

The Tools We Don't Own: Building resilience across Europe and Africa

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A EGREGOR COMMUNITY EVENT

The tools we don't own

*Building Digital Resilience across
Europe and Africa*



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ONLINE



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at Egregor
(Moderation)

The Tools We Don't Own: Building Resilience Across Europe and Africa

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Moderated by Vincent Danjean, Head of the Cyberspace and New Technologies Laboratory at Interpol and Chair of the Scientific and Ethics Committee at Egregor

Guest Speakers

Yann Dmitri Engoue: President of AfrikaNova Global Network, a pan-African network of think-and-action tanks operating in over ten African countries, and a specialist in business development and digital transformation. Yann chairs the Innovation, Digital Transformation and R&D Commission at APEC, the association of small-sized companies of Cameroon, and has been involved in the World Economic Forum's Global Shapers Community. His work focuses on helping ecosystems navigate technological dependencies, leverage open-source solutions, and build resilient, localised digital infrastructures.

Paschal Onuroah: Perplexity AI Business Fellow and data and analytics leader with over nine years of experience turning raw operational data into scalable, trustworthy and AI-ready systems. Paschal is co-founder of ComplianceIQ, an AI-driven platform automating evidence collection and control checks for regulatory compliance; of RootSense.io, which accelerates incident triage and root cause analysis for data engineering teams; and of SmartFleet Technologies, a Nigerian mobility company building software and battery-swap networks for last-mile delivery. He currently serves as lead data engineer at a US-based company and mentors the next generation of data professionals.

Executive Summary

Most organisations, and most states, run on digital infrastructure owned and controlled by others. This Egregor community event brought practitioners together to ask what resilience looks like under that dependence.

Three layers structured the discussion. On hardware, energy proved to be the binding constraint, and the dominant public-private model produces locally owned facilities under foreign operation, with the earnings following the operator. On software, open source emerged as a leveller that converts a licensing cost into a capability cost, valuable where the skill exists to retool it for local languages and contexts. On people, talent was named Africa's biggest lever, provided that training carries through to application. Each layer returned to the same requirement, which is capability built slowly.

The recurring conclusion was that sovereignty consists of concrete decisions. This includes where data sits, who operates the infrastructure, who writes the code, and who is trained to maintain it.

Introduction

Africa holds roughly **30% of the world's critical mineral reserves** essential to electronics and AI hardware, yet captures only around **10% of the global revenues** those resources generate. As **65% of the African population are under 25**, the potential for a self-determined future shaped by a young, educated workforce is there, but for this it is essential to establish the digital infrastructure, autonomy, and skills that will be the foundation for future innovation and growth.

There are multiple continental frameworks that do already exist, such as the African Union Digital Transformation Strategy, the AU Data Policy Framework, the Malabo Convention. Alongside this, external programmes initiated by actors like the EU or the GIZ support national data governance strategies. The key difficulty is translating these frameworks into infrastructure, code, skills and enforceable practice.

