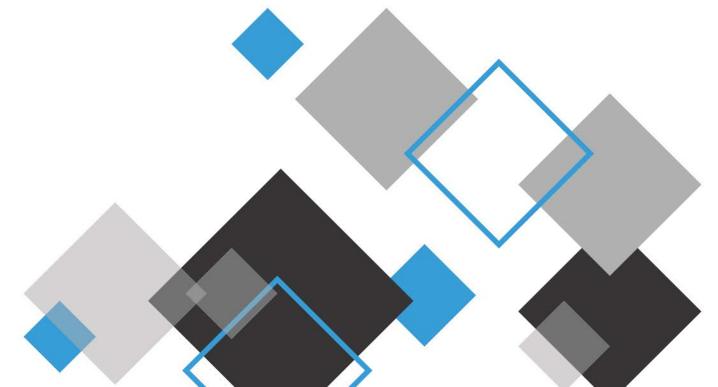


Where Are You in Your Asset Management Journey?

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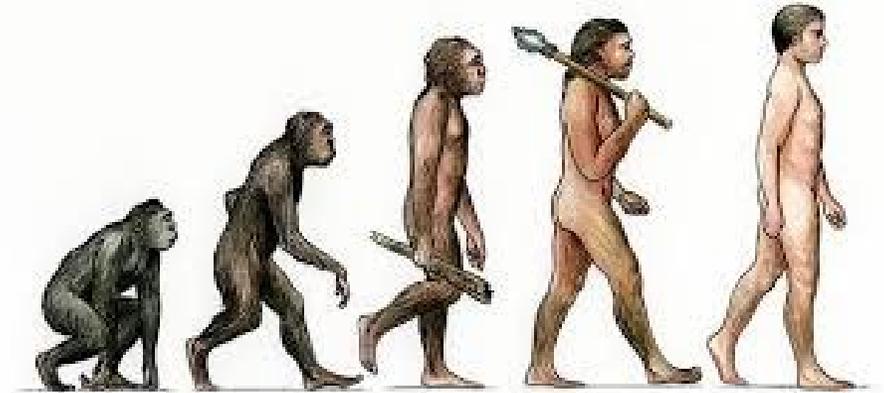


Agenda

- Asset Management Roadmap
- Types of Growth
- Characteristics of Top-Shelf Agencies
- Example of Two Top-Shelf Agencies
- Concluding Thoughts

Evolution of Asset Management

- Started as single-asset, compliance tools
- Data and practices were limited
- Today: integrated, strategic, and data-rich systems



Some change drivers:

- Legislative mandates (e.g., ISTEA, MAP-21)
- Funding incentives/penalties
- Innovation and efficiency goals



