Fare Payment Systems

More Than Just A Technology Project

Michigan DOT – January 2026 Tech Talk

January 29, 2026

Clevor
Consulting Group

Who is Clevor Consulting Group

- **Clevor Consulting Group** (CCG) is an innovation-focused boutique technology consulting firm.
- We are the North American market leader, and specialize exclusively in the **planning, design, delivery, and operation** of electronic fare payment systems for use in public transportation.

Vancouver
Calgary
Seattle
Portland
Minneapolis
Toronto
Boston
Philadelphia
Chicago
Baltimore
New Jersey
Salt Lake City
San Francisco
Indianapolis
Washington
Las Vegas
Nashville
Raleigh
Austin
Tampa
Honolulu HART

Clevor
Consulting Group

Fare Payment Touches Every Part of a Transit Organization

Finance

All fare revenue must be collected and accurately accounted for as this is a financial system

System Architecture and Security

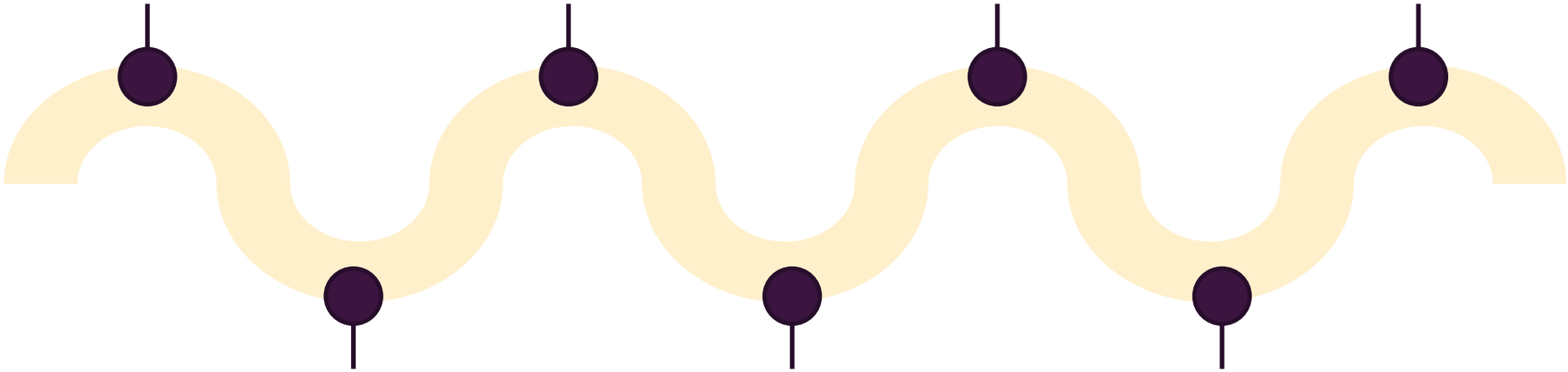
How the back office is designed – Controls how system components and external systems interact (e.g., open architecture, PCI compliance).

Fare Equipment Maintenance

Hardware such as Vending Machines, Validators, Point of Sale Systems, and Inspection Devices

System Operations

How the system will be operated and maintained once implemented (e.g., fare table management, device monitoring and maintenance)



Fare Policy

Configuring fare types, products, and values enforced by the system (e.g., transfer rules, fare capping, etc.)

Fare Media Management

Fare media customers use to pay fares (e.g., closed-loop cards, virtual cards, credit/debit)

Customer Support

Features enabling customer support and a better customer experience (e.g., websites, retail network, call center, and mobile apps)

Clevor Consulting Group

What Has Changed in the Last 10 Years

The fare collection industry is rapidly evolving, driven by technology advancements and changing customer expectations. Key trends include:

Shift Towards Account-Based Ticketing (ABT)

Moving away from card-centric systems to centralized account-based solutions that provide more flexibility for agencies and riders.

Increased Adoption of Contactless & Mobile Payments

EMV contactless, QR codes, and digital wallet (Apple Pay, Google Pay) virtual cards are becoming the standard.

Cloud-Based Hosting

Transit agencies are leveraging cloud infrastructure for real-time transaction processing, scalability, and reduced maintenance costs.

Interoperability & Regional Integration

Fare systems are being designed to support seamless regional travel across multiple modes of transit.

Advanced Fare Policy Options

Many agencies are replacing fare products with fare capping or similar fare policies used to shift customer behavior.

Cybersecurity & Data Privacy

Increasing concerns over data security have led to stronger security, fraud prevention, and regulatory compliance requirements.

