EdTech Sustainability:

Last Mile School Connectivity

The Republic of the Philippines

Q3 2024 to Q1 2026

Executive Summary

Pilot Project Outcomes:

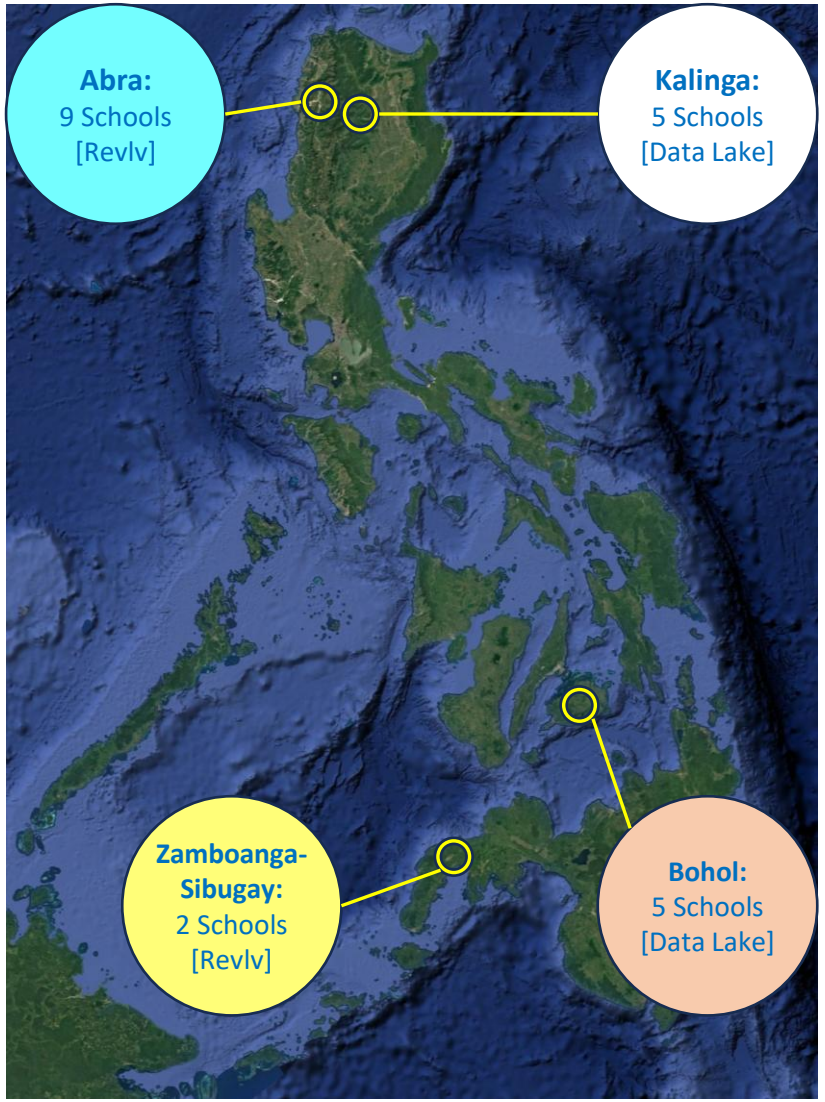
- Connectivity deployment successful across 21 schools.
- Significant positive impact on teachers and learners.
- Strong demand for digital learning services.

Key Risks & Challenges:

- Power availability / reliability.
- Need for Internet content control and usage governance.
- Limited performance monitoring.
- Concerns on Long-term sustainability [primarily financial].