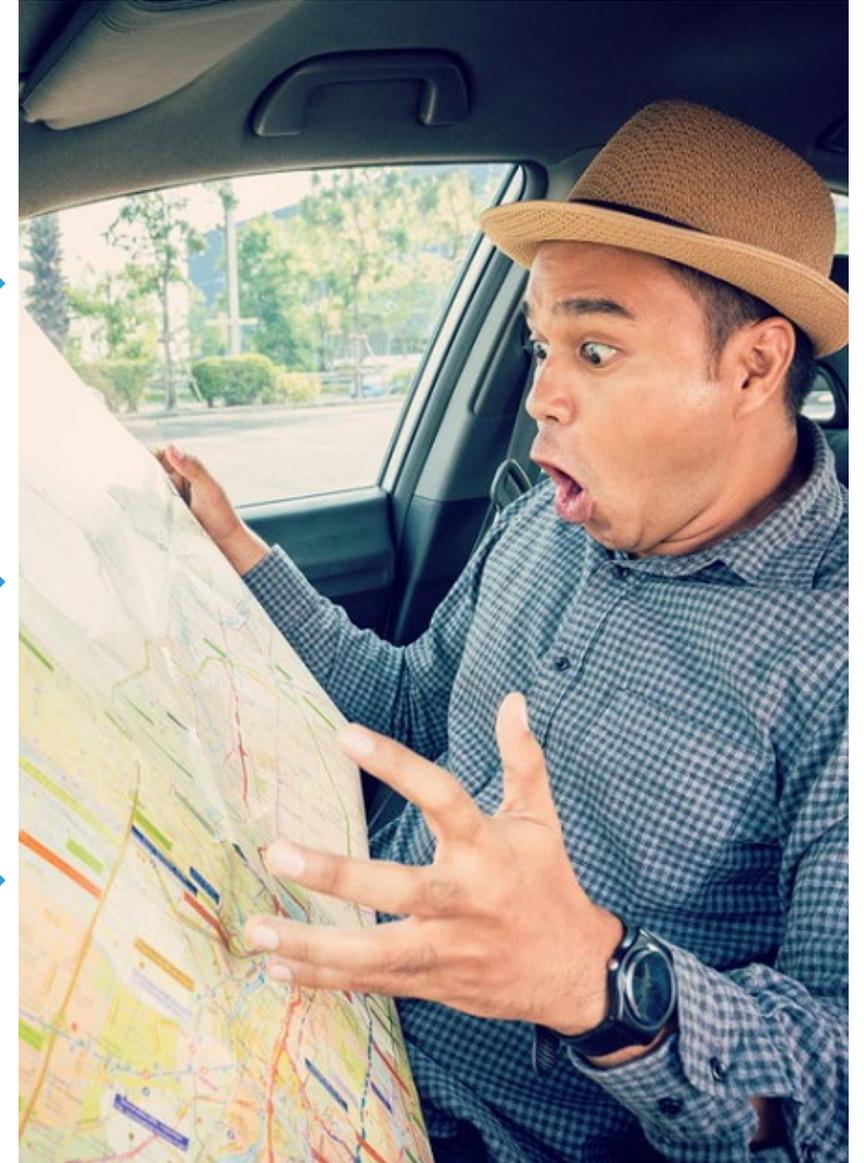
All you need is the plan, the
road map, and the courage to
press on to your destination.

— Earl Nightingale



What is a Roadmap?

- A roadmap is a strategic plan that defines a goal or desired outcome and includes the major steps or milestones needed to reach it.
- It also serves as a communication tool, a high-level document that helps articulate strategic thinking—the why—behind both the goal and the plan for getting there.
- It can also be a benchmark to gauge progression.



AMS Growth



| Growth Type | Activities Involved |
|--|--|
| Organically – within by iteration | <ul style="list-style-type: none">• Data updates• Data validation and governance• Model review and validation• Model updates• Analysis parameter updates (e.g., costs, decision trees, field validation, etc.) |
| Vertically – adding depth to an asset | <ul style="list-style-type: none">• Are projects matching real world?• Is there additional data that can be used to improve project selection?• Are there new innovations to be tested? |
| Horizontally – adding additional asset classes | <ul style="list-style-type: none">• Determining asset priority and readiness• Determining willingness and acceptance of asset stewards |

It does **not** matter how slowly
you go so long as you do **not**
stop.

— Confucius



Vertical Growth – Adding functionality to your AMS

- New Database Configuration
- New Analysis Configuration
- Model Validation
- Model Refinements
- Machine Learning
- AI
- Risk Valuation
- Asset Valuation
- Safety Management (e.g. cost/benefit of countermeasures)
- Environmental Management
- Dashboards
- Reports
- Integration
- Specific detailed asset data (e.g. skid, pavement strength, etc.)



Horizontal Growth – Adding assets/functionality to your AMS

- Pavement
- Structures
- Signals
- Rock Slopes
- Small Culverts
- Stormwater & Ditches
- Retaining Walls
- Guardrail
- Pavement Markings & RPMs
- Signs
- Park & Ride
- Rail
- Buildings
- Stockpiles
- ITS Devices
- Aviation
- Transit
- Others....



