WIFI on Buses

TALES FROM THE BOARD SIDE
Project Summary

- Innovative Problem solving regarding long bus rides for rural students.
  - Create a positive experience for students who wanted to access our Secondary Schools and encourage others to make the choice
  - Solve a time management issue for students who wanted to participate in extra curricular and engage in part-time jobs
  - Extend the learning. Create an extension of the classroom.
  - Addressing peer support for homework
  - Modernize the delivery of curriculum to support the virtual classroom
Project Summary

• Approached numerous groups with idea of WIFI
  – Transportation consortium
  – School administration
  – TELC (Technology Enabled Learning Contact)
  – Teachers

• Questions:
  – Does the idea have merit
  – Do we have support from the various stakeholders
  – What are the success criteria
  – What supports are required
  – What is the communication plan
  – Can we afford the project
  – Address security issues and appropriate use of technology
Roles

• Transportation Consortium
  – Partner with bus companies
  – Find and partner with turnkey solution provider
  – Work with School Admin and Superintendent to identify buses that met criteria (Secondary only)
  – Work with IT to identify students on buses
  – Coordinate implementation, testing and deployment
Roles

• TELC
  – Identify teachers whose students were on pilot buses
  – Provide PD for teachers on:
    • VLE (Virtual Learning Environment)
    • Buswork
    • Teaching methodology

• School Admins
  – Provide PD time for teachers
  – Communicate with all staff and students
  – Ensure that communications were sent to parents
Roles

• Superintendent of Business
  – $$$$$ show me the money $$$$$
  – Develop communications for staff, students and parents
  – Provide resources for the project
  – Financial sustainability

• IT Services
  – Provide a list of students and student numbers
Roles

• Telecom Providers
  – Provide and support hardware/services needed for project
  – Develop login portal for students
  – Develop and provide reporting for board and consortium

• Bus Companies
  – Install equipment on buses
  – Test equipment with Board staff
Project Timeline

- December 2016 – Initial discussions
- January 2017
  - PD for teachers
  - Communications to students and parents
- February 2017 - 3 buses live
- September 2017 - 6 buses added (total of 9 buses)
- February 2018 – PD for teachers
- March 2018 - 3 buses added (Board equipment)
- March – April 2018 - Homework Help pilot initiated with TVO
  - Service available for students from 3pm-5pm
  - Interactive communications, whiteboard and online tutor
- May 2018 (est.) - 2 buses converted to SD-WAN
Technology Used

**Turnkey**
- Partners provide all hardware and support services
- Responsible for configuring filtering, reporting, etc.

• **Pros**
  - Little to IT Services support required from Board
  - One invoice for all services
  - No upfront capital costs or ongoing maintenance

• **Cons**
  - Capped and expensive LTE service (10 GB)
  - No integration with Board security or monitoring systems
  - Filtering controls not as granular as board equipment
  - Students experience different than school
Technology Used

Board owned equipment (Cradle Point)
- Board procured and owned hardware
- IT Services provides all configuration and support

• Pros
  - Heavy IT involvement
  - Uses same filtering as schools
  - Low cost, unlimited LTE services
  - Upfront capitol and ongoing maintenance

• Cons
  - All internet traffic via centralized board internet connection
  - Student experience different than school (bugs)
  - Additional hardware/services for IT to learn and manage
Technology Used

Board owned SD-WAN equipment
- Board procured and owned hardware
- IT Services provides all configuration and support

• Pros
  - Heavy IT involvement
  - Same equipment as used in the schools
  - Low cost, unlimited LTE services
  - Upfront capital and ongoing maintenance

• Cons
  - All internet traffic goes directly out to internet
  - Identical user experience and auto log on for students
  - One pane of glass management for IT
Communications

• Identify bus routes
• Meetings with teachers whose students were on the buses
• Meetings with students
• Letters to all parents of the school
• Cheat sheets for students
• Regular follow up with students on the buses

** communicate often **
Lessons Learned

• NOT an IT Project
• What is your business case for WIFI on buses
  – Net new cost, how do you justify it
    • Student achievement?
    • Equity?
• Teacher engagement is required from the start
  – You will need PD for your teachers
  – VLE is required (active and robust)
• Student engagement is critical
  – Teachers & Admin need to promote it
Lessons Learned

• BYOD policy needs to be in place
• Transportation Consortium and bus companies are an integral part of the project – Involve them from the start
• Be prepared to handle complaints
  – Why doesn’t my child’s bus have WIFI
• Communicate, Communicate, Communicate, Communicate
Success

• Bus drivers report less issues on bus
• Students using VLE to complete homework
• Survey results go here
Questions to be Answered

- What is the business case for the WIFI
  - Student achievement? Equity?
- How do you measure student success directly related to bus wifi?
- Who pays for the equipment and services?
  - Upfront costs?
  - ongoing
- Who owns the equipment?
- Who supports the equipment?
  - How about student support when they have issues on bus?
- Who configures equipment?
  - How about shared buses
Questions to be Answered

• Scenario 1 – Consortium owned, managed and supported
• Scenario 2 – Consortium owned, school board managed and supported
• Scenario 3 – Bus company owed, managed and supported
• Scenario 4 – Board owned, managed and supported
Questions to be Answered

• Is wifi system useable? How about in northern communities?
• What are the criteria for wifi on buses? Time? Distance? Both?
• Can bus companies use the wifi on charters?
  – What if the boards own the equipment?
• If equipment owned by consortium or bus company
  – How do we leverage Ministry LTE contracts with Consortiuoms and bus companies
Ministry Broadband Initiative

• Provide 1 Mbps per student in Ontario
• If buses are extensions of schools, are they included in Broadband project?
• SBCT team is proposing a small pilot across the province to further test WIFI on buses:
  – Multiple buses in each EDU region
  – Rural and Northern routes in excess of 45 minutes one way
  – Need to answer some questions
Ministry Broadband Project

• Learning and Teaching:
  – Do students want it and will they use it?
  – Will teachers use it?
  – What will parents think?

• Transportation Operations:
  – Is it cost effective?
  – What are the implications on drivers, administration, etc.?

• Technical:
  – Which devices are best?
  – How are technical challenges addressed?
  – Will it work in all conditions and applications?
Ministry Broadband Project

- Support the goals of achieving excellence, ensuring equity, promoting well being and enhancing public confidence
- Develop a deeper understanding of the learning and teaching implications of providing wifi access on buses
- Develop insight into challenges and success
- Learn what supports are required to increase effectiveness
- Develop local solutions to address challenges
- Develop best practices for implementation and troubleshooting
- Understand potential costs for broader implementation
Questions