

Revolutionizing Telecommunications Networks in Africa

An Alepo Regional Perspective

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African Telecom *Transformations*

African telecom markets have undergone massive transformations in the past two decades. Populations across markets today largely rely on mobile networks for their voice and data communication needs as fixed-line infrastructure remains weak. Demand for digital services is steadily increasing, amplified by increasing smartphone accessibility. Further, as most residents across countries are still underserved by traditional banking, Africa is the most prominent region in the world for mobile financial services.

Transformation continues to be led by the growing demand for digital services and data connectivity. With the growing potential of 4G LTE, and eventually 5G, to bring fast and widely accessible mobile broadband services to consumers, communication service providers (CSPs) are focused on data monetization, the delivery of differentiated and competitive data services, as well

as offering a more sophisticated customer experience.

Fixed and wireline broadband penetration rates remain some of the lowest worldwide. In markets underserved by home broadband connections, WiFi hotspot networks offer the flexibility and convenience of high-speed data connections, either as standalone services or in convergence with existing mobile services.

African operators constantly confront varying market and customer behavioral dynamics. Prepaid subscribers represent a majority of subscribers in the region, and in many highly competitive markets, retention and brand loyalty presents a unique challenge.

It is increasingly important for operators to bring innovation to market faster and to be able to segment data offers at different price points in order to maintain market leadership, gain customer loyalty, and generate a swift and healthy return on investment.



Alepo, Fostering Next-Gen Data in Africa *for More Than a Decade*

Alepo has been working with leading African network operators since 2004 to enable powerful and innovative next-generation data services. The global software solutions provider has more than 25 successful deployments with greenfield and incumbent communications service providers in the region, including Tier-1 operators like Orange.

Alepo's connection with the African telecommunications sector, along with its unmatched expertise in developing digital enablement solutions, continues to empower operators to realize rapid service innovation and network excellence over their competitors.

With exceptional regional and domain knowledge, Alepo is well-positioned to help African operators succeed. Having worked directly with diverse operators to solve market challenges such as driving mobile data to attract and retain more subscribers and realizing convergence efficiently and cost-effectively, Alepo is a proven technology provider and go-to partner for all things data.

As an end-to-end solutions provider, Alepo leverages over a decade and a half of organizational expertise in solution design, consulting, and systems integration to deliver win-win solutions for African network operators and their customers.



