Monetizing Your Network
Beyond Residential

MARKET and STRATEGY OVERVIEW

Jeff.Brown@Calix.com

Calix

Simplify. Excite. Grow.

Nice idea, but….

- Been there, tried that

- We already have more installs than we can handle

- Too many projects already, everybody is stretched thin

- I like where we're at: "staying in our lane"

- Our top line and margins are just fine

Simplify. Excite. Grow.

What's Changing the Landscape

Cable One targets FWA competition with 100-meg broadband promo

Cable One is evidently taking aim at fixed wireless access (FWA) competition with a new promo that pitches the operator's 100 Mbit/s (downstream) broadband service, paired with unlimited data, for $25 per month for a year. The tier, which is paired with upstream speeds up to 20 Mbit/s, jumps to the regular price of $50 per month when the 12-month promo ends.

BROADBAND

Nextlink targets radical growth by riding RDOF, fiber waves

Fiber and FWA provider Nextlink Internet was the top bidder in the FCC's CAF II auction and the number six bidder in 2020's RDOF Phase auction.

Over $80B Future Public Funding for Rural US

ARPA Projects **$15B**

IIJA Broadband, Equity, Access & Deployment (BEAD) **$42.5B**

NTIA Tribal **$2B**

NTIA Tribal **$1B**

Re-Connect 3 **~$1.2B**

Re-Connect 4 **~$1.2B**

Re-Connect 5 **~$2B**

FCC USF started in 2016

Future FCC USF: CAF and RDOF $30B

2022 **2023** **2024 to 2028**

Simplify. Excite. Grow.
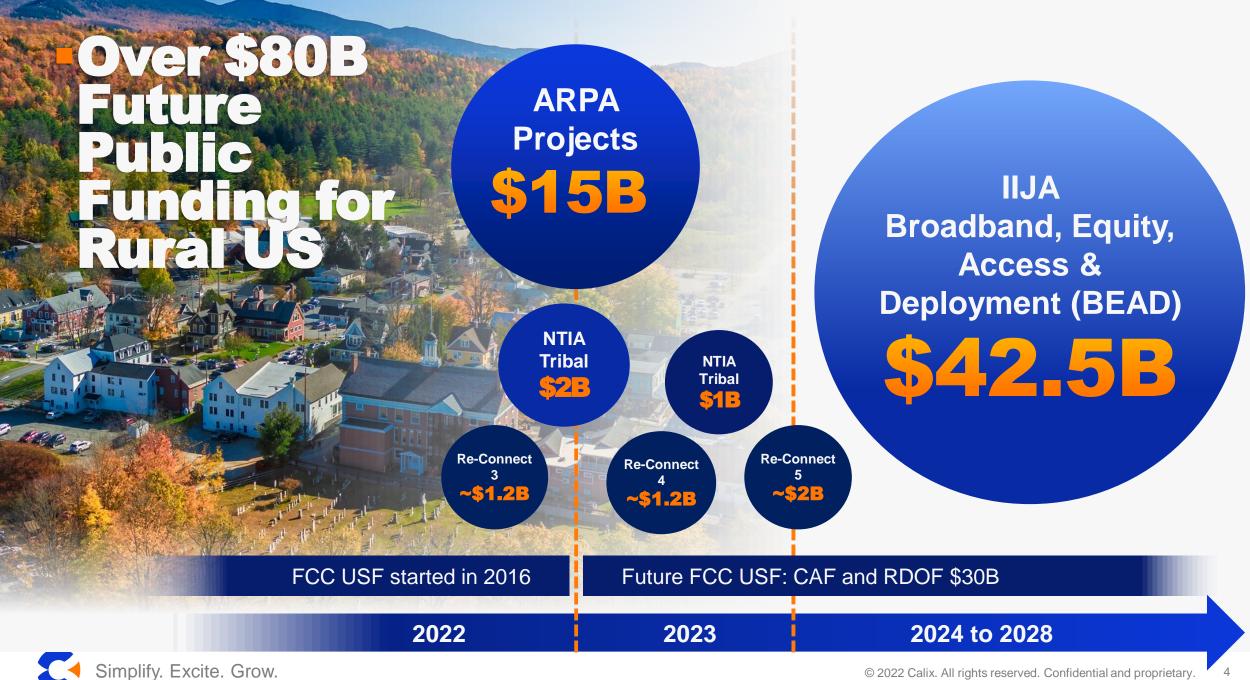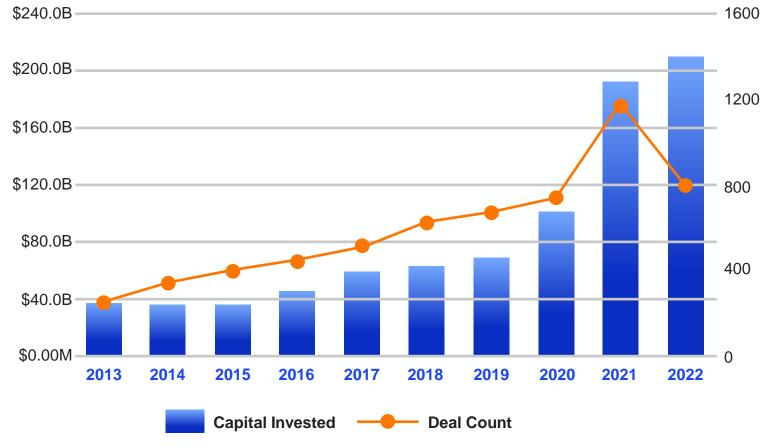
Private Funding is Growing in All US Markets