Key Recommendations:

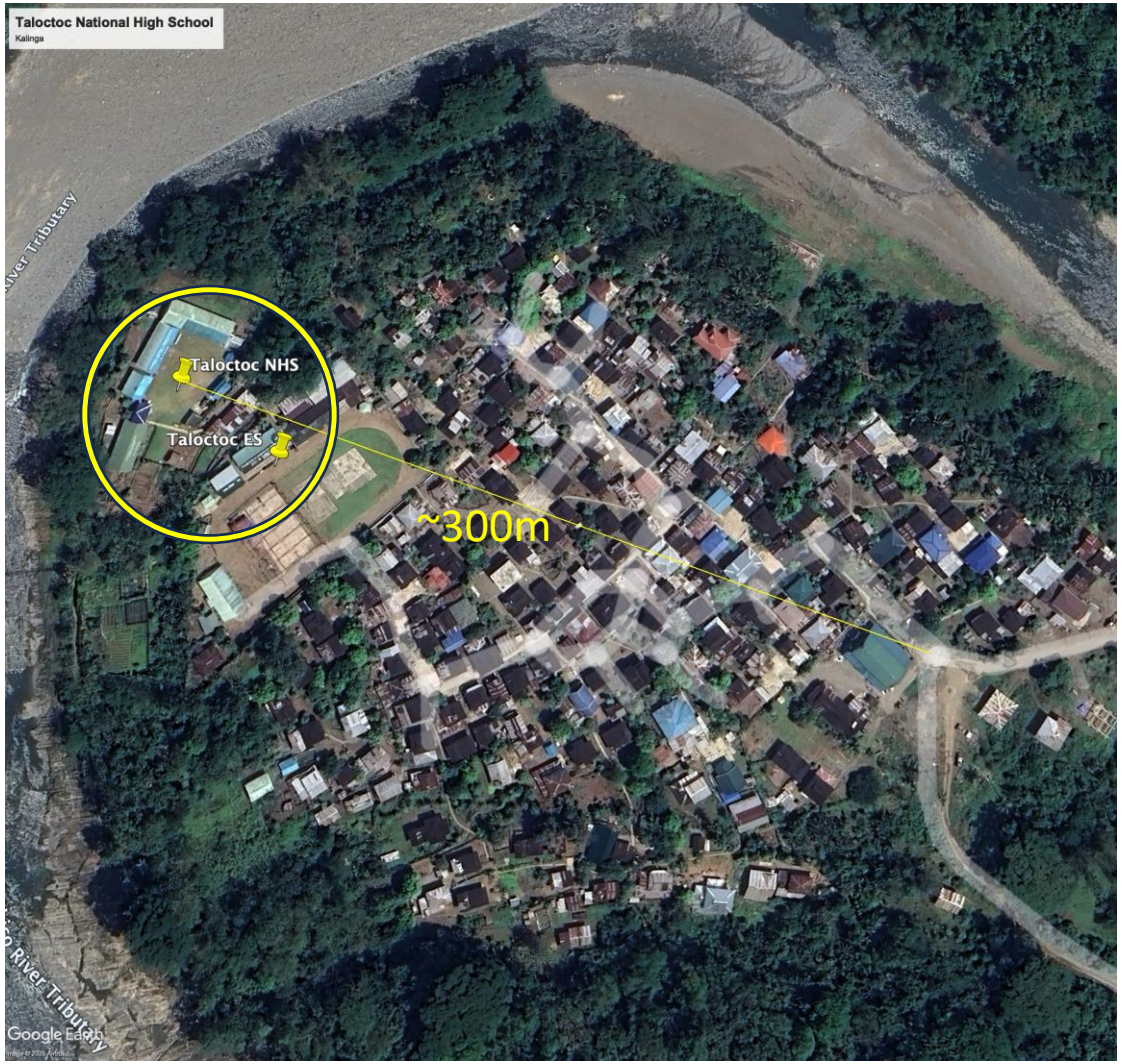
- Scale connectivity together with governance, power resilience, monitoring and sustainability mechanisms.
- Incentivize Key Vendors to maintain quality of service (QoS) through contractual SLA Management.



