Rural Transit Planning: On-Demand & Demand-Response Solutions

Transit Planning 4 All
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Full Path Transit Technology

"Technology" in Rural Transit

- Fixed Route Scheduling & Dispatch
- Demand-Response Scheduling & Dispatch
- Client Management
- Cameras
- Websites
- GPS equipment
- GIS tool
- GTFS feeds
- Radios/Cellular Comm.

- Reporting
- Service Planning
- Reminder Calls
- Asset Management
- Stop Amenities
- Rider Apps
- Driver Apps
- E-fare
- Point-of-sale Systems
- Passenger Counters
- Electric Vehicles

Not "Technology"

Two Working Definitions for Technology

- "Everything that doesn't work yet"
  — Danny Hillis

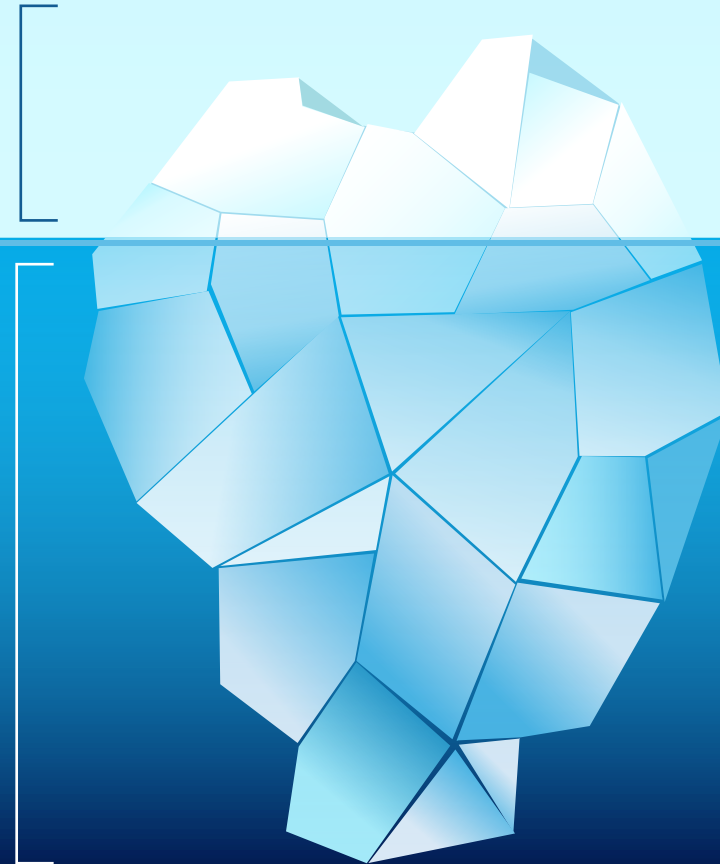- Where expertise heavily influences success

An Rough Framework for Analysis

Expertise — The Longer View

Effort to Implement

Effort to Use, Maintain, and Replace

A Core Challenge

Rural transit agencies rarely have IT departments.

How to get expertise from "over there" to "over here"?

Strategies for Acquiring Expertise

- Training
- Hiring
- Project-based contracting
- Long-term contracting
- Aggregating
- Merging
- Privatization

Think in Terms of Trade-Offs

- Cost
- Simplicity
- Robustness
- Scalability
- Speed
- Business Model Alignment

Fast   **Good**

Cheap

Think in Terms of Systems

- Become a "Noticer"
- Curiosity is your best asset
- How do things connect?
- How do things not connect?

Think in Terms of Non-Technical Supports

- Planning and Design
- Documentation
- Training
- Procurement
- Grant Management
- Vendor Relationships
- Evaluation of Outcomes
- Culture of Security
- Testing Resources

An example: RideSheet

- Developed with AARP
- Scheduling and reporting system for small providers of demand-responsive transportation
- Built entirely in Google Workspace
- Business logic in Google Apps Script/GAS (Javascript), open-sourced
- Primary tool is Google Sheets
- Integration with Google Docs, Calendar

RideSheet Key Benefits

- Low licensing cost (free to non-profits)
- HIPAA compliance (shared responsibility model)
- Rapid application development
- Easy collaboration
- All the benefits of spreadsheets:
  - Easy to understand
  - Easy to export
  - Field-serviceable

RideSheet Key Challenges

- All the downsides of spreadsheets:
  - Maintaining data integrity
  - Querying (compared to relational database)
  - Scaling

Where Things Get Cool: API Capable

- Connect to external APIs
  - Geolocating
  - Travel time & distance estimates
- Expose its *own* API
  - Exchange data for trip capacity and requests

Recommendations

- Get crystal clear on the problems you are solving
- Focus on institutional barriers first
- Think in phases: establish your minimum viable product (MVP)
  - Know what's most important
  - Prioritize ruthlessly
- Plan for what resources you'll need to sustain your systems — vendor support and internal staffing/training

Thank You

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