US-Based TMT Deals

$200B+

in 2022

U.S. Private Equity - TMT

Legend: ■ Capital Invested — ●— Deal Count

Simplify. Excite. Grow.

Rationale

- Competition = Margin Pressure on Consumer Broadband

- Segment diversification vs Product diversification

- Don't incent the overbuilders

- Scale with familiarity

- In-home broadband level of complexity has skyrocketed – you can do this!

Simplify. Excite. Grow.
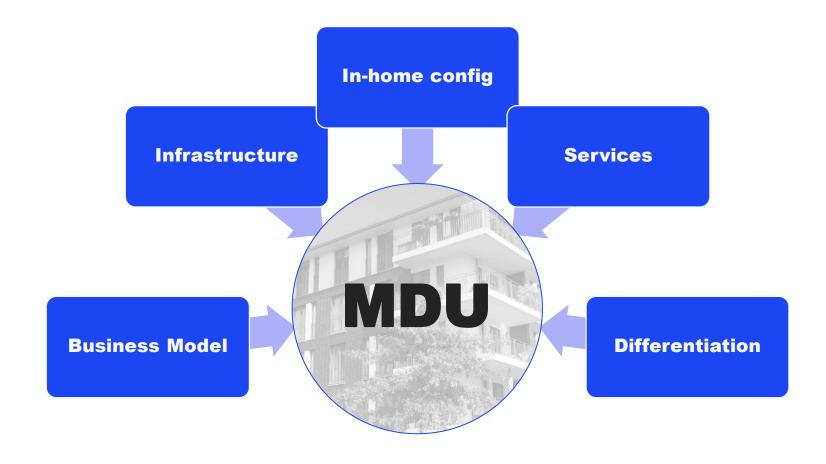
MDU or MTU Segment: Multi-Dwelling Unit or Multi-Tenant Unit

A segment with room to scale

… no cookie cutter model across markets and service providers

In-home config

Infrastructure

Services

Business Model

MDU

Differentiation

Bulk Model

Property manager is your Decision Maker

- Want to differentiate the property and meet the needs of current and future tenants

- Easy Button: Automation and self-service for tenant services (Service Left In Place, Instant On, etc.)

- No IT Staff: Don't want to be in the business of IT or troubleshooting WiFi problems → Plug-and-play network, replacement, upgrade

- Business model flexibility: bulk, retail, hybrid

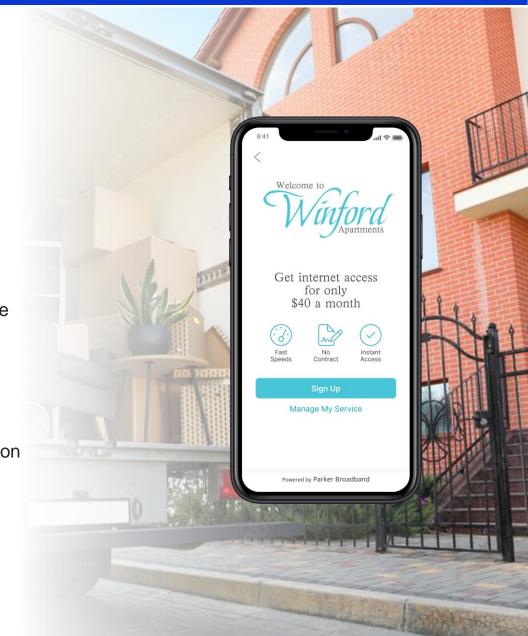# How to Stand Out and Win

Solve the Plumbing Challenges

- Solutions for every physical medium
- Wi-Fi Everywhere: Units, Hallways, Common Areas
- End-to-end tenant engagement, operations, and support