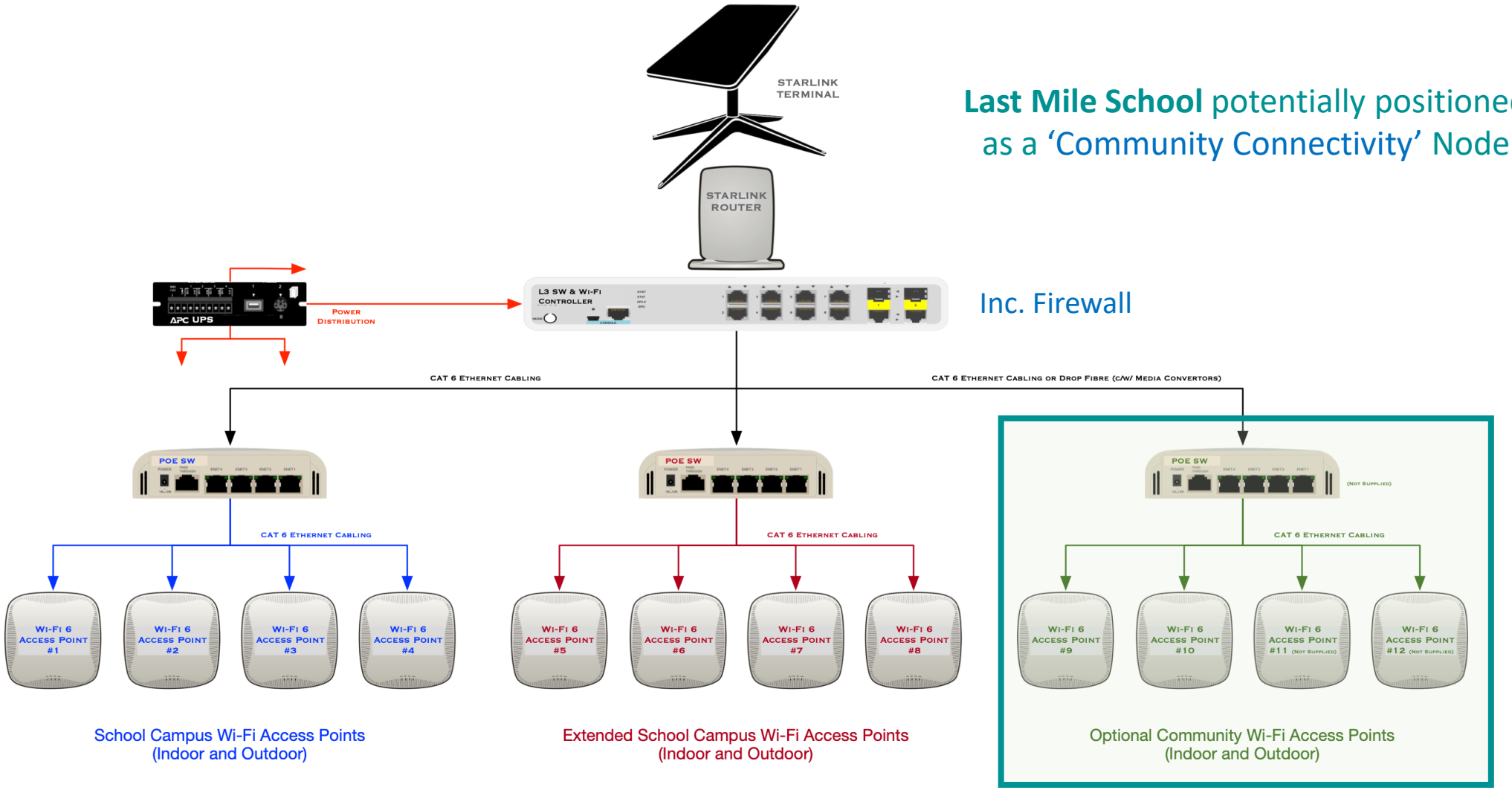
Last Mile School List

No.	National High School [NHS]	Province	Contractor
1	Langiden	Abra	Revlv Inc.
2	Quidaoen	Abra	Revlv Inc.
3	Luzong	Abra	Revlv Inc.
4	Boliney	Abra	Revlv Inc.
5	Baay	Abra	Revlv Inc.
6	Abas	Abra	Revlv Inc.
7	Supo	Abra	Revlv Inc.
8	Caganayan	Abra	Revlv Inc.
9	Naglibacan	Abra	Revlv Inc.
10	Bacalan	Zamboanga-Sibugay	Revlv Inc.
11	Sta. Fe	Zamboanga-Sibugay	Revlv Inc.
12	Calabacita	Bohol	Data Lake Inc.
13	Cambansag	Bohol	Data Lake Inc.
14	Danahaw	Bohol	Data Lake Inc.
15	San Jose	Bohol	Data Lake Inc.
16	Sta. Rosario	Bohol	Data Lake Inc.
17	Bangad	Kalinga	Data Lake Inc.
18	Batong Buhay	Kalinga	Data Lake Inc.
19	Camalog	Kalinga	Data Lake Inc.
20	Santor	Kalinga	Data Lake Inc.
21	Taloctoc	Kalinga	Data Lake Inc.