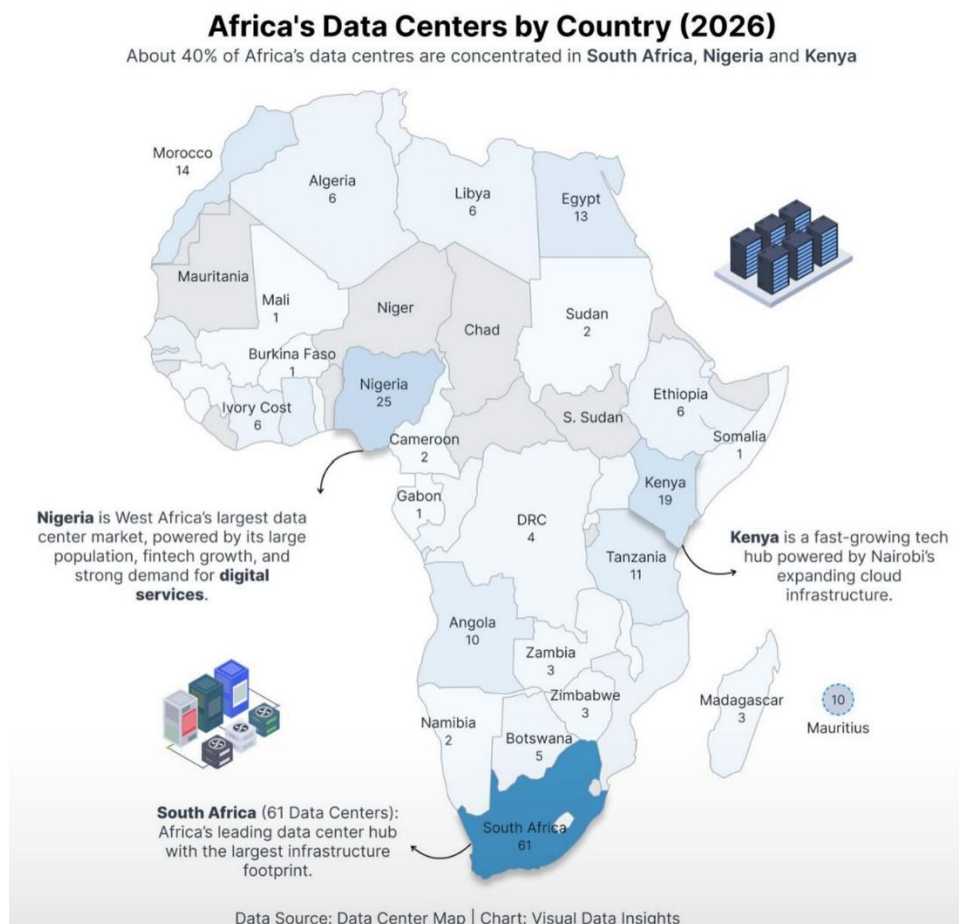
Digital sovereignty is not just an idea; it's a choice. You choose where your data is stored, who controls your infrastructure, and who develops your solutions. - Vincent Danjean

Part I - Hardware: The Ground Beneath the Stack

The first round examined the physical layer: data centres, connectivity, and the energy that is required to run both. In many African countries mobile networks were established with remarkable speed, fundamentally reshaping daily life for a very young population. Data centres have followed a different and slower logic.

Why Build Data Centres, and for Whom?

In Nigeria, the Central Bank's data localisation mandate, which requires payment data and personally identifiable information to be held domestically has become the visible driver of local development. Roughly **25 data centres** operate in Nigeria today, and most are **significantly underutilised**, because demand has not yet caught up with domestic supply. The commercial incentive is based more on potential rather than present demand: a growing population, the continent's largest concentration of unicorns, and deepening digital adoption.



An important insight was that Africa has the chance to build this digital infrastructure differently. Advocacy work in Central Africa has often focused on persuading administrations to construct data centres with **environmental and energy considerations designed in**. This advocacy needs to start from the ground up: For many administrators the subject is entirely new, and significant work is needed simply to first establish why the question matters.

Looking at the most critical dependencies that the African continent needs to wrestle with right now, Yann named a fundamental first priority: **access to the internet itself**. Across many countries and regions, the constraint is not how elaborate the software is but the absence of connection, particularly for the young people who are the intended beneficiaries. Data was named as the second priority, which is why local protection of it is so important.

The law and the policy are good — it is very good to write them. But it is very important to go to action. - Yann Dmitri Engoue

The Dependency That Worries Most: Energy

Paschal made the point that while much attention focuses on the reliance on semiconductor chips, the binding constraint sits in **energy**. Nigeria holds substantial resources but does not generate enough

power and has spent heavily on importing solar panels from China. It also imports batteries for solar infrastructure despite having lithium domestically, and despite large gas reserves that remain only partly used. Generating companies exist but the point of failure lies often in **distribution**.