Personalized Services

- Personalized services for tenants… ready for community Wi-Fi
- Services for property managers and their staff, IoT, day guests, and more

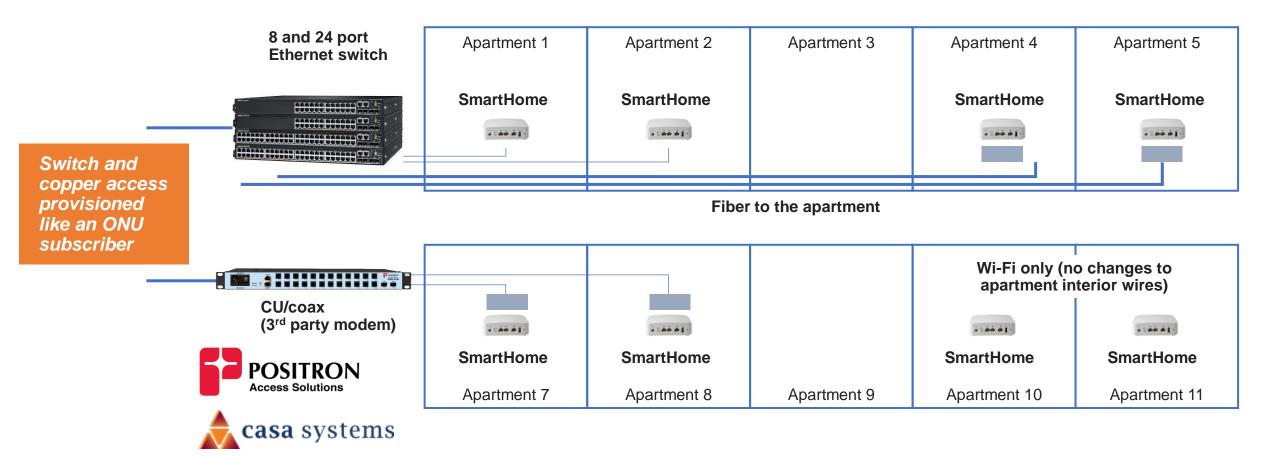## Software-driven Differentiation

- Property Manager Portal: Empowerment and workflow automation
- Service Left in Place (SLIP), Instant-On walled garden, paywall automation
- Enhanced managed services: Parental Controls, security, etc.

Solve the Plumbing Challenge

Address all physical mediums into and within the MDU

8 and 24 port Ethernet switch

Apartment 1	Apartment 2	Apartment 3	Apartment 4	Apartment 5
SmartHome	**SmartHome**		**SmartHome**	**SmartHome**

Switch and copper access provisioned like an ONU subscriber

Fiber to the apartment

CU/coax (3rd party modem)

POSITRON Access Solutions

casa systems

Wi-Fi only (no changes to apartment interior wires)

SmartHome	**SmartHome**		**SmartHome**	**SmartHome**
Apartment 7	Apartment 8	Apartment 9	Apartment 10	Apartment 11

Simplify. Excite. Grow.
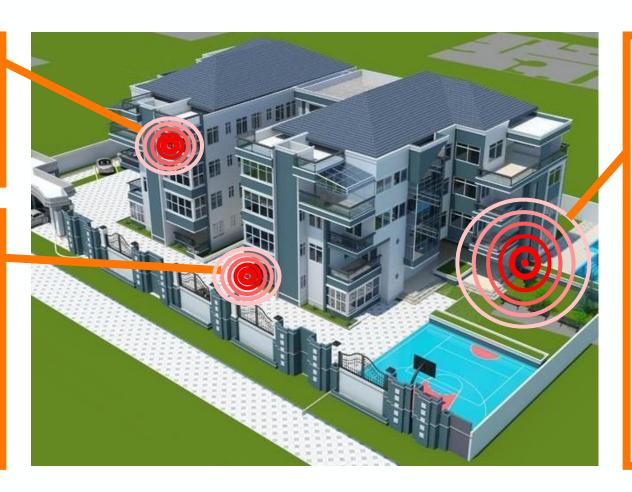
Personalized Services