Last Mile School / Small Community Environment



Generic Connectivity : Network Topology

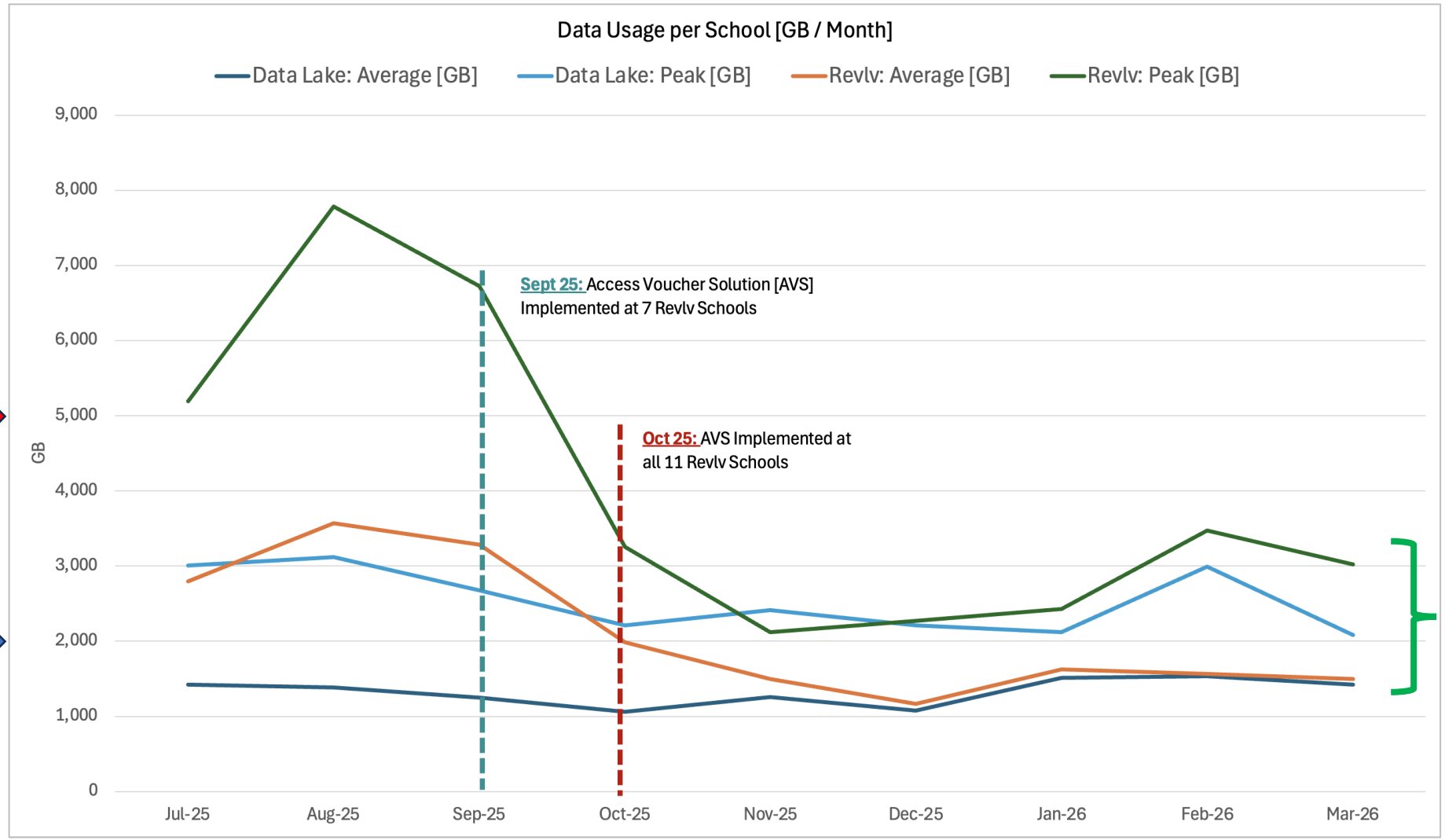


Last Mile School potentially positioned as a 