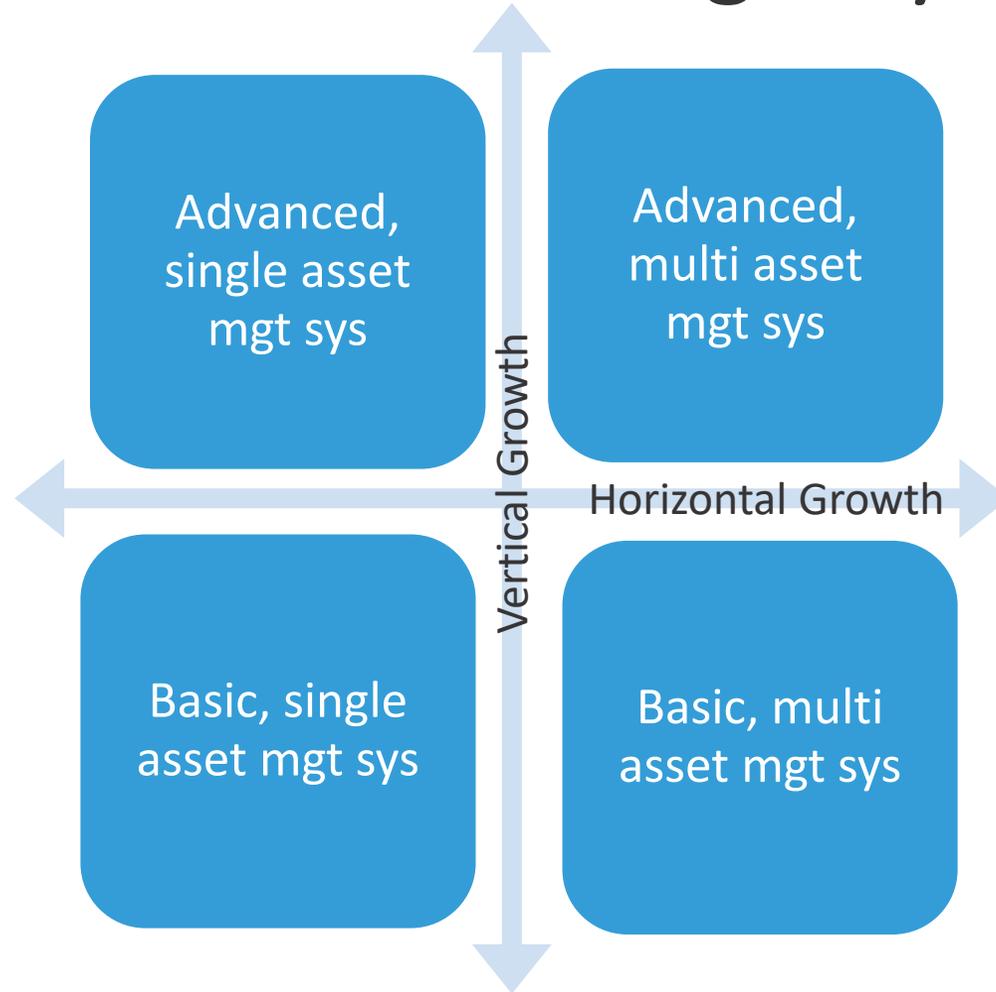
- Cross Asset Analysis
- Strategic Analysis Module (Slider Tool)
- Dashboard Hub
- OM Discovery
- OM Configuration

Evaluating Maturity and Progress

- As an organization who strives to be better, how do evaluate where you are:
 - Use maturity models
 - Many exist, Deighton has developed one for dTIMS users
 - Identify and address gaps
 - Build a multi-year roadmap that addresses the 3 types of AMS growth
 - Many exist, Deighton has developed one for dTIMS users
 - Aim for progress, not perfection

IT'S NOT ABOUT
BEING PERFECT.
IT'S ABOUT BEING
BETTER THAN YOU
WERE YESTERDAY.

Where is Your Agency?



What is a Top-Shelf Organization

- **Top-shelf** refers to an organization that consistently operates at the highest levels of performance, innovation, and reputation within its industry.
 - The term "**top-shelf**" is borrowed from retail and hospitality, where premium products are literally placed on the top shelf—symbolizing quality, exclusivity, and desirability.
- **Definition:** A **top-shelf** company is a business recognized for excellence across multiple dimensions, including strategic clarity, innovation, leadership, customer relationships, and operational performance.



Top-Shelf Characteristics

- Strong, visible leadership
 - Champions drive innovation
 - Leadership sets priorities
 - Agency-wide support is critical
- Cross-agency support
- Culture of continuous improvement
- Reinvestment in systems and staff



What Sets Top-Shelf Agencies Apart?

| Trait | What It Looks Like |
|--|--|
|  Strategic Vision | Future-focused guidance, not just delivery |
|  Innovation Culture | Early tech adoption, rapid prototyping |
|  Client Partnership | Integrated teams, push for better thinking |
|  Multidisciplinary Teams | Hybrid talent across strategy, tech & creative |
|  Results-Driven | KPIs, ROI, and performance metrics at the core |
|  Agility | Sprint-based, adaptable, low bureaucracy |
|  Strong Identity | Cohesive brand + magnetic internal culture |
|  Purpose-Led | Values-driven with ethical alignment |

What Do Top-Shelf Agencies Look Like?



