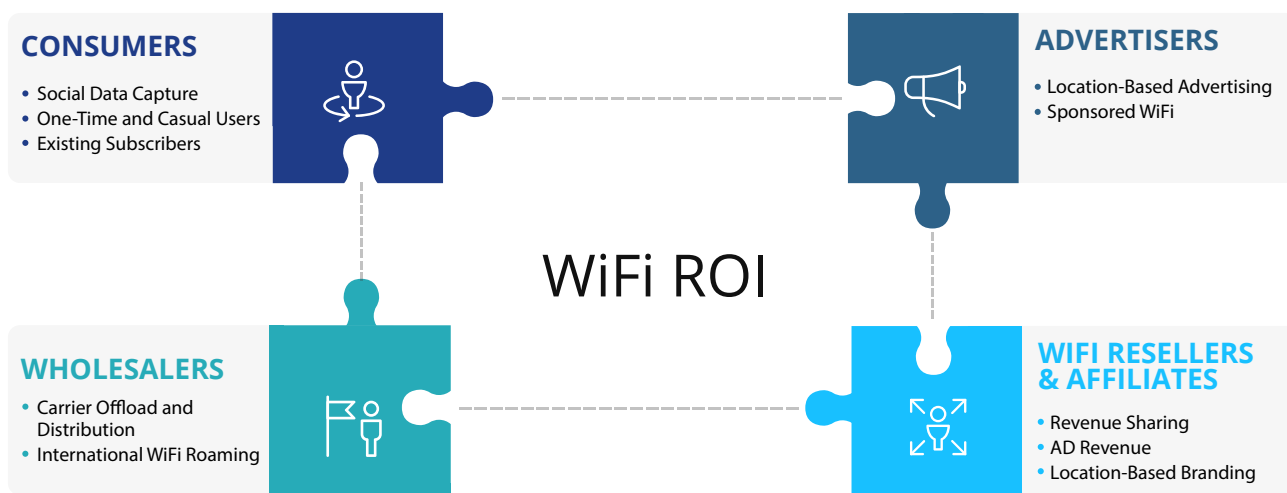# Carrier WiFi in the 5G Era

Introduction

With 5G transforming networks and their applications, WiFi, rather than becoming irrelevant, is expected to play a strong supporting role. It will augment 5G services and provide a last-mile for operators looking to compete with fixed-line broadband. Further, the increasing number of devices per household and newer applications such as IoT contribute to the rising demand for network density. Next-gen WiFi 6, with its improved speeds and performance, means that WiFi will remain critical infrastructure.

"The global value of WiFi is estimated to reach $4.9 trillion by 2025" - Telecom Advisory Services, WiFi Alliance

WiFi is flexible, high-performing, and cost-effective. But ROI remains a challenge. How can carriers overcome this challenge? By focusing on subscriber experience and having a single platform to support a variety of monetization channels to engage not just consumers but also businesses with ROI remains a challenge.

