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The cable is not the cloud

Why Africa's international bandwidth needs power, exchange points, domestic networks and productive demand to create local value

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THE DECISION IN ONE PAGE

A cable landing is a border post for bandwidth, not a digital economy.

Submarine cables have redrawn Africa's connectivity map. The next investment test is whether bandwidth can leave the landing station, be exchanged and processed locally, reach firms at a competitive price, and support work that generates income. Djibouti's exceptional cable position shows why geography creates an option—not an outcome.

8 — operational submarine cables serving Djibouti in the World Bank Group's September 2026 private-sector diagnostic, alongside less than 3 MW of combined critical commercial data-centre load.[1]

US$4 per Mbps a month — Djibouti's indicative wholesale IP-transit price for a minimum 1 Gbps commitment, compared with US$2 in Kenya, US$0.50 in South Africa and US$0.30 in Singapore.[1]

US$0.25 per kWh — Djibouti's commercial electricity tariff, against an Africa regional average of US$0.14 cited in the diagnostic.[1]

38% — the share of Africa's population using the internet in 2024, compared with 68% globally, according to the ITU.[2]

24% — the share of surveyed African firms that intensively used their most sophisticated adopted digital technology in a six-country World Bank and IFC study.[3]

THE LOCAL VALUE CONVERSION STACK

	Landing resilience Physically diverse international routes and tested recovery.
	Open gateway Direct, transparent and enforceable landing-station access.
	Domestic reach Competitive cross-border, intercity and metropolitan fibre.
	Local exchange Neutral facilities, active peers and locally reachable services.
	Power and compute Firm affordable energy and scalable, resource-aware capacity.
	Service market Price pass-through, cloud, payments, security and portability.
	Productive use Firm adoption, skills, local suppliers, jobs and exports.

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Executive thesis

A cable landing is a border post for bandwidth, not a digital economy

Africa's submarine-cable map is becoming dense. Capacity arrives at coastal landing stations, routes multiply, and international transit becomes technically available. These are real gains. They do not by themselves establish that local firms can buy affordable connectivity, that domestic traffic stays close to users, that data can be stored and processed locally, or that people can turn access into productive work.

The value chain after the beach is longer than the cable. It includes open access to the landing station; competitive cross-border, national and metropolitan fibre; carrier-neutral data centres; active internet exchange points; reliable and affordable electricity; cloud and software markets; retail competition; devices and skills; and firms with a reason and the capability to use digital tools. A weakness at any one layer can keep international capacity from becoming local economic value.

The distinction matters because the visible asset is usually the easiest one to celebrate. Cable counts and terabits per second can be announced. The less visible conversion system is harder to photograph and harder to finance: ducts through a city, a neutral exchange room, a power-purchase agreement, a second wholesale supplier, a technician-training programme, or the operating change that makes a manufacturer use software every day.

Djibouti is an unusually clear stress test. Its position at the mouth of the Red Sea has attracted an exceptional concentration of international cables. Yet the World Bank Group's September 2026 Country Private Sector Diagnostic describes commercial data-centre capacity of less than 3 MW, high local transit prices, expensive electricity, restricted access to landing facilities and an exchange at which the state-owned operator was the only local internet service provider.[1] Geography has created scarcity value. The domestic system has not yet converted all of it into a competitive digital-services economy.

StoneComms proposes a Local Value Conversion Stack for evaluating that gap. It tests seven linked layers: landing diversity and resilience; open gateway access; domestic and cross-border fibre; neutral interconnection and local hosting; power and scalable compute; price pass-through and enterprise services; and productive use, skills and local supplier participation. The stack is not a league table. It is a way to identify which missing layer limits the value of the layers already built.

Djibouti's cable advantage is real

Eight routes arrive; the local market remains narrow

The new Djibouti diagnostic was released on 14 September 2026, based on research completed in early April. Its digital-infrastructure analysis is mostly dated to July or late 2025. On that evidence, eight operational submarine cables landed in the country's data centres, the largest inventory described for sub-Saharan Africa and comparable with South Africa. At least six additional transcontinental systems were expected in the Red Sea.[1]

That density reflects a powerful location. Cables connecting Europe, Asia, the Middle East and Africa pass through the Bab el-Mandeb corridor. Ethiopia supplies a large neighbouring demand pool: its international capacity use reached about 2.5 Tbps by mid-2025, more than five times the level five years earlier. Djibouti offers a low-latency, multipath outlet at a time when routes through parts of Somalia and Sudan face security risk.[1]