- Vermont Agency of Transportation (VTrans)
- VTrans is a government agency of the U.S. state of Vermont that is responsible for planning, constructing, and maintaining a variety of transportation infrastructure in the state.
 - VTrans is responsible for planning, development, implementation, and maintenance of a variety of transportation infrastructure including, but not limited to, roads, bridges, state-owned railroads, airports, park and ride facilities, bicycle facilities, pedestrian paths, public transportation facilities and services, and Department of Motor Vehicles operations and motor carrier enforcement.
 - VTrans serves the entire population of the State of Vermont.



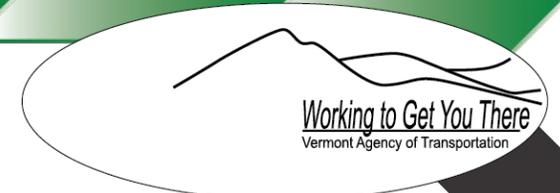
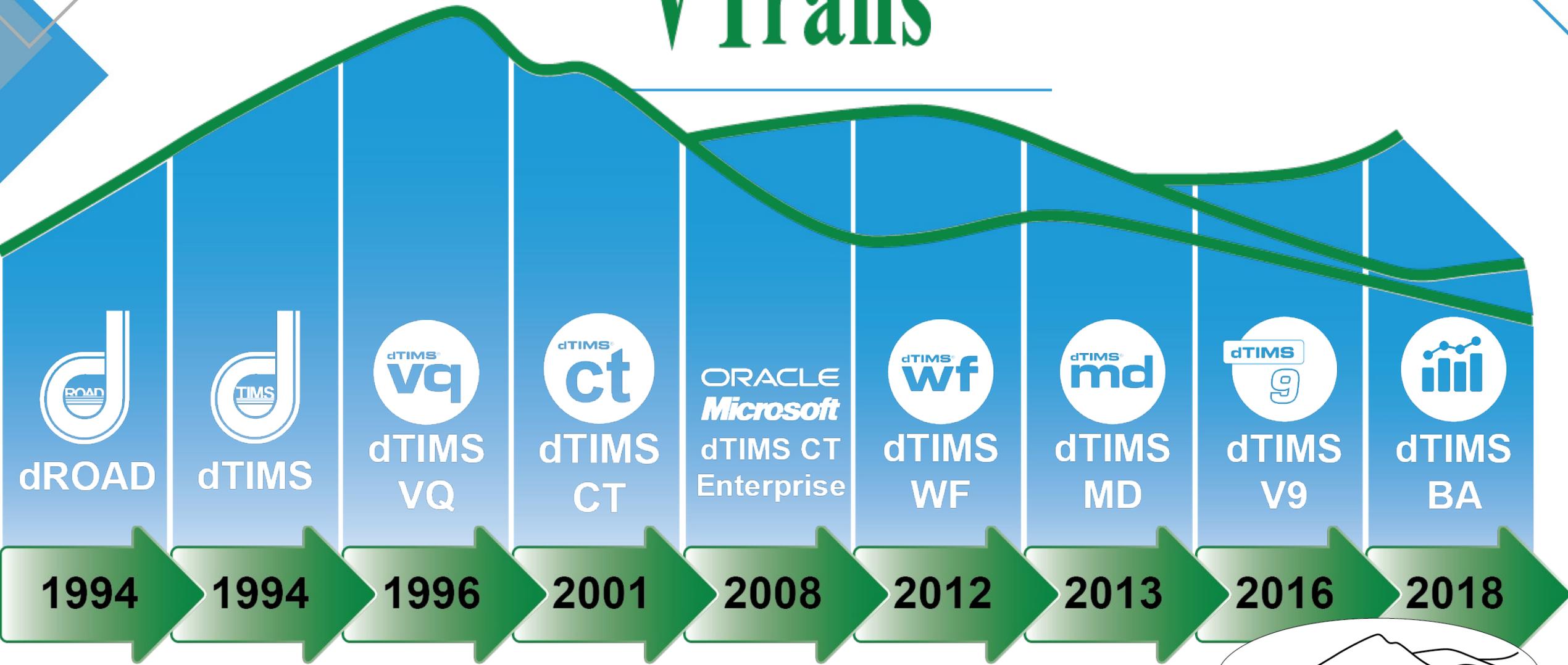
- Transport Infrastructure Ireland (TII)
- TII is a state agency in Ireland, dealing with road and public transport infrastructure.
- TII exists to fulfil an important purpose of national strategic significance, touching the lives of citizens and visitors alike daily.
- TII's purpose is to provide sustainable transport infrastructure and services, delivering a better quality of life, supporting economic growth and respecting the environment.