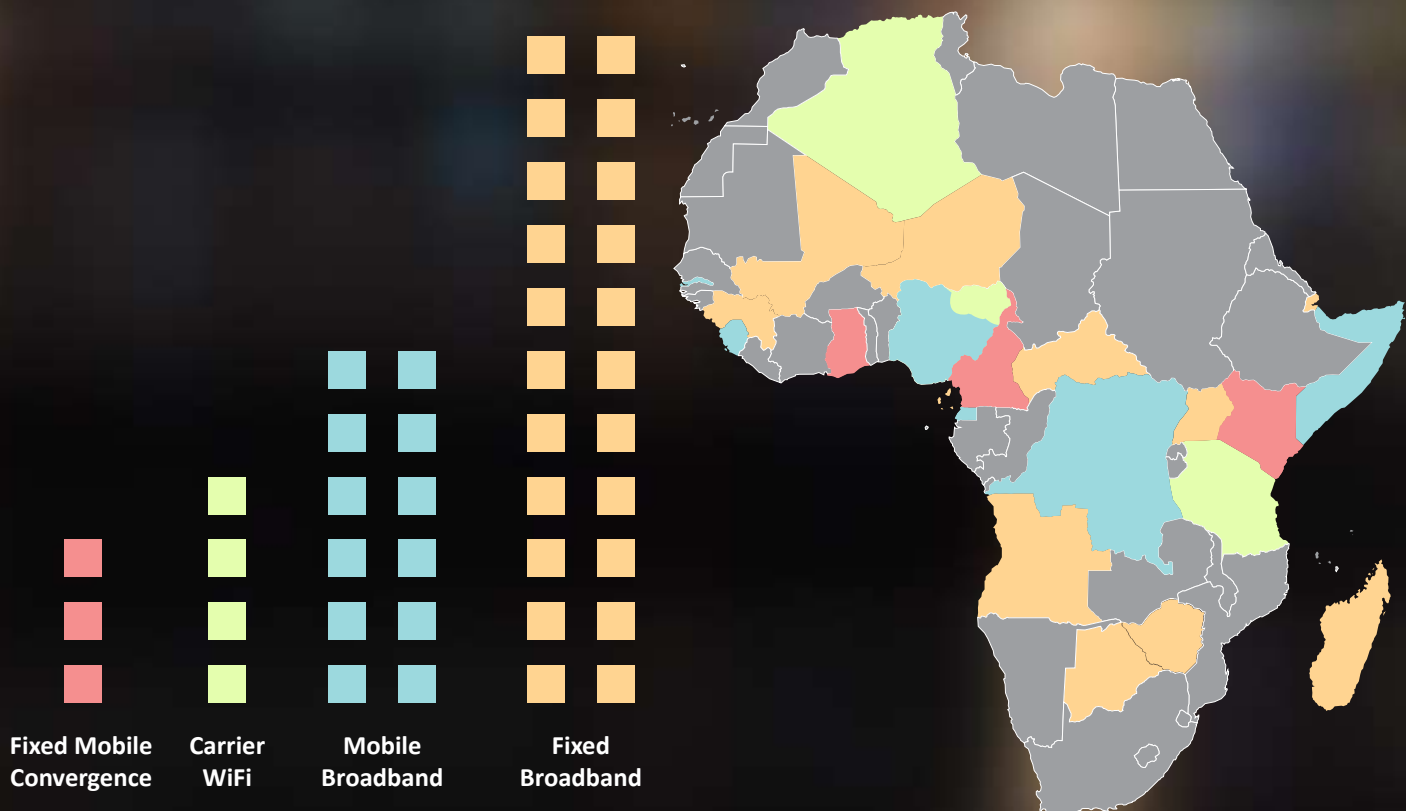
Alepo in Africa

Fact Sheet

Alepo's revenue management software and digital enablement solutions, along with professional and managed services, enable operators to achieve service and delivery excellence.

40+

Deployments in
more than 25
African Countries



An Alepo Success Story

QUICK FACTS

Client

*Tier 1 Mobile
Operator*

Operating Regions

*Four Countries
Across Africa*

www.alepo.com

PROJECT OVERVIEW

The operator is a trendsetting telecommunications company, recognized with numerous prestigious awards for its innovations. It wanted to cement its leadership by delivering a remarkable mobile data experience to its customers, including real-time subscriber engagement, personalized customer experience, and granular pricing, while gaining quicker time-to-market. The operator turned to Alepo to accelerate data innovation in its 2G, 3G, and planned LTE networks, and maximize ROI.



OPERATOR EXPECTATIONS

- > Rapid creation and launch of application-based and speed-based data passes and customer-centric promotions.
- > Fraud management through detection of suspicious subscriber patterns.
- > Real-time deactivation of user service to reduce bandwidth utilization and prevent revenue losses.

SOLUTION HIGHLIGHTS

- > Real-time service deactivation and PDP context removal.
- > Powerful policy and charging for advanced data offers.
- > Rapid offer creation and launch.
- > Automated service deactivation, eliminating the need for manual intervention.

PROJECT OUTCOMES

- > Increased revenue and new revenue streams: rapid service creation, short TTM, zero revenue leakage, and improved fraud management.
- > Powerful data monetization platform with innovative policies helped launch offerings that significantly increased consumption.
- > Reduced churn owing to an enhanced, more sophisticated customer experience.

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Alepo's PCRF solution [makes] it possible for us to harness 3G and LTE data services to increase ARPU and profitability.

- The company's CTO

An Alepo Success Story

QUICK FACTS

Client

*Bitflux
Communications Ltd.*

Operating Region

Nigeria



Its proven experience in LTE deployments gives us confidence in Alepo as a technology partner.