The local processing base is much smaller. The diagnostic counted two primary commercial facilities, with combined critical IT load below 3 MW. Older capacity was nearing full use and some landing points were constrained. New projects had been announced, including Afridata Park and another initiative involving the Pan African Internet Exchange and the sovereign wealth fund, but construction had not started by the report's late-2025 cut-off.[1]

The World Bank Group modelled what reform might unlock: three or four additional facilities by 2031, US$160 million to US$240 million in cumulative investment, and 700 to 1,300 direct, indirect and induced jobs over five years.[1] These figures are scenarios, not commitments. They assume capacity rising from about 1.5 MW in 2025 to 15.5 MW under a reform case or 22.5 MW under an accelerated case, and apply an induced-job multiplier drawn from external studies. They should be read as the scale of an opportunity conditional on policy and delivery—not as jobs already created.

The investment proposition is nevertheless significant. A country with a small domestic market can sell regional redundancy, latency, colocation, cloud access and disaster recovery. But those services depend on more than the number of cables offshore. They require a market structure that lets capacity move through the gateway and a cost structure that allows computers to run competitively onshore.

The first bottleneck may be the gateway

International capacity can be cheap outside and expensive inside

By mid-2025, state-owned Djibouti Telecom remained the main domestic seller of international IP transit. A licensed entrant, TO7, had not started selling international wholesale capacity. Alternative fibre providers reported restricted access to Djibouti Telecom's landing facilities, while local users generally had to buy upstream service through the incumbent.[1]

The result was a striking price gradient. Indicative local IP transit had fallen from about US$30 per Mbps a month in 2019 to about US$4, a substantial improvement. Yet the diagnostic's comparison for a minimum 1 Gbps commitment put Kenya at US$2, South Africa at US$0.50 and Singapore at US$0.30. Djibouti's price remained at least twice Mombasa's and several times that of deeper markets.[1]

At the same time, international carriers could obtain competitive Djibouti-to-Europe capacity from several carriers peering in the country. The constraint was therefore not simply scarcity on the submarine segment. It lay in the terms on which capacity crossed into the domestic market.

This is a wider lesson. A World Bank and IFC study covering more than 150 countries found that a doubling of international bandwidth was associated with fixed-broadband price reductions of up to 14% and mobile-broadband reductions of up to 21%. Africa recorded the smallest regional effect. The authors found stronger pass-through where independent regulation, interconnection and access rules, infrastructure sharing and international competition were present; the price effects weakened as domestic concentration increased.[4]

The causal mechanism is practical. A new cable that is controlled by a vertically integrated dominant operator may lower that operator's costs without lowering entry barriers for rivals. If competing providers cannot access the landing station, lease backhaul on predictable terms, reach a neutral exchange or build through public rights of way, the international capacity does not become a contestable local input.

For Djibouti, the diagnostic's recommendations are correspondingly specific: implement the 2025 Digital Code through clear decrees; establish a data-centre licensing regime; enforce open, cost-reflective access to landing stations and the exchange; and allow authorised providers to buy capacity directly from regional and global carriers.[1] These are not abstract competition reforms. They are the valves that determine how much of the cable's value enters the domestic economy.

Traffic creates more value when it stays close

An exchange point needs participants, content and neutral facilities

An internet exchange point allows networks to exchange traffic directly rather than send it through an overseas transit provider. That shorter route can reduce latency, international transit cost and exposure to cable failures. But an exchange does not become useful simply because a switch has been installed. Its value depends on the networks that join, the content and cloud services hosted nearby, the neutrality of the facility, and the technical trust required to peer.

Djibouti's exchange at Wingu had 21 active members in July 2025, according to the diagnostic, but Djibouti Telecom was the only local internet service provider. Peak traffic in the second quarter of 2025 was about 30 Gbps, roughly one-quarter of traffic at the rival exchange in Mombasa.[1] Those facts describe both an asset and a missing market: international members are present, but domestic participation and local demand remain thin.

Older African comparators show what growth in local exchange can achieve. Internet Society case studies estimated that Kenya and Nigeria each increased the share of locally available traffic from about 30% in 2012 to nearly 70% in 2020. Peak traffic at the Kenya Internet Exchange Point rose from 1 Gbps to 19 Gbps and estimated annual transit savings reached US$6 million. Nigeria's exchange grew from 300 Mbps to 125 Gbps, with estimated savings of US$40 million a year.[5]

Those results came from an ecosystem rather than a single facility: multiple exchange locations, carrier-neutral data-centre nodes, content-delivery networks, voluntary peering and sustained community building. The estimates are now six years old and should not be treated as a current continental average. Their continuing value is institutional. They show that local traffic is produced through participation and hosting decisions, not by cable abundance alone.