Vermont Agency of Transportation

VTrans

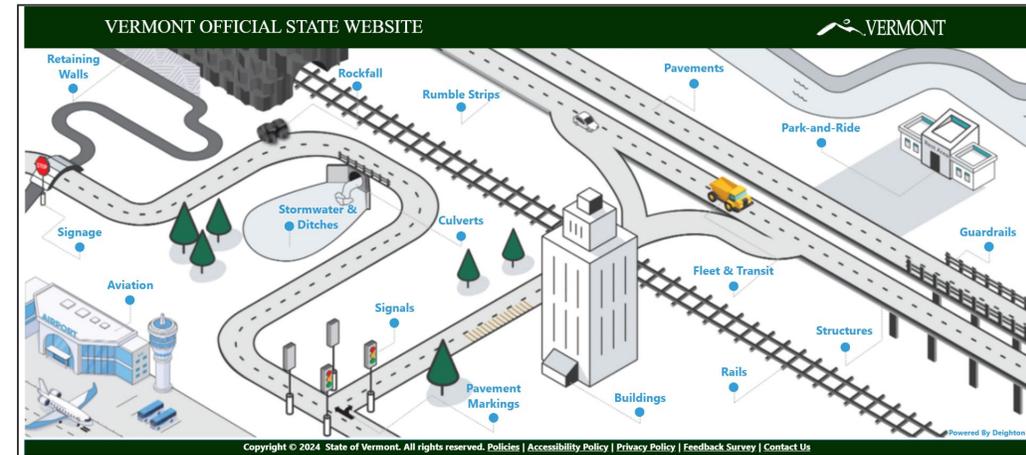


VT Trans



And Since 2018....

- VAMIS – Vermont Asset Management Information System
 - Based on dTIMS BA and OM (Operations Management)
 - Multiple asset classes (about 20 so far)
 - VAMIS dashboard hub
 - Strategic Asset Model (SAM)
 - Cross Asset Analysis and Optimization function (CAAO)
 - Operations Management (standard accomplishments, snow & ice control)
 - Enterprise Asset Management Solution (EAMS)



Here's What A Top-Shelf Agency Looks Like - VTrans



Strategic Vision

Forward-thinking, proactive in embracing new product features and capabilities



Innovation Culture

dTIMS influencers, always willing to suggest enhancements, working with DAL to propose product related efficiencies



Client Partnership

Ongoing, deeply collaborative relationship that has evolved since 1994



Multidisciplinary Teams

Forward thinking, DAL engaged client contacts that think "outside the box"



Results-Driven

Transforming their goals and ideas into measurable success with a focus on long term, sustainable metrics for implementation



Agility

Dynamic team that promotes DAL evolution of software enhancements and innovation



Strong Identity

Engaged internal group at the core asset (PMS, BMS) level, proactive internal knowledge sharing



Purpose-Led

Knows what they want in the end goal and driven to achieve it.



VTrans: Innovative TAM Practices

Data-Driven Decision Making:

- Implemented the Vermont Asset Management Information System (VAMIS - dTIMS) to integrate and optimize decisions across multiple asset types.

Cross-Asset Investment Planning:

- Developed enterprise-wide asset management plans that evaluate tradeoffs across bridges, pavements, culverts, etc.

Risk-Based Management:

- Uses flood risk and GIS vulnerability data in capital planning, particularly for bridges and culverts post-Hurricane Irene.

Sustainability and Resilience:

- Incorporates climate adaptation and GHG reduction goals in asset management and long-range planning.

Peer Leadership and Collaboration:

- Active in AASHTO/FHWA peer exchanges, contributing tools and lessons learned for national TAM advancement.