Apartment Wi-Fi

Tenants and their guests have a personalized SmartHome experience

Office, Building, and IoT

Property common spaces and office set up for office, POS, visitors

MDU IoT use additional private/hidden SSIDs

Common Areas Wi-Fi (lobby/gym/BBQ/pool)

Community Wi-Fi for authenticated tenants (permanent and Airbnb)

Property management staff individually authenticated and managed

Day-use guests use splash page for Wi-Fi access
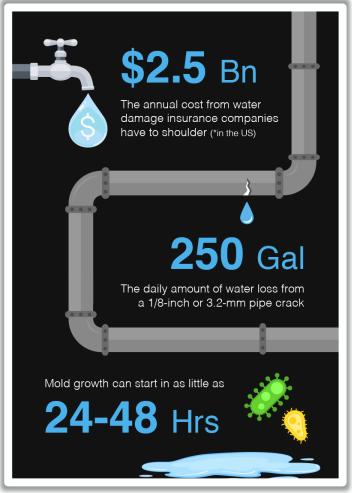
Precision Agriculture Tech adopted for MDU

Hands-free, worry-free

- WiFi – high bandwidth, AC powered, user interfaces
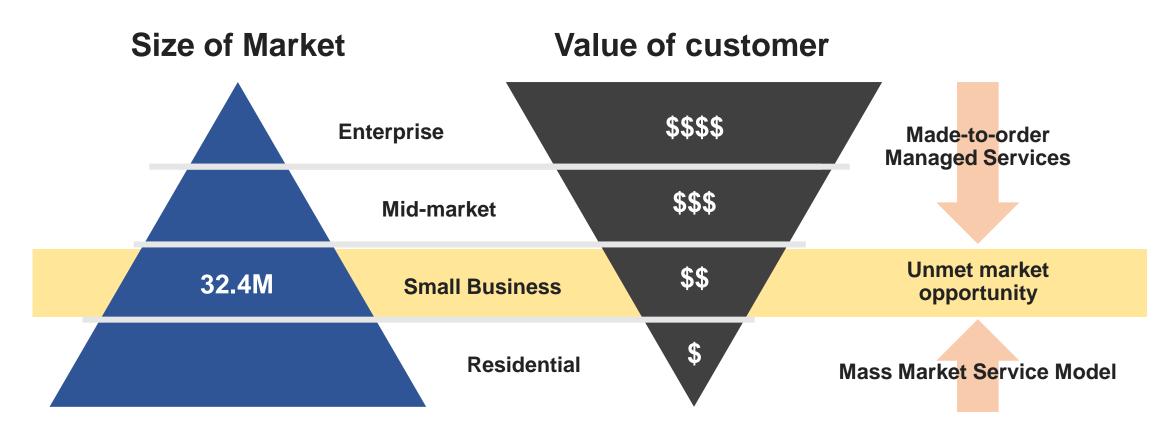- LoRa – low bandwidth, long-life battery, headless clients

LoRa Extends Water Leak Detection

SEMTECH

semtech.com

$2.5 Bn
The annual cost from water damage insurance companies have to shoulder (*in the US)