Direct monetization, that is charging for WiFi access, is a valid but declining revenue channel. Other monetization opportunities play an increasingly important role. These include advertising, analytics, SME solutions, IoT, and others, as well as using WiFi as a differentiator or last mile for mobile broadband. The combination that makes the most sense depends on the operator's context, but regardless, it is likely that more than one monetization channel will be needed for ROI.
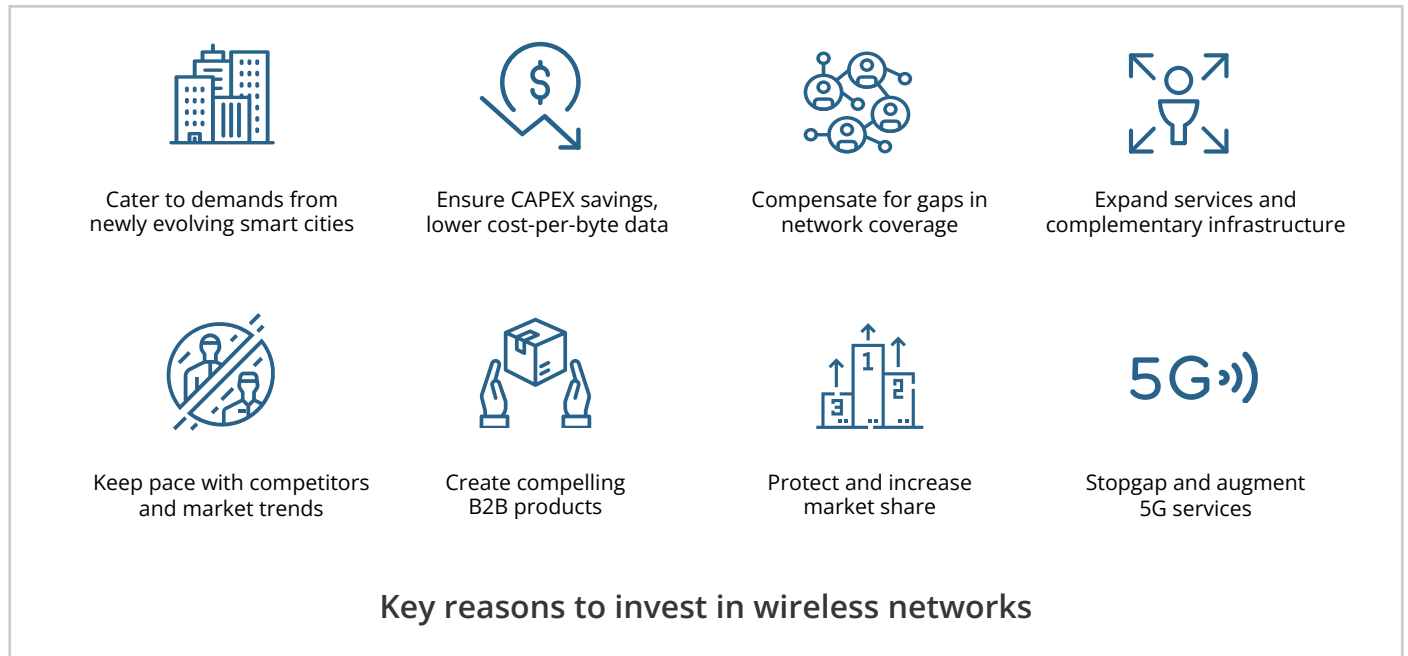

CONSUMERS
- Social Data Capture
- One-Time and Casual Users
- Existing Subscribers

ADVERTISERS
- Location-Based Advertising
- Sponsored WiFi

WiFi ROI

WHOLESALERS
- Carrier Offload and Distribution
- International WiFi Roaming

WIFI RESELLERS & AFFILIATES
- Revenue Sharing
- AD Revenue
- Location-Based Branding

Business models to generate high return on investment (ROI)

To support multiple use cases and integrate with a carrier's mobile core network it is essential to have a carrier-class WiFi solution that is high-performing, scalable and offers a rich API integration layer for various IT systems, BSS/OSS as well as multiple protocol interfaces for mobile core networks.