'Community Connectivity' Node

Inc. Firewall

x10

‘In Field’ Observations : School Data Usage



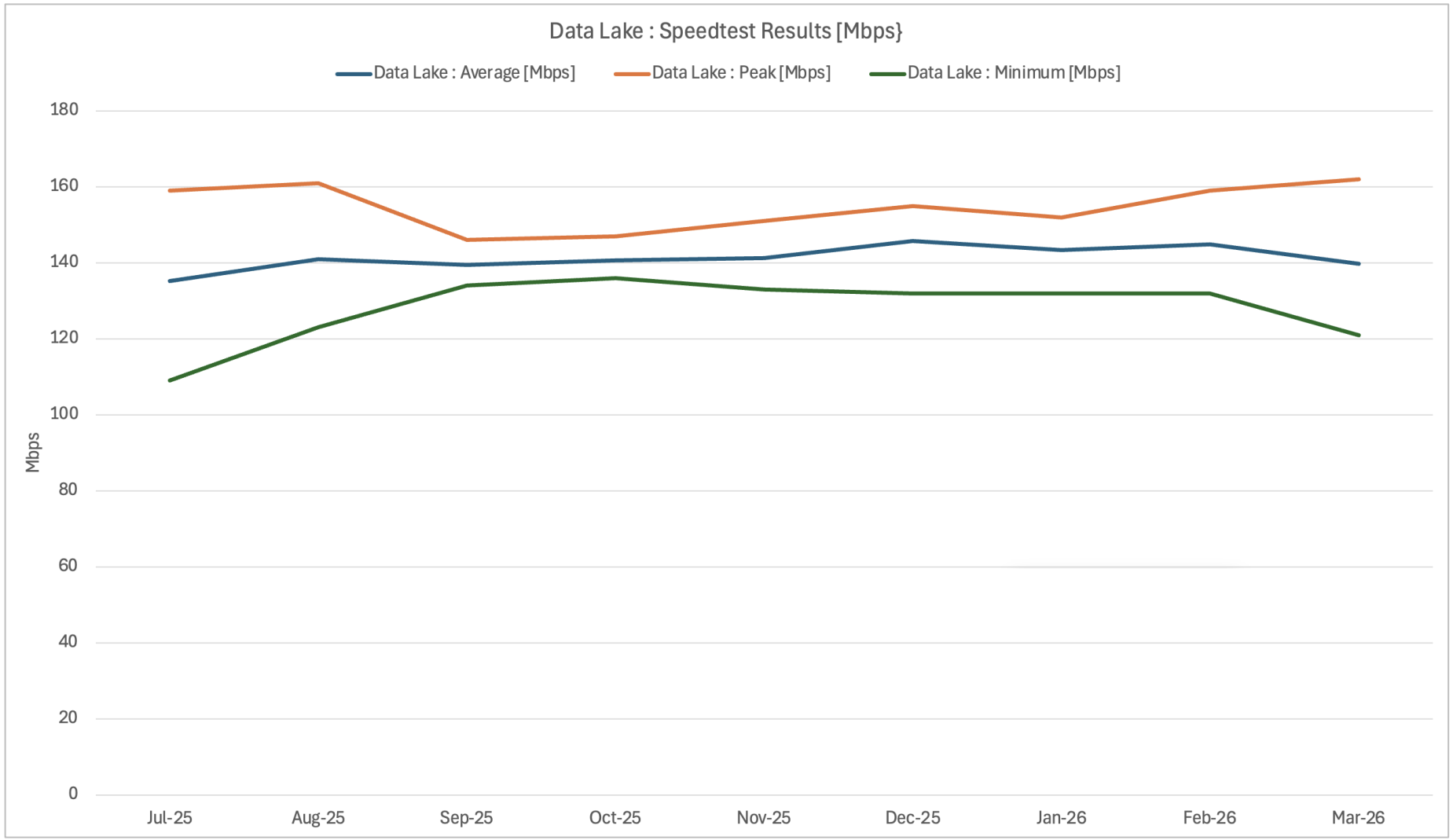
Starlink:
‘Impact Plan’
Standard Data Limit

