Altobridge lite-site™

ALTOBRIDGE™



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Today, thousands of villages remain unconnected through no form of telecommunication service.

People travel for hours to the nearest mobile phone signal to fulfil a basic human need:

to communicate.

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Company Overview

Who we are

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Altobridge is an R&D-focused, wireless network solutions provider. Our founding vision was to remove the technical and commercial barriers that denied remote communities affordable mobile voice and internet connectivity

- Since its creation in 2002, Altobridge has designed, patented and commercially deployed technology innovations that have bridged the digital divide; breakthrough solutions that enable mobile network operators, particularly in low and lower-middle income nations, to affordably connect unconnected communities

- We developed and commercially deployed the solutions behind the world's first commercial GSM service on-board passenger aircraft and the world's first commercial deployment of GSM connectivity on board deep-sea merchant maritime vessels

- To date, Altobridge has delivered first-time mobile connectivity to hundreds of remote communities in Malaysian Borneo, Indonesia, Mongolia, Niger, Ghana, DRC, the Solomon Islands, Tonga and Cook Islands and elsewhere

Customers, Partners, Investors

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Customers





















Partners















Investors







Selection of Altobridge lite-site™ Deployments

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Altobridge in Africa

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- The Altobridge lite-site™ solution is currently deployed on 3 Mobile Networks in Africa. 2 additional network rollouts are imminent



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New Market Models

Applications:
user cases

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Consumer:
- isolated remote villages
- isolated tourist areas



Corporate sales:
- corporate customer isolated operations
- e-government
- Universal service obligation (USO)



(Strategies):
- (seize territory with 2G, up-sell to 3G)
- (GSM bolt-on to existing VSAT install base)
- (macro-network infill)

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Remote community:
market segments

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Commercially viable villages :
- positive business case
- high volume
- high speed



Corporate / enterprise:
- higher revenue
- lower volume
- lower speed

Universal Service Obligation (USO):
- lower revenue
- higher volume
- lower speed



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Site selection criteria

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- Where satellite transmission is the only option
- Where power is unreliable or off-grid
- Where quick, simple, low-cost site deployment is needed because of difficult terrain
- For coverage of up to 10km in areas with no, or poor, existing service
- For capacity up to 1,200 subscribers but cost-effective for subscriber numbers as low as a few hundred
- For single isolated remote sites or clusters of remote sites

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Remote community:
drivers for market entry

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- Higher ARPU from 100% market share, high end user capture and zero churn (no business case for competitor)
- New incremental revenue from new subscribers and increased mobile terminating voice and SMS traffic
- Lower OPEX from less interconnect fees because most traffic is on-net
- Low subscriber acquisition cost because handsets just 'appear‘ on the network when it is switched on
- Lower TCO, ROI from lower CAPEX and near-zero OPEX because the technology is now available (Altobridge lowest transmission bandwidth; lowest power consumption; lowest site cost)

Barriers to extending service

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Transmission	Power	Site cost
		
No line of sight for terrestrial transmission	Unreliable/off-grid diesel generator = $$$	Traditional infrastructure not economically viable
Satellite transmission	**Solar power**	**Minimize site cost**

Altobridge advantage

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Lowest transmission bandwidth utilisation:

50 kbps for 2 TRX (4 kbps per call)

Lowest power consumption:

90W typical for 2 TRX (2 x 10W RF output power), enabling solar-power-only sites

Lowest site cost:

The all-in-one, compact altoPod™ enables a simpler, quicker to deploy, and lower cost site than with traditional BTS

These benefits enable mobile coverage in isolated communities where traditional solutions are not economically feasible

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Altobridge lite-site™
commercials