Source: ISPI, Creative Commons License

An educational example was Burkina Faso's partnership with a Turkish company to build generation capacity in an explicit bid for energy sovereignty. In this partnership, the power required to run the plant is itself expected to come from Ghana. The **dependency is simply relocated**. Vincent brought up the caveat of the sustainability of practices: critical minerals are limited, so any strategy resting on extraction has to transition towards renewables to hold over the long term. A community member noted in the chat that the **African Continental Free Trade Area** is precisely the instrument that could organise this kind of cross-border exchange of energy and resources, and that governments should be making far more use of it within the continent.

Energy sovereignty is a big deal, really. That's where the dependency would worry me. - Paschal Onuroah

Community Discussion: Who Owns It, and Who Runs It?

A community member based in Burkina Faso raised a question about public versus private data centers. In Burkina Faso the facility is public, and companies cannot host their applications there. This is a common pattern in many countries where the state is effectively the only builder.

In response to this, a mixed picture emerged. In Nigeria, most data centres are **privately owned**, with only the centres that hold public-institution data in government hands. A good share of that private capital originates outside the country, whether through multinational telecommunications operators with local subsidiaries or through development finance backing of the largest facilities. While the asset

is local, the capital frequently is not. In Cameroon, one facility sits with the state telecoms operator, while a Cameroonian company working across West and Central Africa recently built a data centre in Gabon with that country's government. Public-private partnership was defended as advantageous because the two sides offer different things: **the public side can provide regulatory power and mandate while the private side often outperforms in deployment speed and technical precision.** Public administration alone tends to be slow.

In the dominant PPP model, the government owns the facility but lacks the internal technical competency to run it so that operation goes out to tender. The majority of winning bids tend to come from **foreign companies partnering with local firms.** Even though the infrastructure and the data stays local, the operation does not, which means that **the earnings from that operation leave the country.** Local partners do accumulate competence through those partnerships, but it shows that training in operations is key to ensure that earnings stay local.

Part II - Software: Licences, Open Source and the Question of Capability

The second round looked at software. Once data centers and infrastructure are established, something has to run on it: code, platforms, algorithms, data governance. The framing question was whether open source is a route to genuine software sovereignty, or simply a different form of dependency.

Beyond the Licence: Technology Transfer as Strategy

The discussion started with the observation that the general practice of buying licences from a handful of global vendors is clearly in conflict with any claim to sovereignty. The alternative proposed was to **restructure the dynamic of the partnership**, using an analogy from aviation. African carriers historically operated fleets they often did not own. In a more recent model, an airline entering a partnership placed its own young engineers alongside the partner's engineers on the project itself, so that operating the technology became a route to a **technology switchover** rather than a purchase. The generalised principle is then to move from commercial partnerships to **long-term operational partnerships**, in which training local engineers to eventually take the lead is written into the arrangement from the start.