Starlink:
‘Impact Plan’
Priority Data Limit

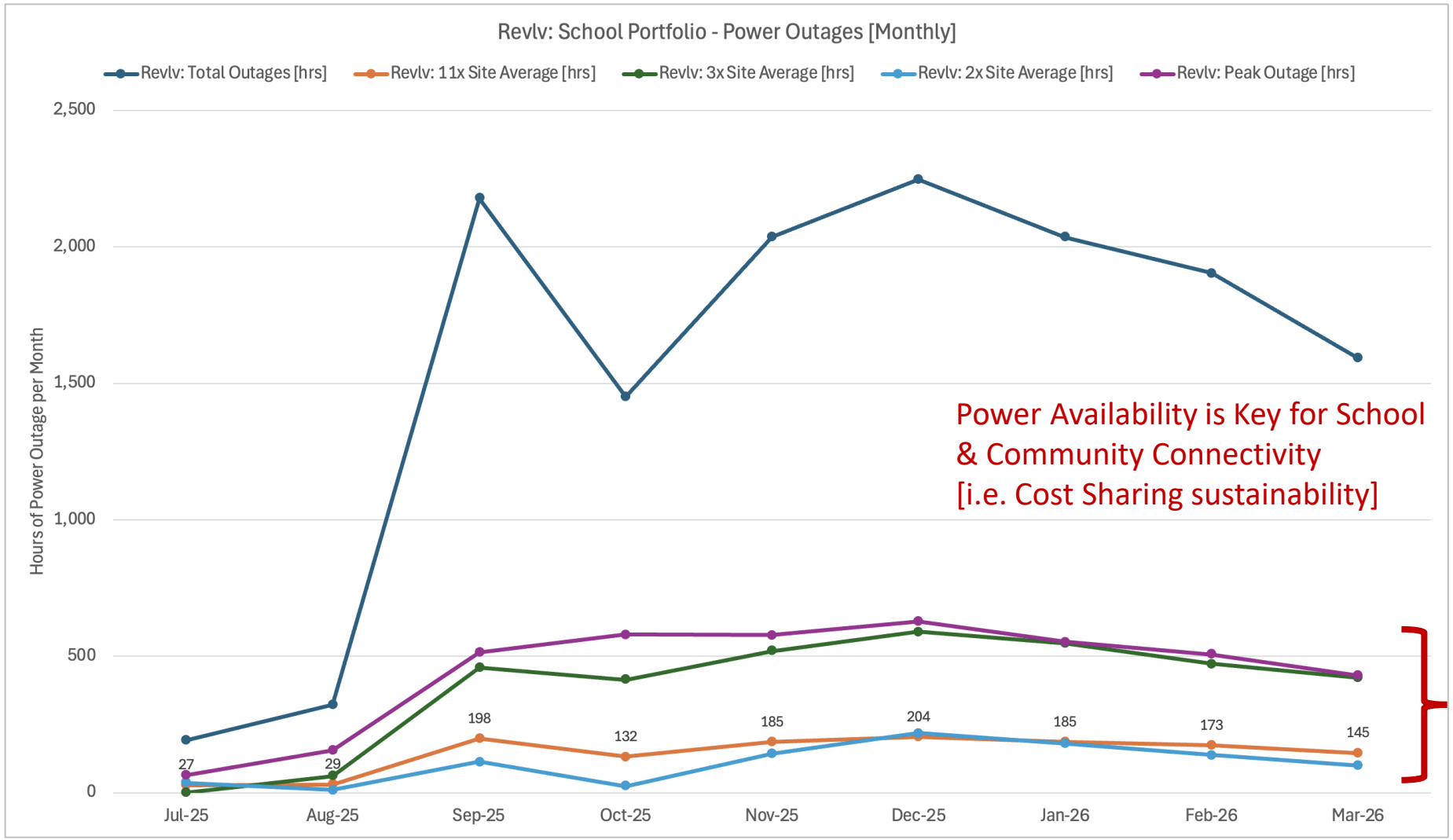
Starlink:
Within Impact
Plan Range

‘In Field’ Observations : Starlink Speed Test Results

Starlink:
Link Speed Range
(120-160Mbps)