250 Gal
The daily amount of water loss from a 1/8-inch or 3.2-mm pipe crack

Mold growth can start in as little as
24-48 Hrs

Small Businesses

Calix

The untapped small business market

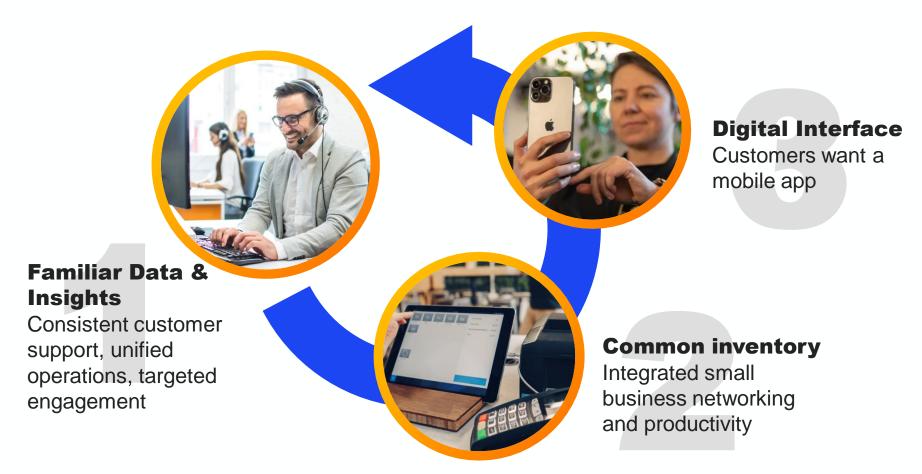Historically their broadband choices are marked up best effort consumer service, or enterprise-grade P2P/Metro E

Size of Market

Value of customer

Enterprise — $$$$

Mid-market — $$$

32.4M — Small Business — $$

Residential — $

Made-to-order Managed Services

Unmet market opportunity

Mass Market Service Model

Simplify. Excite. Grow.

The Small Business Owner's Dilemma

- Employees
- Customers
- Online presence
- Wi-Fi networks
- No IT staff
- No free time
- Point of Sale (PoS)

Small Businesses Drive Local Economies

Small BSPs are like Small Businesses

Capitalizing on this new revenue opportunity requires leveraging platforms and systems already used for your residential business

Digital Interface
Customers want a mobile app

Common inventory
Integrated small business networking and productivity

Familiar Data & Insights
Consistent customer support, unified operations, targeted engagement

Tablestakes to get started on small business

Common Platform

Deploy, manage, and market small biz services via your current platform

Digital Interface

Self-service mobile app enables subscribers to manage their network from anywhere

Restaurant/Retail Focus

Business-specific features improve productivity and network security

Network Resilience

Easy, inexpensive but reliable broadband connectivity to keep PoS going

Easy, Affordable, Few moving parts

Mobile backup

Dedicated Networks
Primary | Staff | Customer

POS network

Personalized Digital Interface

Enabling the small business owner with a BSP-branded app
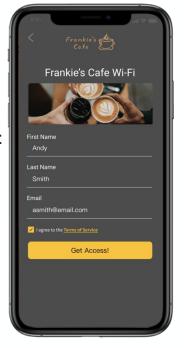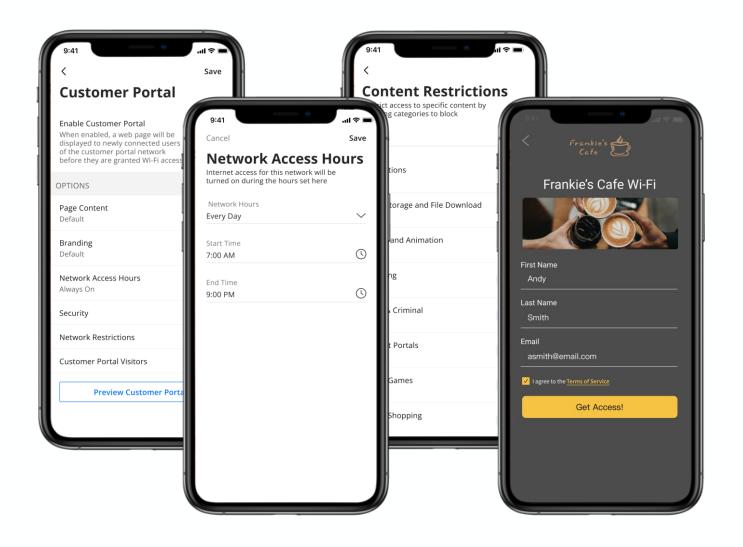

Your brand

Your brand

Premier Personalization

Business Mobile App
Owners manage and share Wi-Fi networks with staff and customers

Customer Engagement
Help business owners grow their business with the Customer Portal