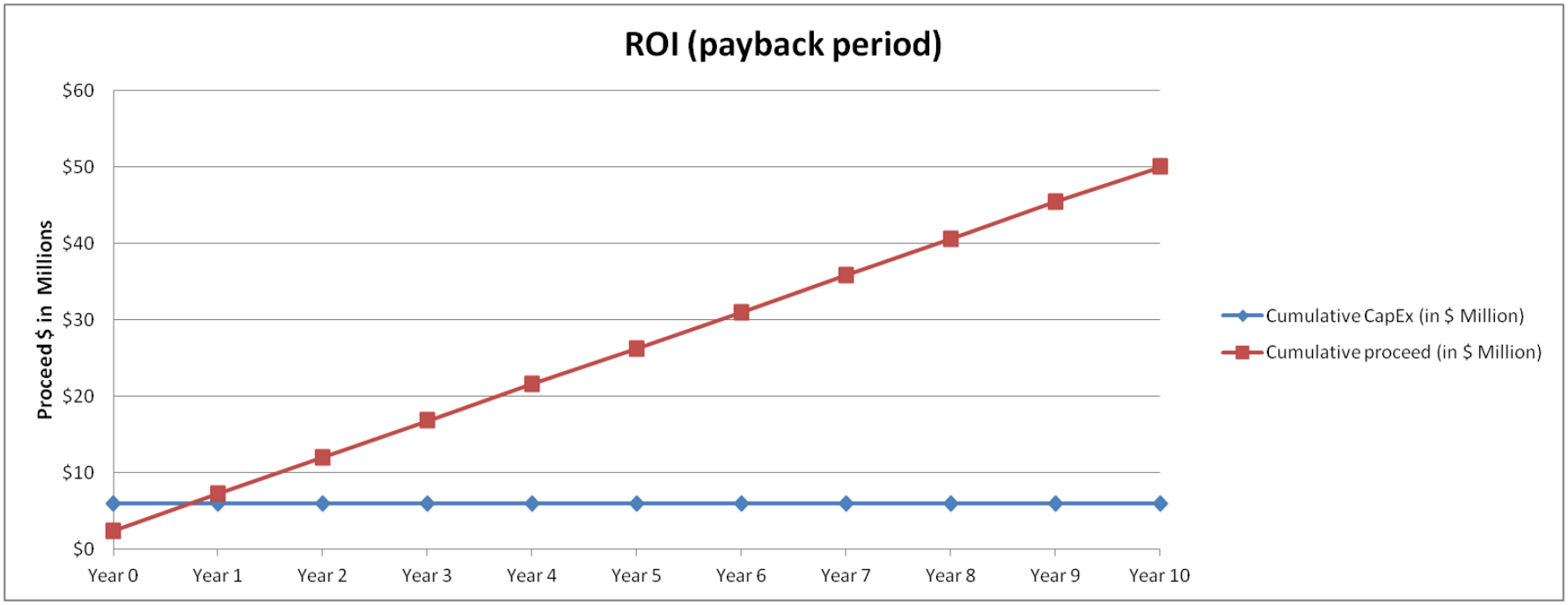
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- Low CAPEX and near-zero OPEX of the Altobridge lite-site™ enables a Return on Investment (ROI) in the order of 1 year
    - $50k CAPEX for complete site including BSS, transmission, power and infrastructure
    - $250 OPEX/month for VSAT backhaul
    - $0 OPEX/month for solar power
- Market monopoly (no business case for competition) with zero subscriber acquisition cost and zero churn
- First mover advantage: land-grab for high ARPUs

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Altobridge lite-site™
business case

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- ARPU $5.00
- # subscribers per site 1,000
- Cost per site (equipment and services) $50k

- IRR 134%
- Payback period 10 months
- EBITDA margins 80%

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Lessons learned

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Technical

- A backhaul-optimized solution can dramatically reduce CAPEX and OPEX
- When power consumption is minimized, 100% solar is viable and eliminates OPEX
- Every design decision has a ripple effect on the entire solution – keep it simple

Commercial

- Thousands of subscribers 'appear' on remote networks within weeks
- People travel from surrounding areas to communicate
- Revenues in remote areas exceed the national average