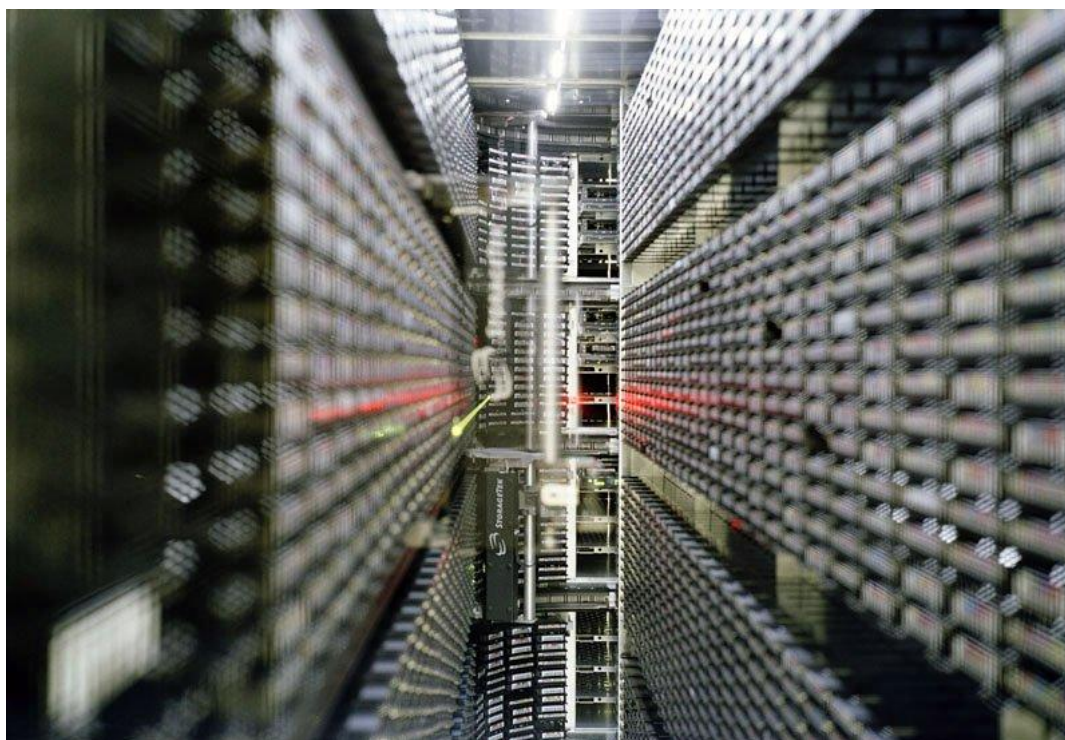
Vincent pointed out that this is harder than it sounds: **intellectual property constrains such practices.** Engineers who learn on proprietary systems cannot simply carry that knowledge into a domestic equivalent, and the legal frameworks governing what can and cannot be transferred are more advanced in some jurisdictions than others.

Open Source as a Leveller

While open source is a promising approach, the cost does not disappear. Instead, **it changes form**. The price of licences turns into the price of capability. Whether this constitutes sovereignty or a new dependency depends entirely on how it can be used. One instructive case is China's acceleration in AI: local capability was built on top of existing open-source work and materials from early work by tech giants such as Google.

Open source is a leveller. The same thing you can build in Europe, you can build in Nigeria, and deploy it on your own server locally and get it running. - Paschal Onuroah

Being untied from a foreign licence only matters if **the technology is understood well enough to retool it** to the actual local needs and requirements. The relevant question is therefore not "open or proprietary" but "do we have the talent to make open source ours".



Source: The Energy Mix, Creative Commons License

Vincent pointed to the importance of reciprocity. Open source works in both directions: if African languages, contexts and priorities are to be present in the shared stack that everyone else builds on, **African developers have to be contributing to those projects**, not only drawing from them. A community member reinforced the point from a different angle, stressing that while open source may offer a leapfrog, Africa cannot position itself as a permanent consumer of what others have built. Infrastructure for AI and software has to be built locally as well, or the leapfrog lands in the same place.

Context as the Comparative Advantage

The strongest case for local models is the inclusion of **cultural and linguistic context**, which the large models handle poorly, and which is not uniform even within a single country. Nigeria has over **300 languages**. Within one state, a single community may speak three distinct languages, changing village to village. A large global LLM model cannot help with specific local issues that might come up in rural villages.

Building foundation models from scratch would require hardware and resources that are not yet distributed across the continent. The more practical route is **taking open models and retraining them on local data and local voices**. This is already happening: one Nigerian venture is building a voice-agent platform comparable to leading US products by retraining open models on local speech, producing a system that operates in local languages. The thin coverage of GPUs across the continent and, again, the thin spread of talent are real constraints. Nevertheless, there are examples, such as DeepSeek, that show that hardware constraints can push teams towards efficiency innovations.

Community Discussion

A community member based in Portugal pointed out a European innovation that might contain lessons. **EuroLLM**, developed at European Commission level, provides a base model intended to serve all 27 member states. Portugal took that base, extended it with the country's historical and cultural specificity, and established it as a **public national resource**. In a different approach, France decided to back the private company Mistral. How both approaches pay off will be worth watching closely.