- Biodun Omoniyi, Director

www.alepo.com

PROJECT OVERVIEW

Soon after a soft launch, Bitflux realized the need to reinvest in further strengthening their network before a full-fledged launch. The service had to be launched in accordance with a stringent government deadline, failing which Bitflux would have lost their license. With little room for error, they turned to Alepo, as this time they wanted a partner with technical expertise who was also familiar with requirements unique to the region. Alepo provided an LTE core solution with a complete MVNO billing platform including affiliate management. The result: Bitflux was able to meet a tight launch deadline to become the first operator to offer wholesale LTE services in Nigeria.



OPERATOR EXPECTATIONS

- > Tight delivery schedule for launch of LTE services due to regulatory deadlines.
- > Complete MVNO billing solution to deliver wholesale LTE services including product catalog; multi-tenancy supported module for MVNO-to-customer (B2C) and MNO-to-MVNO (B2B) billing.
- > Flexible PCRF to create data plans and promotions on-the-fly, with good GUI, extensive data monitoring capabilities, and faster TTM
- > Integrating the system with two network vendors.

SOLUTION HIGHLIGHTS

- > LTE solution with built-in affiliate management; Alepo PCRF and Product Catalog for accelerated service creation and LTE network monetization.
- > Complete OCS and CRM with data monitoring on PCRF, enabling launch of competitive data offers.
- > Out-of-the-box MVNO billing solution with preconfigured real-time bundles, pricing plans and converged services.
- > Integration with Bitflux's legacy two-core system.

PROJECT OUTCOMES

- > Quick TTM meeting a strict government deadline.
- > Nuanced offerings right out of the gate.
- > Flexibility to keep their two-core legacy networks without a high-cost systems upgrade.
- > Improved customer loyalty with the launch of exclusive data plans.
- > Brand differentiation as an innovator.



An Alepo Success Story

QUICK FACTS

Client
Muni

Operating Region
Central Africa



With Alepo as our technology partner, we are able to deliver unprecedented quality and value of services to our subscribers based on their needs and lifestyles in real time.

- Charles Borome, CTO

www.alepo.com

PROJECT OVERVIEW

Green Com S.A., a major incumbent mobile operator in Central Africa operating under the brand name Muni, wanted to position itself as a pioneer in sophisticated mobile data offerings based on real-time business intelligence and value-added services. It selected Alepo as an end-to-end BSS/OSS solution partner to replace its legacy BSS with a system that supports new 3G voice, data, and roaming services. Alepo's BSS Transformation boosted revenues by 10% in just two months of deployment.

OPERATOR EXPECTATIONS

- > Deploy turnkey solution for BSS, policy control, VAS, mobile data and voice charging, convergent billing and charging, interconnect, and roaming.
- > Replace manual system with automated real-time billing and charging.
- > Coordinate with multiple vendors for business configuration and migrate subscribers from its legacy BSS to Alepo's next-gen BSS.
- > Reduce multi-vendor dependence by being an end-to-end solution partner.
- > Offer round-the-clock managed services support for prompt resolution of user queries and requests.

SOLUTION HIGHLIGHTS

- > Network transformation with a future-ready platform to launch new offerings and realize service, IT, and operational excellence.
- > A single back-end solution for reduced vendor dependence for resolving network issues.
- > Support for hyper-contextual data offers, VAS.
- > 24/7/365 business support.

PROJECT OUTCOMES

- > 10% increase in revenue within two months: zero revenue leakage, improved network services, faster rollout of data offers and mobile VAS.
- > 26,000 new subscribers, churn rate reduced by 7.5% in three months.
- > Increased customer engagement and customer loyalty with hyper-contextual personalized offers.



ALEPO IS THE GO-TO TECHNOLOGY PARTNER FOR

The Orange logo, consisting of the word "orange" in white lowercase letters with a trademark symbol, set against a solid orange square background.

orange™

"Alepo continues to assure us of its robust and flexible solutions. With Alepo, we have found a partner with the expertise and innovation necessary to support our customers' current and future needs."

– Ignacio Ela, CTO,
Orange-GETESA

14 Years
of longstanding partnership

16 Markets
across the EMEA Region

ALEPO'S SOLUTIONS FOR AFRICAN OPERATORS

DIGITAL BSS TRANSFORMATION

Alepo's digital business support systems (BSS) transformation replaces legacy systems to fully monetize digital experiences, improve network performance, support sophisticated business and operational processes. It enables rapid delivery, monetization, and management of the latest communications services while maintaining a low total cost of ownership.