The resilience case is equally important. Damage to four cables off West Africa in March 2024 disrupted connectivity in 13 African countries. Network observations showed traffic being shifted to alternative systems, with recovery taking hours in some markets and days or weeks in others.[6] Diverse sea routes help. So do terrestrial cross-border links, local caches, regional exchange and services that remain reachable when an international path fails.

The right question for a proposed digital hub is therefore not only how many cables land. It is what proportion of locally requested traffic can be reached locally or regionally, how many independent domestic networks peer, whether users have route diversity, and whether public and private cloud workloads can move without passing through a single commercial gateway.

Cross-country evidence reinforces the distinction. In Rwanda, equipped international bandwidth rose 104.6% between the first quarters of 2024 and 2025, while used bandwidth grew 13.8% and subscriptions 2.7%.[10] By the third quarter of 2025, equipped bandwidth was 87.7% higher than a year earlier but use had increased only 2.2%.[11] Nigeria presents a different gap: its national exchange reports more than 130 connected networks and an all-time peak above 2.9 Tbps, while Internet Society estimates that only 11% of the top 1,000 sites are reachable from local infrastructure.[12][13] Capacity, exchange participation and local content are separate outcomes.

Electricity determines whether geography is competitive

A data centre is also a long-duration power customer

Data centres convert electricity into computing, cooling and network availability every hour of the year. In Djibouti, the commercial electricity tariff cited by the diagnostic was US$0.25 per kWh, against an Africa regional average of US$0.14. Market participants estimated local data-centre lease rates at two to three times those in competing Red Sea and east-coast African hubs, principally because electricity was the largest operating cost.[1]

Connection scale was a further constraint. The national utility was generally ready to connect loads below 2 MW, while market participants reported difficulty obtaining firm commitments for larger blocks. Installed grid capacity was estimated at about 266 MW, but ageing infrastructure and recurrent shortfalls meant only a fraction was reliably available. Data centres could self-generate, yet could not buy directly from independent power producers.[1]

This turns an energy-market rule into a digital-infrastructure constraint. If a facility must rely on a costly and capacity-constrained public grid or diesel backup, its globally strategic location can be priced out of the market. If renewable producers can contract directly through transparent grid-access and wheeling arrangements, the same facility can become an anchor customer for additional generation.

The interaction should be designed carefully. A data centre's 24-hour load can support new power investment and better network economics. It can also compete with households and firms for scarce electricity, shift grid-upgrade costs onto other users, or create emissions and water stress if its supply and cooling model are poorly chosen. Investment appraisal should disclose additional generation, connection works, backup fuel, water demand, emissions, curtailment rights and who pays for shared infrastructure—not only a renewable-energy headline.

Djibouti's diagnostic recommends implementing the country's 2015 energy-liberalisation law so that private wind and solar producers can contract directly with data centres at negotiated prices, supported by transparent transmission access and tolls.[1] The underlying principle travels well: power availability, price and provenance should be settled before computing capacity is announced.

Coverage is not use, and adoption is not productivity

The demand side completes the infrastructure stack

Africa's international capacity has expanded much faster than the share of people and firms able to use it intensively. ITU data show that 38% of the continent's population used the internet in 2024, compared with 68% worldwide. Urban use reached 57%, while rural use was 23%.[2] The State of Broadband in Africa 2025 estimated that roughly 60% of sub-Saharan Africa's population lived within mobile-broadband coverage but did not use it, with device affordability and skills among the main barriers.[7]

The enterprise gap is more subtle. A World Bank and IFC study of representative firm data in Burkina Faso, Ethiopia, Ghana, Kenya, Malawi and Senegal found that 86% of firms with at least five workers had at least one digital enabler. Yet 23% did not use digital technologies for productive tasks and 39% had adopted them without intensive use. Only 24% intensively used the most sophisticated technology they had adopted.[3]

That evidence separates three different questions. Can a firm connect? Has it bought or subscribed to a tool? Has it changed the way it produces, sells, pays, manages stock or serves customers? The economic return lies mostly in the third question.

Cloud adoption in Djibouti remained early and fragmented. The diagnostic reported high connectivity and software-as-a-service costs, hard-currency software purchases, limited local supply and expensive hosting. Some large firms kept their own server rooms instead of buying local cloud services.[1] This weakens the commercial case for new shared facilities, even as the absence of competitive shared facilities keeps adoption costs high.