From Cards to Accounts – Why the Move Was Made

Card-Based Systems

Fare value on the media
Fare intelligence in devices

- Support Fully Offline Operation
- Instantaneous Payment Feedback for Customers & Operators
- Near 100% Revenue Assurance

Account-Based Systems

Fare value and intelligence in the back office

- On-Demand Loading via Web & Mobile
- Online/Real-Time Access to Transaction Data
- Central Tariff Management
- Open-Loop/EMV Payment Acceptance

Clevor
Consulting Group

Account-Based Doesn’t Have to Mean Compromise

Account-Based 2.0

Card-Based

- Low-Risk Offline Operation
- Precise Fare Calculation & Enforcement
- Consistent Customer Experience

Account-Based 1.0

- On-Demand Loading via Web & Mobile
- Support for Open Payments
- Central Tariff Management
- More Flexible Integration with 3rd Parties

Near 100% Revenue Assurance

Clevor Consulting Group

But It Does Require Strong Requirements and a Capable Vendor

500-650 ms

Fare Validation **Request & Response**

- Calculated Fare
- Fare Product Used
- Balance Remaining
- Transfer Status
- Fare Capping Status

- Dedicated cellular communications
- 4G/5G connectivity

Cellular routing optimized for low-latency

- In-memory account database
- Cloud-native fare calculation services

“Real-time fare processing”

Clevor Consulting Group

What Type of System to Procure

	DBOM Design–Build–Operate–Maintain	SaaS Software as a Service
What you're buying	A full fare system *and* the people to run it	Access to a vendor-hosted fare platform
Who operates the system	Vendor operates day-to-day on the agency's behalf	Vendor operates the software; agency runs operations
Fare policy flexibility	High, can support complex, agency-specific rules	Moderate, limited to what the platform supports
Speed to launch	Slower, more customized	Faster, more standardized
Change & upgrades	Planned and negotiated	Vendor-driven release cycles
Long-term risk	Vendor lock-in if exit terms aren't clear	Platform dependency and roadmap constraints
Better fit if you…	• Have complex fare rules or strong policy enforcement needs • Want one party clearly accountable for performance • Are comfortable managing a long-term vendor relationship	• Want to launch quickly with lower upfront cost • Prioritize digital channels and open payments • Are willing to adapt fare policy and processes to the platform • Prefer predictable subscription costs over customization

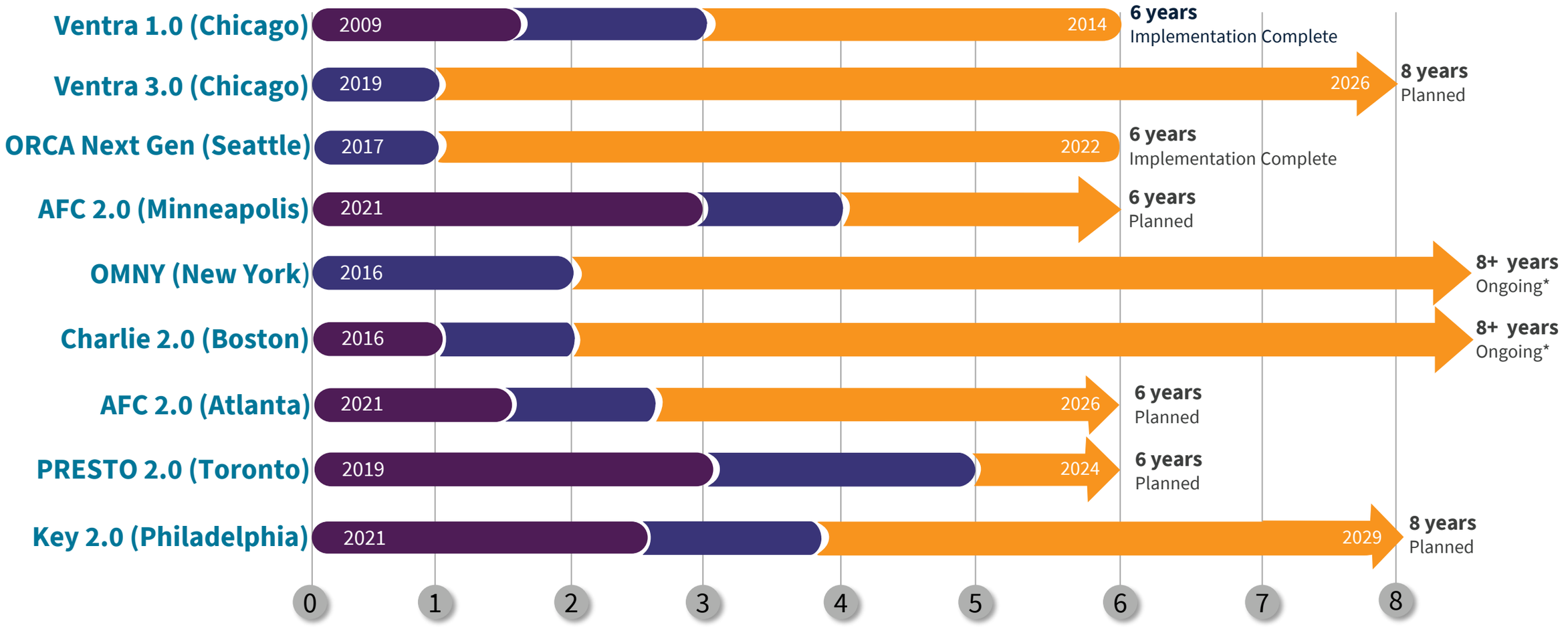
Often Comes Down to Budget and the Need for Customization