Performance Management Culture:

- Establishes clear targets, tracks progress and uses scenario planning for investment strategies.

Federal Compliance Leadership:

- Among the first to receive FHWA certification for its TAMP (2018), with consistent updates and refinements.



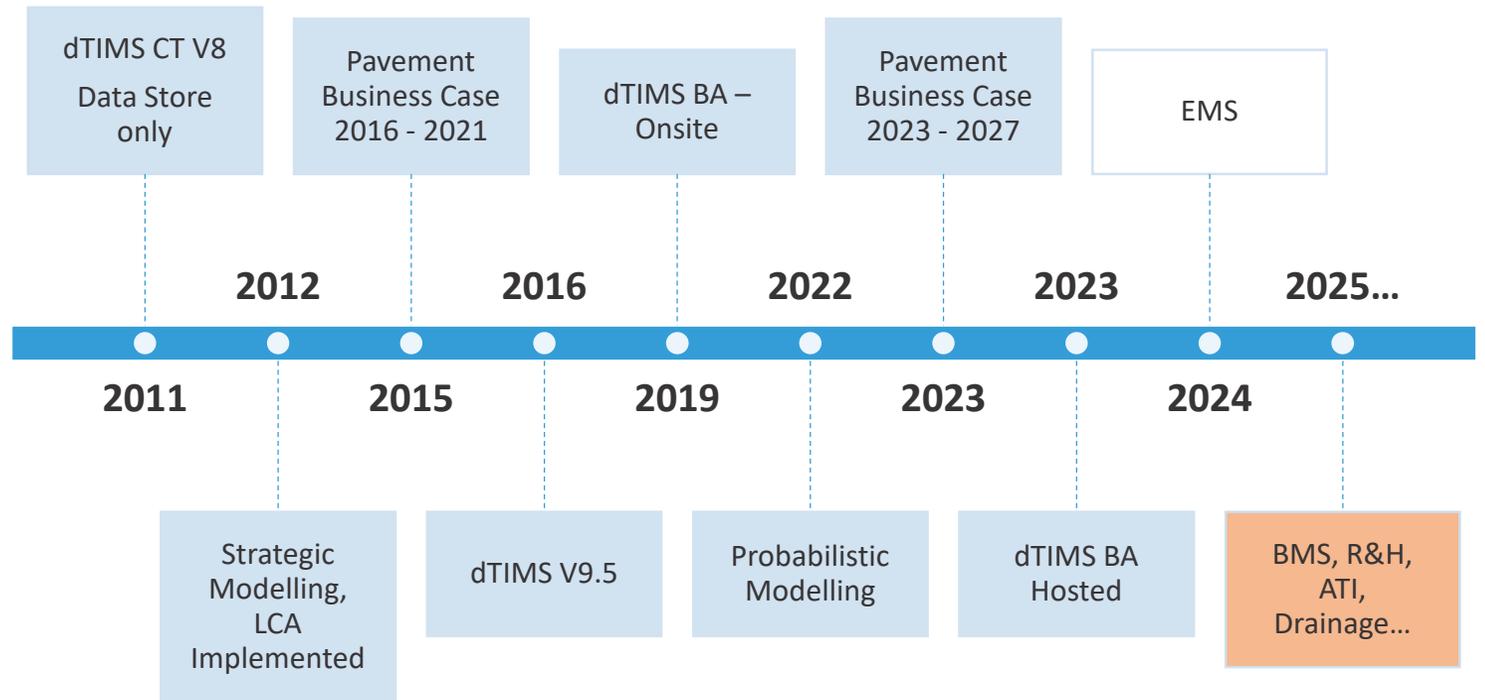
Transport Infrastructure Ireland

TII



Background to dTIMS in TII

- Tender process was initiated in 2010.
- Deployment as a data repository completed in 2011
- Strategic modelling configured and tested in 2012-2013
- dTIMS has been used to generate multi-annual pavement maintenance programs since.



Here's What A Top-Shelf Agency Looks Like - TII



Strategic Vision

5 Year plans with Purpose \ Vision \ Values front and center

Smart Goals and Objectives focused around: Existing & new infrastructure, Services, Safety, People and Organizational Excellence



Innovation Culture

People, engagement and collaboration, and organizational excellence is key to keeping TII as a top shelf agency.