Policy has to work both sides of that loop. Public institutions can aggregate demand through transparent cloud and connectivity procurement. Banks, ports, logistics firms and tourism businesses can provide anchor workloads. Small firms need reliable payment systems, fit-for-purpose software, cybersecurity support, devices, finance and managerial capability. Workers need technical and commercial skills that match the services a hub intends to sell.

The World Bank's Djibouti Digital Foundations Project illustrates the incremental nature of that work. By 30 September 2025 it reported three licences or authorisations, 29 public institutions with enhanced internet, 6,275 users with enhanced access and 316 people trained in digital skills. The project was rated moderately satisfactory and its overall risk remained high.[8] These are project-level outputs, not population-wide transformation. They show what the conversion system looks like in practice: rules, institutions, procurement and people advancing together.

Digital infrastructure is a network of complements

Roads, power, finance and skills still matter to an online economy

Digital services are sometimes presented as a route around physical infrastructure. The evidence points instead to complementarity. A World Bank working paper combining household, firm, road and fibre data across 25 sub-Saharan African countries found that access to both fast internet and roads produced an employment effect 22% greater, on average, than the sum of their isolated effects. Firms with combined access operated about 4.4 additional hours a week and added one full-time employee on average.[9]

The study is based on historical data and quasi-experimental estimates; it is not a forecast for a cable landing or data-centre project. Its strategic implication is still useful. Digital connectivity creates more value when workers can travel, goods can move, power stays on, firms can finance new equipment and managers can reorganise production.

South Africa illustrates the deeper stack. Internet Society records 28 active data centres, 11 exchanges, 96% of active networks connected through an exchange and 73% local reachability among the top 1,000 sites.[13] NAPAfrica reported more than 650 peering networks and multi-terabit traffic across Johannesburg, Cape Town and Durban in September 2026.[14] The combination is more important than any one number: international routes, dense domestic interconnection, local hosting, enterprise demand and cloud regions reinforce each other.

The same applies at national scale. A 2024 World Bank and IFC investment model estimated that projected submarine-capacity expansion could create US$21 billion to US$32 billion of additional

African digital-infrastructure need over 2022–27 under a full non-price response. About 39% was national and intercity fibre, 31% intra-city fibre, 15% data centres and 15% towers and antennas.[3] The modelled mix is the point: most of the requirement sat after the international gateway.

Capital providers should resist building these pieces as disconnected transactions. A data centre without affordable power or domestic routes may remain underused. A metropolitan fibre network without open ducts, customers or exchange access may reproduce a monopoly. A training programme without employers or procurement opportunities can produce certificates rather than careers.

The Local Value Conversion Stack

Judge the opportunity by its weakest layer

StoneComms proposes seven linked tests for governments, financiers, operators and economic-development institutions. The stack is an original synthesis for decision-making, not a technical standard or universal score.

1. Landing diversity and resilience. How many physically distinct routes and landing points are usable? Do nominally separate cables share the same marine corridor, landing building or terrestrial backhaul? What happened during the last outage?

2. Open gateway access. Which licensed providers can enter the landing station, buy international capacity directly and colocate equipment? Are charges and service levels published, cost-reflective and enforceable? Can an incumbent delay a rival through operational discretion?

3. Domestic and cross-border reach. Is there competitive national, intercity and metropolitan fibre between the landing point, exchanges, data centres, neighbouring markets and customers? Are ducts, poles, rights of way and border crossings accessible on predictable terms?

4. Neutral interconnection and local hosting. How many independent local networks actively peer? What share of requested content is served locally or regionally? Are the exchange and colocation facilities carrier-neutral, resilient and distributed enough to avoid a single point of failure?

5. Power and scalable compute. Can a facility obtain firm power at a competitive all-in price for the full planned load? Are direct renewable contracts and grid access possible? What new generation, network reinforcement, water, backup and emissions burden does the project create?

6. Price pass-through and enterprise services. Does cheaper international capacity reduce wholesale and retail prices? Can firms buy cloud, cybersecurity, payments and software in usable packages and currencies? Are switching, portability and service quality visible?

7. Productive use, skills and local participation. Which firms and public services will change how they operate? What local technical, managerial and supplier capabilities will be built? How many durable jobs, contracts, exports and tax receipts remain after construction?

Each layer should have a dated baseline, an accountable institution and an operating threshold. The stack should be updated as evidence changes. Its main discipline is to prevent strength at the cable layer from masking weakness everywhere after it.

What capital providers should require

Finance the conversion system, not only the photogenic asset

The investment case for a cable landing, data centre or digital park should include a local-value plan that can be tested after commissioning.