‘In Field’ Observations : Power Availability Challenges



‘In Field’ Observations : Key Successes

21 Schools | 4 Provinces | 4,369 Learners [@208]

Starlink LEO + Wi-Fi 6 at Every School

School as a Node for Community Connectivity

Evidence Base: Site Visits + 9 Months of Data

Improved Outcomes:

- Teacher Effectiveness
- Access to Learning Resources
- Learner Engagement
- Digital Inclusion & Literacy

Quality Connectivity & Usage:

120-160Mbps
1.4–1.5 TB average [3-4TB peak]

Optimized Internet Access usage:
‘Vouchers’ [<50%]

Demand is Real:
Sustainability is the next challenge

‘In Field’ Observations : Key Challenges

Power Outages Limits Availability

[Often exceeding 150 Hours/month at individual schools]

Service Level Performance Monitoring

[Should be mandatory & automated for large scale contracts]

Structured Learning Environment Governance Required

[International evidence indicates that educational outcomes improve when digital access is aligned with age-appropriate content, learning objectives & responsible usage policies]

Access Controls Needed to Prevent Usage Spikes

[Uncontrolled access can significantly increase bandwidth consumption & long-term OPEX]

Pilot Project Costs per School : Summary

1

Pilot Actual CAPEX Cost:

~PHP 685K/school

~PHP 3.3K/learner

Used Existing Power Supply Solutions

2

Future CAPEX Target:

~PHP 705K/school

~PHP 3.4K/learner

Includes New Local Server and Power Supply Solution / Upgrade for Connectivity Equipment.

3

Pilot Actual OPEX Cost:

~PHP 11K/school/month

~PHP 639/learner/year

4

OPEX Target Year 2:

~PHP 9K/school/month

~PHP 522/learner/year

Includes an allocation to cover repairs etc.

5

Community Support for Cost-Recovery

Can provide meaningful OPEX offsets

6

National Scaling (@ ~9,000 schools):

>PHP 6B CAPEX [refresh every 7-10 years]

~PHP 1B/year OPEX [Year 2 onwards]

Optimized Locally Hosted Content, Access Controls and Community Connectivity can materially reduce long-term net OPEX.

Stakeholder Feedback : Learners, Teachers & Community

1. Learner Perceptions Rose Significantly

- 68.2% higher digital use
- 70.3% improved exam prep
- 59% increased learning motivation

2. Teachers Reported Improved Lesson Delivery

- 65 teachers surveyed
- More Google Classroom use
- Easier DepEd communications

3. Communities Expressed Support for Sustainability Initiatives

- In principle support for an appropriate level of cost-sharing

4. Key Concerns: Post-Pilot Sustainability

- Financial Sustainability flagged as top concern of Teachers & Community members
- Potential learner distractions due to access to inappropriate Internet content

Key Recommendations

1

Infrastructure:

- Create Fit-For-Purpose ‘Integrated Systems’ [Technology].
- Ensure Power Resilience [Availability].
- Mandate Automated Service Level & Quality Monitoring.

2

Governance:

- Deploy an Education Network with ‘harmonized’ cybersecurity solutions [Security].
- Create Usage Policies and Mandate Access Control mechanisms.
- Automated Monitoring, Evaluation & Learning [MEL] solutions integrated.

3

Sustainability:

- Develop viable cost recovery mechanisms [Financial]
- Formalize Community connectivity sharing [Regulatory & Community]
- Manage Vendor Service Level Agreements (SLAs) [Operational & Organizational]

Connectivity Alone Is Not the Goal. Better Educational Outcomes Are.

So Far So Good !

Secure Digital Access >> Improved Educational Outcomes