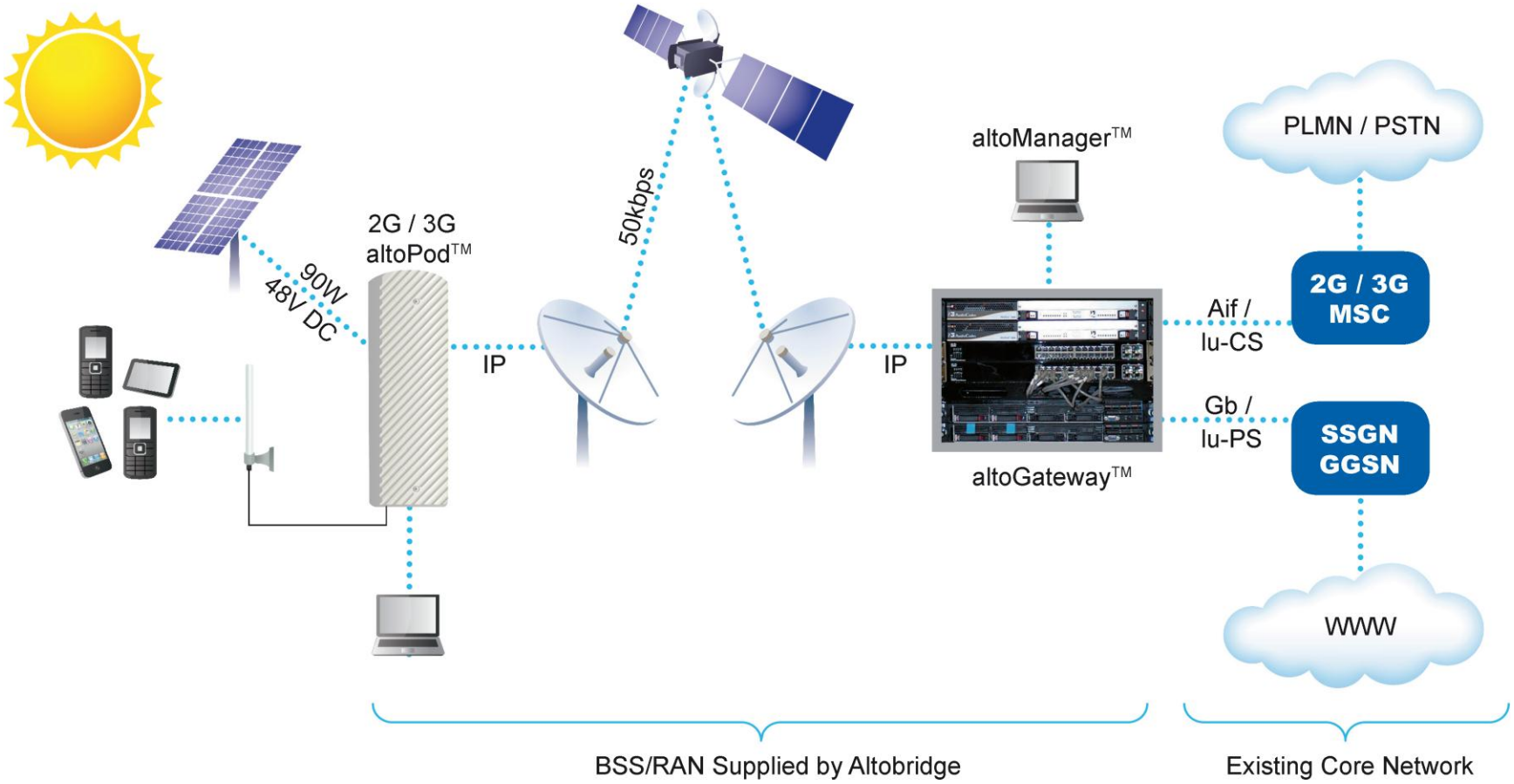
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New Technology

Lowest transmission bandwidth utilization
Lowest power consumption
Lowest site cost

Altobridge lite-site™ architecture

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Altobridge lite-site™ plugs seamlessly into existing core:
no changes required to operator's existing core network, billing or O&M

Altobridge offices

ALTOBRIDGE™

Head Office

☎ +353 66 719 0210

Altobridge Limited
Kerry Technology Park
Tralee
Co Kerry
Ireland

Indonesia

☎ +62 21 7883 0918

PT Altobridge Limited
Graha Elnusa lt. 11
Jl. TB Simatupang Kav. 1B
Jakarta Selatan
Indonesia

Malaysia

☎ +603 26953121

Altobridge Sdn. Bhd.
Level 9, Menara RKT
36 Jalan Raja Abdullah
Dang Wangi
Kuala Lumpur 50300
Malaysia

China

☎ +86 755 2606 2028

Altobridge (Shenzhen) Ltd.
Unit B, 11/F
EVOC Technology Building
31 Gaoxin Central 4th Avenue
Hi-Tech Park, Nanshan
Shenzhen, 518057
China

USA

☎ +1 408 904 0300

Altobridge Corporation
541 E. Trimble Road
San Jose
CA 95131
United States of America

info@altobridge.com

www.altobridge.com

ALTOBRIDGE™

Thank You

Simon Beard

VP, Sales
simon.beard@altobridge.com
Mobile (UK) +447710875834| Mobile (IE) +353 877 597534

www.altobridge.com