SMB brand
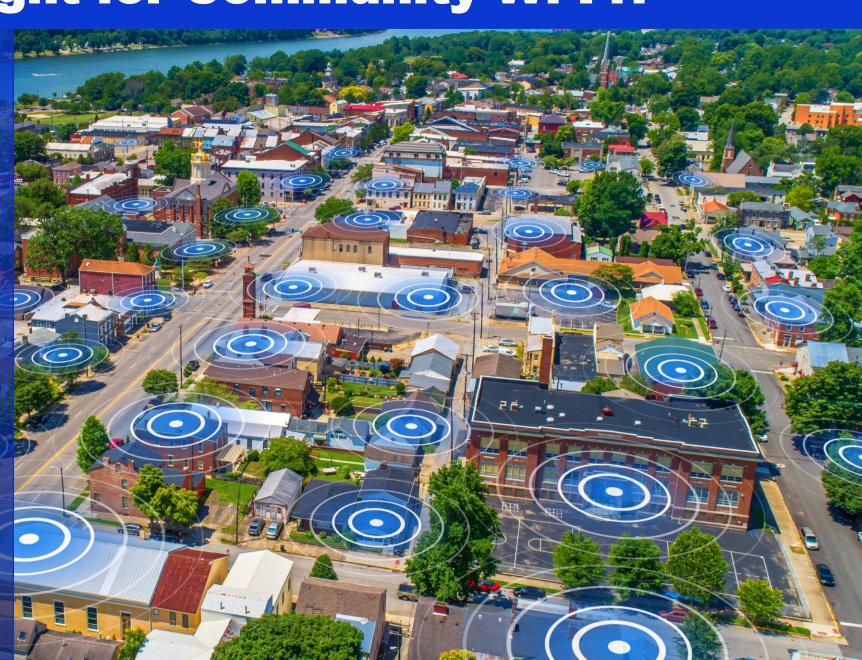
Enable Your Business Owners to Market to Their Customers

Customer Wi-Fi access portal

- Collect names, email address
- Branded welcome screen
- Customer terms of service
- Set hours of operation

Simplify. Excite. Grow.

Is the Time Right for Community Wi-Fi?

- Community-wide coverage with fiber-fed high-speed Wi-Fi

- Managed subscriber experience, authenticated by Passpoint

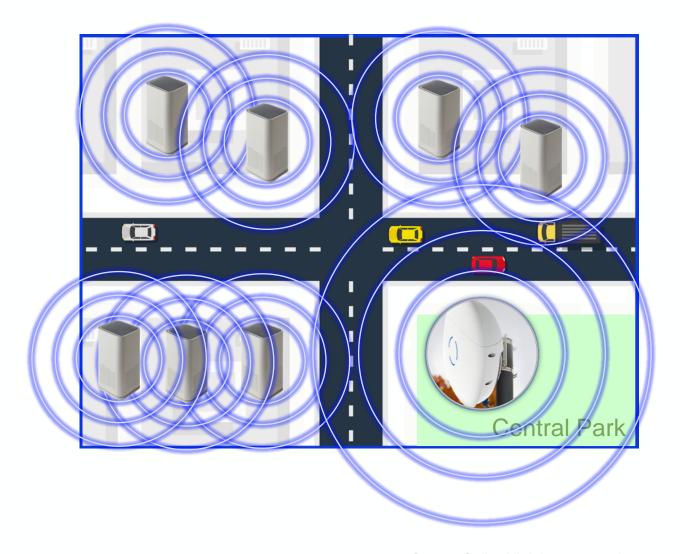- Secure, safe, and simple to use on the same platform used for residential broadband

How it works

1. Strategically add outdoor hotspots in public gathering spots.
   Low incremental capital cost

2. Existing wi-fi systems establish a community-wide Wi-Fi coverage.
   Incremental capital cost = $0

3. BSP-controlled Passpoint authentication of people & their devices

4. Safe and secure subscriber experience

Design your 'communities'

A SmartTown community is…

1. A group of **people**

2. A designated fair-use **policy**

3. A collection of Wi-Fi access **points**

Each community has its own policy tailored to the needs of the associated users, defined, managed, and supported by the BSP

Anytown High School

- "Teen 13-18 years old" content restrictions
- Students connect to public and school district hotspots

Anytown Fire Department

- No content restrictions
- Users connect to all hotspots throughout the BSP footprint

Anytown Event Attendee

- "Social Network" access
- Users connect to only the hotspots at the event location

Other Segments to Consider:

- CAI: K-12, Municipal

- Wholesale

- Mobile Operator xHaul (backhaul/midhaul)

- Precision Ag

- Traffic Management

Simplify. Excite. Grow.

Thank You WTA!

Simplify. Excite. Grow.