A suggested option for Africa could be a **continental base with national extension**: a shared foundation carrying the cost and the heavy lifting, extended by each country with its own languages, culture and specificity. This structure would produce something more inclusive than a model shaped predominantly by American or Chinese data.

Part III - People: Talent, Training and Government Capacity

The third round finally discussed what the previous rounds had already touched upon: capability. One key challenge is not just the training but how to retain trained talent. Speaking from his own experience in law enforcement training, Vincent shared that after people are trained, they often leave public service within one or two years, absorbed into the private sector.

Train to Apply, Not Only to Know

Without people able to design, adapt and maintain, no software, hardware and licences can deliver sovereignty. Yann presented a pilot project in partnership with GIZ in Gabon that trains young people and stressed how important it is that all sectors are included in digital training, which is why the programme also includes a middle manager in public administration. The curriculum starts with

comprehension of digital sovereignty, LLMs, and technology. Similar initiatives are running through civil society organisations in East Africa, notably Kenya.

The generational point was made carefully. Young people are the priority because they are the continent's future and are already technically close to these tools. But the older generation must not be pushed out of the game. They are the **adopters**, and they should be kept informed not only about scams, but also about how the technology itself is developing.

For younger people the goal is a step beyond literacy. Training should not stop at knowing how to work with a model; it should produce the ability to **apply that knowledge to a specific real problem**. Paschal described co-founding an NGO built on exactly that principle, focused on deep tech and hardware, where participants exit the programme having produced actual solutions to real-world problems. The transformation these technologies promise arrives through applied knowledge: In health, in agriculture, in energy.

Talent is Africa's biggest lever on the global scale. - Paschal Onuroah

Trained people may of course emigrate for better pay, but the remittances they send home contribute to development. Those who stay raise domestic income levels and, more importantly, apply their knowledge locally. Either way, investing in talent is investing in the people who will build localised solutions, provide the capital for hardware, and supply the engineering capacity ten and twenty years out. While this is the slowest lever, it is also the one with the longest reach.



Source: UN Women/Ryan Brown, Creative Commons License

Bringing the Regulator Closer

If institutions set the rules, do they understand the technology well enough to set them well? **Innovation runs ahead of regulation everywhere**, not only in Africa. There is therefore real value in considering exposure and proximity. Bringing policymakers close enough to the pace of tech adoption that the policies they write do not inhibit the growth they are meant to enable is key, as is creating channels through which young practitioners can contribute to policy thinking.

Nigeria's localisation mandate is such an **opportunity that can be capitalised on**. The reason developers default to large foreign clouds is not ideological but a matter of convenience and reliability. The mandate creates a reason for local providers to close that experience gap and make localisation attractive.

Part IV - Final Perspectives: Sobriety, Shared Bricks and Purpose

The closing round widened out from the three pillars to the connections between them.

Fit for Purpose, Not for Scale

Community member Pierre Champsavoire made the point that digital development should stay a tool for a better life rather than growth for its own purpose. Open-source **data exchange layer** initiatives already running in Rwanda and, more recently, Benin implement something close to the original promise of public data infrastructure: a single coherent layer holding public data, into which digital services can be plugged. The race developing in the US, Europe and China, does not have to be joined. Instead, starting from a more open position allows for a **more sober and purposeful way of designing IT infrastructure**.

This also has a security payoff: **fewer solutions mean less exposure**, and a smaller attack surface that is easier to defend. With that established, attention can go to equality, justice and inclusive development rather than to accumulation.

Digital transition only has a reason to be if it is designed as a tool for a better life — not for the sake of having more data centres, more AI, more, more, more. - Community member

Shared Bricks

MOSIP, the Indian open-source identity platform, was raised as an example of a technology brick multiple countries can adopt in common: shared components reduce maintenance burden and make cybersecurity far more controllable than a patchwork of bespoke national systems. In the same spirit, public blockchain can serve as a **secured, distributed transmission protocol** that offers resilience, immutability and homogeneity across systems. Vincent argued for the potential of **privacy-enhancing**

technologies: they are badly underused in solutions built anywhere in the world, and potentially valuable in Africa for enabling cleaner exchange between administrations and service providers.