The solution provides real-time charging and billing, digital CRM and self-care, with modules to manage revenue recovery, partners, billing and settlement for interconnect and roaming, fulfillment, and provisioning. A fully virtualized cloud-enabled framework with REST APIs and integration frameworks complete the package. In-built real-time analytics offers a holistic view of the business.

The carrier-grade digital BSS is pivotal in the implementation of next-gen technologies such as 5G and IoT, and also gives operators a fallback as 5G permeates. While helping operators become 5G-ready, the solution lets them offer a range of technologies including 2G, 3G, 4G, and WiFi. Circuit Switch Fall Back (CSFB) – an important capability in areas of the Pacific Islands that don't yet have 4G connectivity – ensures seamless fallback 2G and 3G for uninterrupted services.



LTE Enablement

Alepo is an enabler of LTE services in the Pacific, having facilitated the introduction of 4G on many islands. Its end-to-end solution is perfect for greenfield mobile operators looking to rapidly deploy LTE services or any operator upgrading to LTE. On a single integrated platform, it combines a high-performance Evolved Packet Core (EPC), including advanced policy and charging control (PCRF, OCS); Alepo's Digital BSS, and Home Subscriber Service (HSS). It extends full support for the delivery, monetization, and customer experience of multiplay LTE services.

Alepo's LTE Enablement is cost-effective and easy to implement. It uses standards-based interfaces, best-of-breed hardware (with no vendor lock-in), and software with a modular and scalable architecture. Operators can rapidly launch offers with a predefined library of use cases. Microservice and documented open REST APIs ensure future-readiness.

"Alepo is well-positioned to benefit from the growth in African market for policy-related deployments and carrier-grade WiFi, particularly among Tier 2 and Tier CSPs."

- John Abraham, Senior Analyst,
Analysys Mason

"[The solution] gives us the foundation we need to expand our services into new mobile broadband markets and technologies in ways that connect and empower our region."

- Abdourahman Mohamed,
CEO of Somcable

Carrier WiFi

WiFi remains critical to enabling access and coverage at a reduced cost. Even with 5G, it will continue to augment services and provide the last mile for many operators looking to compete with fixed-line broadband. Alepo's carrier WiFi solution caters for offload, monetization, and calling (VoWiFi). It can adapt to any partner strategy, helping operators expand their network, reduce congestion, and deliver value-based services that are compelling to customers, partners, and advertisers.

The vendor-agnostic solution works with any hardware or software stack. It is highly extendible and cloud deployable (with a virtualized on-premises option). The solution includes carrier AAA and the Alepo WiFi Service Management Platform (SMP). The SMP enables the rapid building of captive portals using common WordPress plugins and themes. It facilitates a wide range of monetization paths, including premium access through offers, vouchers, and subscriptions, and sponsored access using advertisements, surveys, analytics, and much more. All through a business-friendly intuitive interface unrivaled in the market.

Alepo's WiFi offload easily and securely supplements a cellular network's capacity, helping alleviate spectrum congestion and utilize bandwidth more effectively. It delivers consistent, high-speed data services over a mix of different network types while reducing delivery costs. Small Islands combined with a large tourist footfall make WiFi offload and monetization a way to both provide coverage and new monetization opportunities.

"It's crucial that we meet demand by expanding our market share in intelligent and cost-effective ways. Our continual partnership with Alepo has provided us with these tools."

-Mihayo Wilmore, CEO, UhuruOne



Data Charging

(Data OCS + Digital BSS)

Contextual data offers, bill collection interactions, personalized experiences, multichannel, and omnichannel subscriber-driven interactions are essential for market success. Alepo's advanced data charging facilitates these capabilities, covering the use cases that allow operators to compete on value as well as price. The solution can be implemented in a pure Alepo stack, or it can also be an adjunct to third-party core billing and charging capabilities. Standards are followed wherever they exist. A REST API gateway simplifies integration with non-standards-based network elements.

