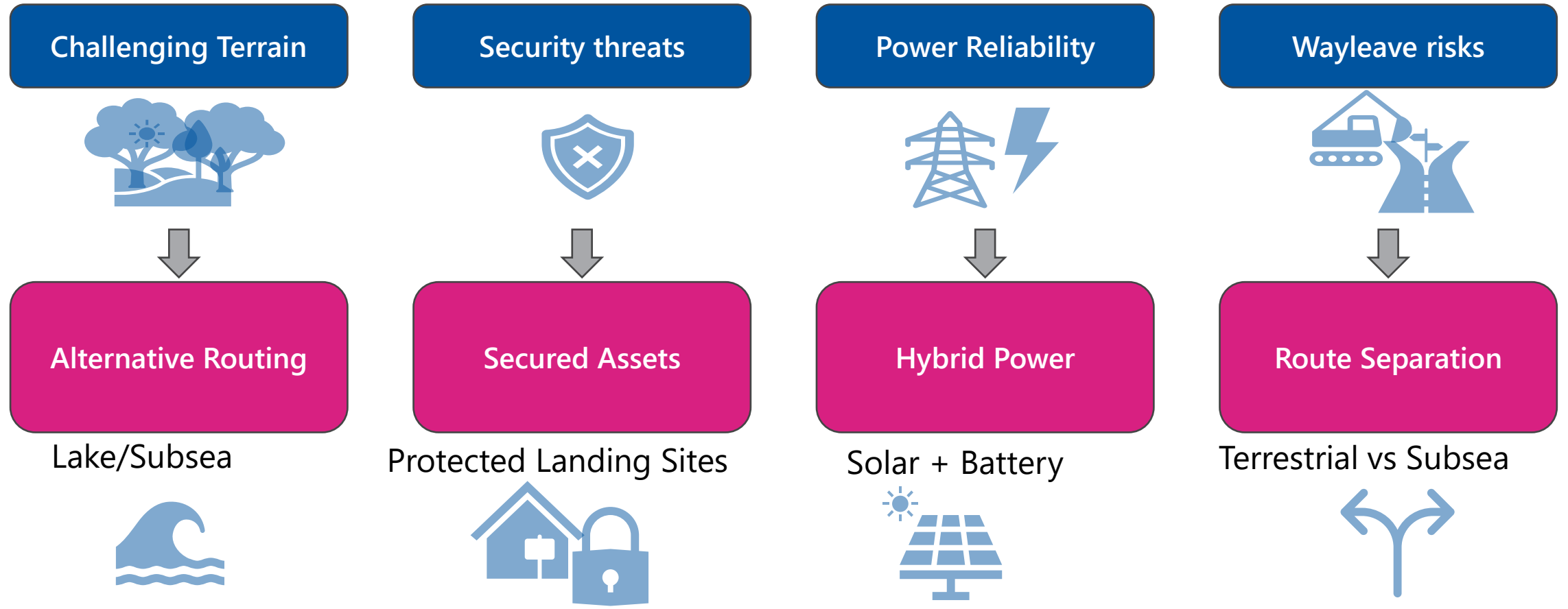
SG12: O65 / QoE Measured Outcomes

Latency, Loss, Jitter, User Experience

- IMT evolution demands stronger transport and core capabilities (non-radio enablers)
- Service separation and deterministic tendencies for critical services become more important
- SG13: Define capabilities & architecture (cloud-native, orchestrated, compute-aware transport)
- Shared Pan African fabric operationalizes those capabilities at scale
- SG12: measures resulting end-to-end QoS/QoE outcomes experienced by users

Implementation Realities (Africa)

Constraints that Shape Architecture Choices



Lessons translated directly into infrastructure design choices

Take aways

- **Regional connectivity** is not just capacity; it is a **capability layer** for future networks
- Pan-African fabrics enable convergence, resilience and compute proximity
- Payoff: more **consistent end-to-end QoS/QoE** for citizens, enterprises and public services





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