https://www.wi-fi.org/system/files/Global_Economic_Value_of_Wi-Fi_2021-2025_202109.pdf
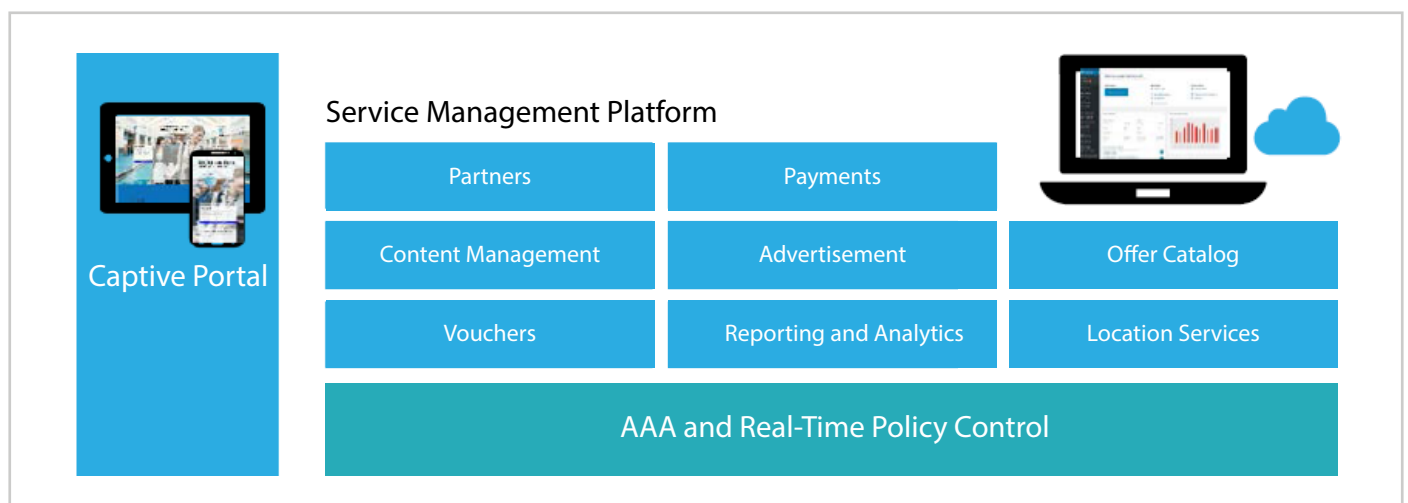
Alepo WiFi Service Management Platform (SMP) is built to maximize ROI, support modern and diverse use cases, and run on virtualized architecture that can be implemented on-premise or on a public cloud. The platform supports partnership models, enterprise customers, and integration with the core network.

Drivers for Carrier WiFi

Cater to demands from newly evolving smart cities

Ensure CAPEX savings, lower cost-per-byte data

Compensate for gaps in network coverage

Expand services and complementary infrastructure

Keep pace with competitors and market trends

Create compelling B2B products

Protect and increase market share

Stopgap and augment 5G services

Key reasons to invest in wireless networks

Alepo's Carrier WiFi

An all-in-one, cloud-deployable, virtualized solution that covers captive portals, vouchers, partner management, advertising, analytics, and much more. The monetization component, Alepo WiFi SMP, minimizes deployment and configuration costs while maximizing monetization opportunities.

Captive Portal

Service Management Platform

Partners	Payments
Content Management	Advertisement	Offer Catalog
Vouchers	Reporting and Analytics	Location Services

AAA and Real-Time Policy Control

WiFi SMP architecture

alepo

Solution Highlights

- All-in-one solution covering monetization and offload
- Wide range of business models: B2B, B2C, B2B2C
- Wide range of monetization paths: vouchers, surveys, premium access, advertising, analytics, and more
- Vendor-agnostic solution that works with any hardware or software stack
- Cloud deployable (virtualized on-premises option)
- Built on WordPress for easy customization, plugins, helping you gain a business advantage

> **Alepo's modern and advanced WiFi solution is the perfect fit for us: it enables us to maintain our focus on providing high-quality innovative services with an unmatched customer experience while maximizing our revenue potential.**
>
> **Yoganaden Samy,**
> **Principal Telecom Engineer,**
> **Mauritius Telecom**

Solution Features

Built for ROI

Rapidly create and provide services through paid and promotional journeys. Centralized product management reduces the complexity of the new plan configuration, facilitating the creation of differentiated and unique offerings. With a host of plugins and a powerful mobile and browser-based analytics tool, CSPs can easily build advertisements, surveys, and location-based offers. All this enables them to create new revenue streams while reaching a wider range of customers.