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At Spectranet, we are committed to improving broadband penetration, promoting information and computer technology operations, and increasing customer satisfaction. With Alepo, we found a partner with the experience and innovation necessary to support our business as we expand our operations and offerings.

- David Venn, CEO,
Spectranet, Nigeria



AAA Transformation

A modern AAA is pivotal to most digital transformation strategies. Alepo's class-leading carrier AAA empowers service providers to optimize network performance for wireline, WiFi, and 3GPP mobile networks alike.

CSPs can create new business plans and bring innovative products to market quickly. The feature-rich product can be implemented without disrupting existing services. Its open and flexible architecture allows rapid and cost-efficient deployment, including integration with third-party and legacy systems.

Newer compilers and programming methodologies improve network capacity. Advanced features such as proactive alerting, automated recovery, as well as offline modes, assist in ensuring a more resilient network. Multifactor authentication using any attributes of the session not only improves security but increases performance and efficiency.

For xDSL and other wireline networks, AAA infrastructure serves as an important service and policy control framework, enabling internet service providers to control how their subscribers access and consume IP data services.

The AAA can be deployed as standalone and is also an adjunct to Alepo WiFi SMP or Digital BSS.

"We needed a proven and reliable solution to be able to deliver a wide range of mobile broadband services to our growing customer base. With its robust and advanced features, Alepo's AAA server has exceeded our expectations."

-Carlos Carvalho, CTO,
Angola Communications
Systems (ACS)

5G Core

Alepo supports both a gradual and rapid transition to implementing and monetize 5G. It offers key components of the 5G core, consisting of a robust authentication framework and other components, as well as a 5G-ready digital BSS.

Alepo's 5G core uses a service-based architecture, open REST APIs, and is fully virtualized. For authentication, it combines AUSF, UDM, UDR, HSS/HSS-GW to provide secure, flexible, and scalable authentication framework.

The solution supports the unified management of 4G (EPC, IMS), C-IoT, and non-3GPP networks (such as WiFi) along with 5G. 4G mobile operators with a 5G-compatible core can deploy 5G radio while leveraging their existing 4G deployment.

Operators not looking to move to 5G can bridge the gap by creating a modern omnichannel experience for subscribers, incorporating WiFi offload into their network, and supporting unique enterprise offerings around IoT.

Mobile Financial Services

Alepo's Mobile Financial Services is a private blockchain-secured platform that offers unparalleled levels of auditability and transaction integrity.

Operators can create a digital money ecosystem using any combination of the modular services, such as microcredit, microloans, a credit scoring engine, and promotions. One or more of these modules can also be integrated with an existing ecosystem.

The future-proof platform is extendible and employs open RESTful APIs to facilitate integrations with third-party as well as Alepo products. It is cloud-enabled and virtualized, offering the flexibility to be deployed on cloud, on-premise or as a hybrid.

Access channels include a mobile app for iOS and Android, web, USSD, QR codes, cards, and bulk upload.

The platform also offers interoperability, enabling transactions between different mobile money systems.

Business Benefits of Alepo Solutions

- > 100% project delivery success rate ensures reliability.
- > Rapid service creation and monetization of services.
- > Increased revenue, market share, and improved customer experience.
- > Flexible, scalable, and ready-to-deploy frameworks for greenfield and incumbent operators.
- > Enhanced operational efficiency level and reduce CAPEX and OPEX.
- > Ease competitive pressure with innovative business plans and use cases.
- > Service differentiation that attracts more customers and retain existing customers.
- > 24/7/365 support backed by an experienced team of engineers, project managers, integration specialists and SMEs.



"Alepo is one of our longest-standing technology partners. With the [BSS] upgrade, we can better serve our customers with real-time communications, data promotions, and service delivery."

- Ignacio Ela, CTO, Orange-GETESA

About Alepo

Alepo makes next-generation data opportunities a reality, creating advanced software solutions and services that enable global communications service providers to accelerate revenue growth, market share, and business success on fixed and mobile broadband networks. For over a decade, Alepo has been the go-to technology partner for all things data at leading service providers.

Established in 2004, Alepo is a mature technology solutions provider based in Austin, Texas, with a presence in all regions of the world.

For more information, please visit www.alepo.com

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