What Blockchain Actually Unlocked

Despite Nigeria's high cryptocurrency adoption, it is unclear whether this has coincided with widespread understanding of the technology behind it. Adoption has been driven by **store of value** and, at points, by the ability to route around regulatory friction. But the durable application has been **payments**. Paying a supplier in China conventionally takes two to three days but cryptocurrency can move in seconds. This explains the current surge in **stablecoin** activity, visible in the partnerships and investments flowing into Nigeria's largest fintechs from global stablecoin infrastructure players.

But there was also a period when cryptocurrency functioned as a get-rich-quick scheme and **a great many people lost money**. Applications outside payments have largely not scaled: tokenising farmer data to unlock credit showed promise, music and NFT applications did not take hold. The success of cryptocurrency connects to the success of mobile phones: They spread rapidly because laying cable across the continent was impractical, and crypto and e-money spread because bank branches in villages were not viable. **Leapfrogging often happens where classical infrastructure is lagging.**

Beyond Business Intelligence

A final discussion concerned AI's role in infrastructure design. Conventional business intelligence describes **what has already happened**, while AI makes it possible to **map what could happen**, modelling multiple scenarios, which makes it a genuine input into designing systems and processes rather than only an additional reporting layer. The biggest usage payoffs are applied: computer vision helping farmers diagnose crop problems and make better decisions, and imaging capability reaching health facilities where such diagnostics would otherwise be entirely unavailable.

Vincent named **M-Pesa** as a standout example of local development for local needs. GSM networks and AI arrived as solutions that were built elsewhere and adopted because they were there. M-Pesa was designed for the continent, from the needs of the people, and that is why it worked. The question worth carrying forward is what else is **specific to the continent** that could be built the same way.

Cross-Cutting Insights

Sovereignty Is a Set of Concrete Choices

Decisions on where the data sits, who owns the infrastructure, who operates it, and who writes the code is what creates sovereignty. An organisation or a state can answer differently on each and would currently probably answer "elsewhere" on at least two.

Ownership Is Not Operation

The PPP pattern produces locally owned facilities holding local data under foreign operation, with the earnings following the operator. **Asking who holds the operational competency, and who is being trained to inherit** it is just as important as who owns the asset.

Open Source Is a Leveller, Not a Shortcut

It converts a licensing cost into a capability cost. Where the capability exists, it genuinely equalises. Otherwise it substitutes one dependency for another. The obligation to contribute furthermore runs both ways to achieve truly specific and adapted solutions.

Regulation Often Trails Innovation

The practical response to this is proximity: exposing policymakers to the pace of change, opening channels for young practitioners to shape policy thinking, and treating public servants as a training priority in their own right.

Everyone needs to be at the Same Table

Digital sovereignty is a topic beyond technical considerations and technical professionals. Public administrations, private companies and civil society organisations each hold a piece and none of the three can deliver it alone.

Conclusion

The session's throughline was that every layer of the sovereignty question resolves into the same one. Hardware fails without energy and without operators. Software fails without engineers who can retool it. Frameworks fail without civil servants who understand what they are regulating. The infrastructure can be financed, the code can be downloaded, and neither produces sovereignty on its own.

There is real ground for optimism. The continent and industry are young and offer the opportunity to build differently, with renewable energy and sustainability designed in. Open models make sophisticated capability accessible to anyone with the skill to use them. The European experience with EuroLLM offers a tested structure for a shared base extended by national specificity that could be a model worth studying. And the demographic weight, with 65% of the population under 25, is a genuine lever if it is met with training that produces application rather than only awareness.

Digital sovereignty is not only for the tech guys. Public administrations, private companies, civil society organisations — many actors have to be at the same table. —
Yann Dmitri Engoue

The key learning is that resilience is built gradually, through affordable steps rather than costly all-or-nothing transitions: one technology brick shared between countries, one cohort trained, one model retrained on local voices, one operational partnership written so that the engineers take the lead at the end of it.



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