Carrier Grade

The solution is standards-based and works with any access controllers and access points over RADIUS, Diameter, HTTP, and XML. It includes a carrier-grade, best-in-class, 3GPP compliant, robust AAA. The AAA, with real-time policy control, enables seamless integration with the existing IT and mobile core. Having partnered with dozens of operators serving millions of customers, Alepo has the experience and capacity to handle any size of WiFi deployment.

Any Network Stack

Alepo WiFi SMP is vendor agnostic, simplifying integration and enabling operators to build a best-of-breed stack that is not only technologically advanced but also future-proof. The solution is field-tested, has been integrated with all major WiFi access network providers, and is interoperable with various access networks.

Built on WordPress

Modular, familiar, and easy to extend and customize, Alepo WiFi SMP combines the power and simplicity of WordPress with a carrier-grade virtualized management layer, supporting you, your customers, your partners, and their customers to create new revenue streams while reaching a wider range of customers.

Partner Management

CSPs can work with affiliates, partners, and resellers through partner hierarchies, partner-specific voucher creation, and win-win revenue-sharing and commissioning agreements.

Advanced Security

The unified SMP offers simple and cost-effective web security to prevent unauthorized access: password strengthening policies, two-factor authentication, and disabling access to inactive users.

Flexible Deployment Models

Private Cloud | **SaaS** | **NFV** | **Hybrid Cloud** | **Appliance**

Carrier WiFi Use Cases

Video Advertisements

Operators can offer sponsored WiFi where users can watch short video advertisements and gain free WiFi access. The advertisement can be displayed on the captive portal, and the operator can collect payment for every view.

Self-Care Portal

Operators can offer subscribers registered access to a unified self-care account, giving them a range of options to access the internet. Subscribers can purchase offers and vouchers, view nearby hotspots, get a holistic view of their data usage, edit their profile, and more.

Social Media and Data Capture

Customers can be required to sign in to hotspots with SMS, social media credentials, or after the completion of a survey, allowing service providers to collect user information. This data is useful for creating targeted offers using analytics or to carry out marketing campaigns.

Location-Based Analytics and Offers

Service providers can launch personalized plans and promotions based on locations and can use analytics to offer targeted advertising. In addition, they can charge resellers (for example, coffee shop owners) on a fixed rental basis or revenue-sharing agreement.

Targeted Advertisements

Operators can create personalized advertisements for subscribers based on demographics, location, interests, preferences, occupation, digital behaviors, and other parameters, all of which are captured using a survey linked to the login portal. These targeted advertisements can be displayed on the self-service and WiFi login captive portals.

Monetizing Access Journeys

Operators can monetize their WiFi network by allowing brands to advertise and have their sponsored journeys. The system randomly displays these journeys to customers, allowing them access using OTP verification, social media login, surveys, and so on. The information collected about the customer with every journey can be shared with brands for marketing purposes.

Fixed-Mobile Convergence

Customers can connect to the internet via WiFi hotspots using their broadband account credentials, either as a free value-added service (VAS) or charged to their accounts.

Voucher Management System

Customers can buy WiFi vouchers based on time, speed, and data usage. Vouchers can be made available through online payments or resellers. Operators can offer promotional and paid passes.

Solution Benefits

Maximize ROI

Monetize WiFi services for B2B, B2C, and B2B2C with ready-to-launch use cases, full partner lifecycle management, and built-in ad revenue tools.

Reduce operation and maintenance costs

Manage and monetize your offerings from a single platform. Easy cloud set up and management keeps infrastructural expenses low.

Efficiently manage partners and affiliates

Control commissions, location-based services, and partner success.

Trusted integration of WiFi and cellular networks

Successful fixed-mobile convergence, including offload, and integration with IN vendors.

Offerings to WiFi Partners and Affiliates

Multitenant Access

Each affiliate can have:

Custom Branding	Multiple Captive Portals
Revenue Sharing	Vouchers and Passes
Location-Based Offers	Targeted Advertising

Designed to derive maximum value