Agency	Size	Transit Modes				SaaS	DBOM
	~Annual Ridership	Bus	Light Rail	Subway	Ferry	Software as a Service	Design, Build, Operate, Maintain
Vancouver	390 M	✓		✓	✓		✓
Toronto	532 M	✓	✓	✓			✓
Chicago	290 M	✓		✓			✓
Boston	213 M	✓	✓	✓	✓		✓
Seattle	130 M	✓	✓	✓	✓		✓
Denver	65 M	✓	✓			✓	
Pheonix	26 M	✓	✓			✓	

Clevor Consulting Group

Understanding Practical Procurement Timelines

Years to Full Implementation



Clevor Consulting Group

Pre-Procurement Planning | Procurement | Design/ Implementation

*Exceeding original schedule

For Any System, Requirements Really Matter

EARLY MARKET ENGAGEMENT

- Conduct RFIs, vendor days, and technical workshops to understand the latest innovations before finalizing procurement requirements.
- Leverage industry expertise to assess emerging paymreaent technologies and interoperability solutions.

FLEXIBLE CONTRACTING & PERFORMANCE-BASED AGREEMENTS

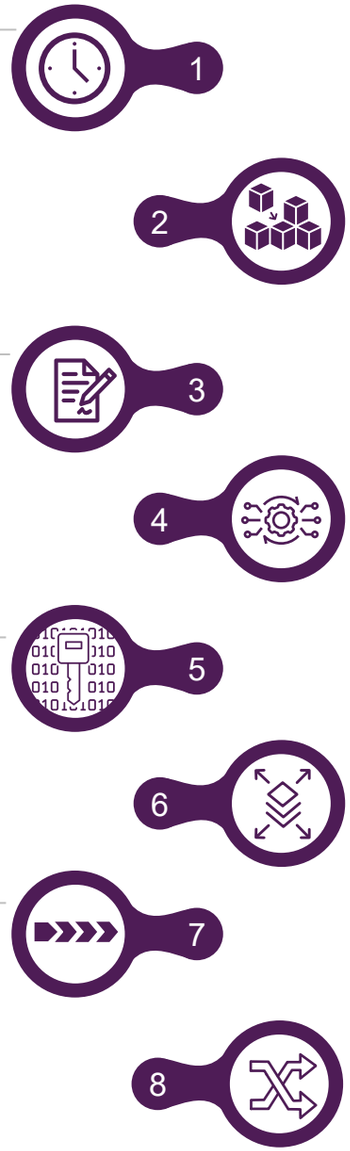
- Use outcome-based contracts that incentivize innovation and system performance rather than rigid specifications.
- Include provisions for upgrades and contract extensions to accommodate future needs

CYBERSECURITY & DATA PRIVACY PRIORITIZATION

- Mandate end-to-end encryption and tokenization for all payment transactions.
- Ensure compliance with PCI DSS, GDPR, and local data protection laws to safeguard customer information.

PHASED DESIGN AND DEVELOPMENT

- Leverage a transition plan built on phases (i.e., series of waterfalls projects), which provides many benefits of an agile approach without fundamentally changing how suppliers deliver these projects. .



MODULAR & FUTURE-PROOFING APPROACH

- Avoid long-term lock-in with proprietary systems; prioritize open standards and modular architectures.
- Ensure the system can adapt to future policy changes, mobility integrations, and technology upgrades

INTEROPERABILITY & OPEN STANDARDS COMPLIANCE

- Require vendors to adhere to ISO, EMV, and open API standards to ensure cross-platform compatibility.
- Enable integration with third-party mobility services like ride-sharing and bike rentals under MaaS (Mobility as a Service).

FLEXIBLE PROCUREMENT APPROACH

- Divide projects into multiple procurements or multiple options within a core procurement, selecting the “best of breed” for various system components, leveraging an open architecture to integrate with a single back-office solution.

TRANSITION PLANNING

- Start planning for transition early and provide it as part of the procurement to vendors for input and alignment

Clevor Consulting Group

But Success Requires More Than Just Strong Requirements

Experienced Project Team

- An experienced & dedicated internal project team, coupled with knowledgeable industry expertise, has proven essential to deliver complex fare system procurements and implementations.
- Engage a diverse group of project stakeholders across the organization during requirements development and system procurement to ensure everyone's needs are considered.

Extensive Planning

- Set realistic procurement, implementation expectations, including timelines and costs.
- Establish a detailed Transition Plan, consider including in procurement solicitation.
- An emerging trend includes phasing the project.

Capable Suppliers

- Focusing heavily on securing a strong supplier project team may minimize a market trend of poor supplier performance impacting project schedule, design and costs.
- Experienced suppliers are stretched thin and often provide scant onsite project and engineering resources.
- There's an emerging trend where multiple procurements are employed to achieve "best in breed" suppliers for various system components.

Robust Requirements

- Developing and negotiating concise and proven technical requirements that align with what the market can deliver may expedite procurement and implementation.
- Identifying and negotiating rights to essential and specific intellectual property with incumbent may enable a more seamless transition.

Q&A

Clevor
Consulting Group