First, procurement should bundle or sequence the necessary complements. That might mean linking a data-centre concession to additional power, neutral colocation, an exchange node, metropolitan routes and skills commitments. It does not mean forcing one firm to own the whole chain. Competition often depends on separating control while coordinating delivery.

Second, financing conditions should make access measurable. Useful indicators include the number of independent wholesale suppliers; time and price to enter a landing station; number of active local peers; local or regional traffic share; latency to major workloads; power cost and outage hours; rack occupancy; cloud adoption; and the proportion of supplier spend placed with local firms.

Third, job claims should distinguish construction, permanent direct, indirect and induced work. A megawatt of installed capacity is not a job count. Training should be tied to specific occupational demand, apprenticeships, operating contracts and supplier opportunities. Gender and access barriers should be tracked because digital adoption and labour-market gains are not automatically distributed evenly.

Fourth, public support should be conditional on additionality. Tax relief, concessional finance, land, power connections or sovereign guarantees should buy outcomes that the market would not otherwise deliver: open access, new capacity, resilience, competitive prices, local skills, service to public institutions or regional exports. A facility that merely migrates existing private server rooms into subsidised space may improve efficiency without creating the advertised economy-wide gain.

Finally, the operating model should survive the first outage, currency shock and technology cycle. Contracts need redundancy, cybersecurity, equipment-replacement plans, data-protection compliance and a clear allocation of foreign-exchange risk. Digital infrastructure is not weightless. It is a long-lived service system with physical dependencies and institutional owners.

Research agenda

Measure the traffic and value that remain local

African digital-infrastructure reporting is rich in cable systems, design capacity and announcements. It is thinner on how international capacity is converted after landing. Governments, regulators, exchanges and development financiers should publish a comparable set of operating measures.

Those measures should include active rather than nominal wholesale providers; prices for standard bandwidth commitments; actual domestic and cross-border backhaul routes; local peering participation and traffic; data-centre power and occupancy; outage and recovery performance; enterprise cloud use; digitally delivered service exports; permanent employment; local procurement; and resource use.

The purpose is not to rank countries by a single number. It is to locate the constraint. In one market the problem may be landing access; in another, metropolitan fibre; in another, power; in another, weak firm demand. The relevant investment changes with the bottleneck.

Conclusion

The value begins after the landing

Africa needs more international capacity, more route diversity and more resilient cable systems. But a cable can carry traffic past a country as easily as into its economy.

Djibouti has one of the continent's strongest geographic positions for connectivity. The September 2026 diagnostic shows how much more value that position could produce—and why it has not done so automatically. Eight operational cables coexist with a small commercial computing base, costly power, high local transit prices and restricted gateway access. The solution is not to discount the cables. It is to finish the system around them.

The next generation of digital-infrastructure decisions should therefore be judged by what happens to the bandwidth after it reaches land: who can buy it, where it travels, where it is exchanged and processed, how reliably it is powered, what firms do with it, and which capabilities remain locally. The cable creates the option. The conversion stack creates the economy.

Methodology

This paper uses public evidence available up to 17 September 2026. The principal current trigger is the World Bank Group and IFC Djibouti Country Private Sector Diagnostic, released on 14 September 2026 and based on research completed in early April 2026. Its digital-market observations are mainly dated to July or late 2025. StoneComms cross-checked the country case against World Bank project reporting and set it within Africa-wide evidence from the ITU, World Bank, IFC, Internet Society and operator network observations.

The analysis separates observed indicators from scenarios and estimates. Djibouti investment, capacity and employment figures are modelled reform cases rather than commitments. International bandwidth price effects are econometric estimates across countries. IXP savings are study estimates. The Local Value Conversion Stack is StoneComms original synthesis from the evidence reviewed.

Limitations

Digital-infrastructure markets change quickly and public data are uneven. Cable counts may differ by whether a system is active, landed, available or counted as a separate route; this paper uses the diagnostic's July 2025 table and official release figure of eight operational cables. Published wholesale prices are indicative and depend on volume, route, contract length and service level. Traffic, occupancy, power and enterprise-adoption data are not reported consistently across countries.

The paper does not estimate a causal national impact for a particular cable or data-centre investment. It does not assess classified security architecture, individual commercial contracts, data-sovereignty choices or the engineering suitability of a specific site. Its decision framework should be tested with current local technical, commercial, environmental and social due diligence.

Source Note

Public evidence was checked through 17 September 2026. Dates attached to indicators describe the underlying observation where available, not only the publication date. The Local Value Conversion Stack is StoneComms original synthesis for institutional testing, not an official standard, project rating or investment recommendation.

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