Client Partnership

TII partners with internal and external partners nationally and internationally to bring the best of asset management best practice to TII



Multidisciplinary Teams

TII leverages staff and partners from various disciplines to tackle complex asset management.



Results-Driven

Smart goals and business cases for most departments to guarantee results.



Agility

TII adapts quickly to changing conditions and needs of its transportation network, IE: climate change and active travel



Strong Identity

TII leverages staff and partners from various disciplines to tackle complex asset management.



Purpose-Led

TII exists to fulfil an important purpose of national strategic significance, touching the lives of citizens and visitors alike daily.

Their purpose is to provide sustainable transport infrastructure and services, delivering a better quality of life, supporting economic growth and respecting the environment.

TII: Innovative TAM Practices



TII Statement of Strategy
2021-2025
October 2023 Update



Digital Transformation:

- Adoption of Building Information Modelling (BIM) for full lifecycle asset management.

Integrated Data Systems:

- AMS platform integrates pavement, structure, and ITS data for informed planning and maintenance. dTIMS is used in this.

Climate Resilience:

- Climate Adaptation Strategy includes risk-based planning and vulnerability mapping.
- TII have also piloted an EMS in dTIMS to track carbon emissions and their impact on pavement management activities.

Performance-Based Contracting:

- MMaRC contracts include KPIs to ensure accountability in maintenance and renewals.

Advanced Monitoring Technology:

- Use of automated distress collection (e.g., ARAN, Dynatest) and LiDAR systems for high-speed, accurate condition data collection.

Lifecycle-Based Planning:

- Whole-of-life costing used to inform long-term strategies and investment priorities (use of dTIMS for this).

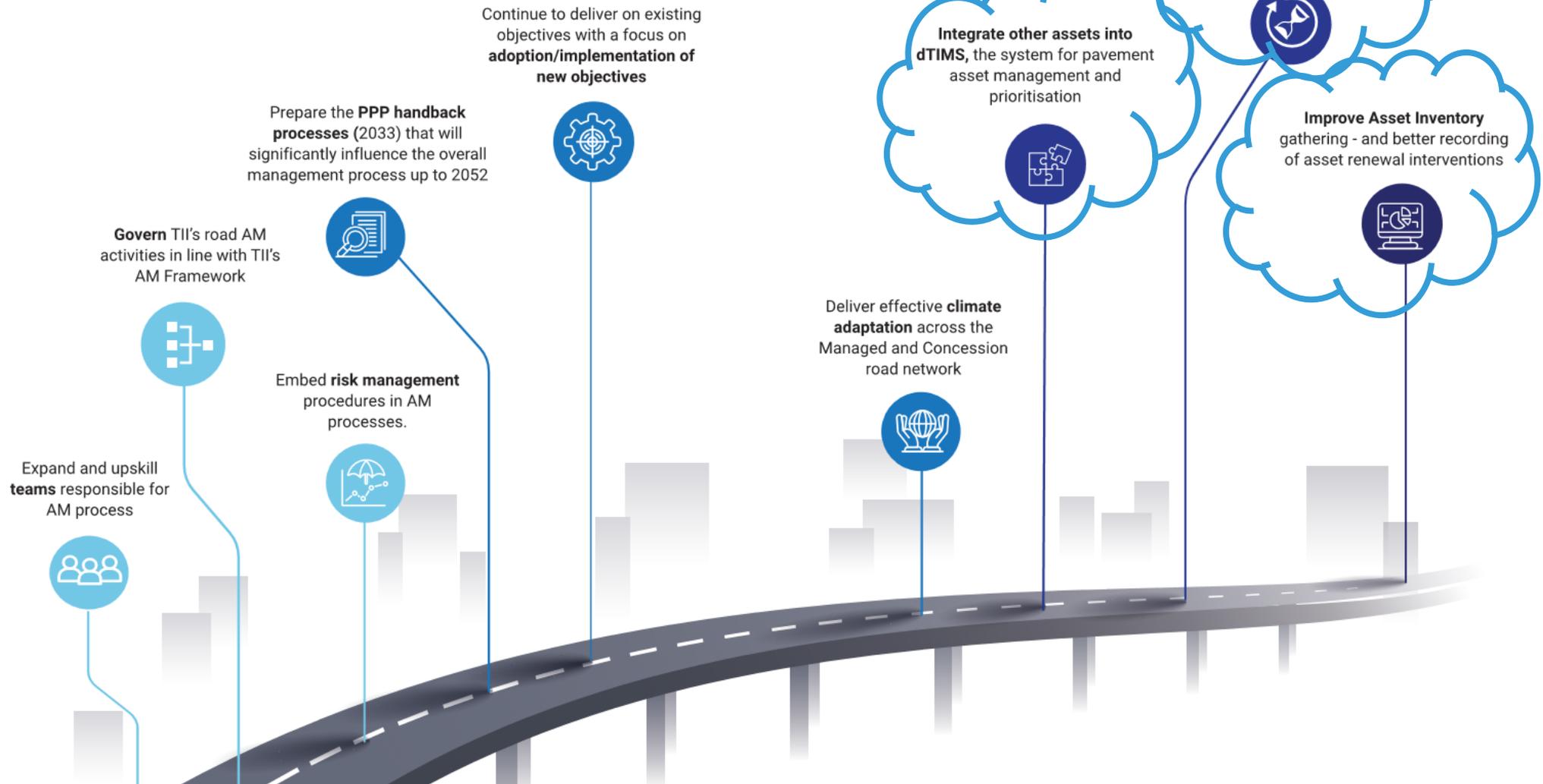
International Collaboration:

- Active in CEDR and EU projects like INFRAMIX for shared innovation and benchmarking.

Transparency & Reporting:

- Publishes annual service indicators on road conditions, safety, and asset performance.

The Way Forward



dTIMS is a key lever in delivering our Strategic Asset Management Objectives.

Common Themes: VTrans & TII in Asset Management

| Theme | VTrans | TII |
|---|--|--|
| <ul style="list-style-type: none"> • Data-Driven Decision Making | <ul style="list-style-type: none"> • VAMIS for multi-asset integration and scenario analysis | <ul style="list-style-type: none"> • TAMS for real-time data sharing and predictive maintenance |
| <ul style="list-style-type: none"> • Cross-Asset Lifecycle Planning | <ul style="list-style-type: none"> • Tradeoff analysis to maximize ROI across assets | <ul style="list-style-type: none"> • Whole-of-life costing models for pavements, bridges, ITS |
| <ul style="list-style-type: none"> • Digital Transformation | <ul style="list-style-type: none"> • GIS-based tools, centralized platforms | <ul style="list-style-type: none"> • BIM, LiDAR, and ARAN for full asset lifecycle tracking |
| <ul style="list-style-type: none"> • Sustainability & Climate Resilience | <ul style="list-style-type: none"> • Climate risk integration and resilience metrics | <ul style="list-style-type: none"> • Climate adaptation strategy and resilient design standards (EMS) |
| <ul style="list-style-type: none"> • Performance-Based Management | <ul style="list-style-type: none"> • Targets and progress reporting tied to funding scenarios | <ul style="list-style-type: none"> • Motorway Maintenance and Renewal Contracts (MMaRC) with KPIs for contractor accountability |
| <ul style="list-style-type: none"> • Transparency & Public Reporting | <ul style="list-style-type: none"> • Publicly available TAMP and performance dashboards | <ul style="list-style-type: none"> • Annual service indicator reports for public and government |
| <ul style="list-style-type: none"> • Collaboration & Benchmarking | <ul style="list-style-type: none"> • AASHTO, FHWA, peer exchanges | <ul style="list-style-type: none"> • CEDR (Conference of European Directors of Roads) and INFRAMIX, and adoption of international practices |
| <ul style="list-style-type: none"> • Continuous Improvement Culture | <ul style="list-style-type: none"> • Early adopter of federal TAMP, updates based on evolving best practices. | <ul style="list-style-type: none"> • Constant benchmarking with European leaders, incorporating international innovations. |



VTrans & TII Shared Strengths



Strategic Use of Technology (Strategic Vision)

- Both integrate advanced digital tools for asset monitoring, planning, and lifecycle management.



Forward-Thinking Asset Management (Innovation Culture)

- Prioritize sustainability, resilience, and cost-effectiveness through cross-asset and long-term planning models.



Transparency and Accountability (Results-Driven)

- Clear communication of goals, performance, and outcomes builds public trust and drives internal performance.

Global and National Collaboration (Client Partnership, Multidisciplinary Teams)

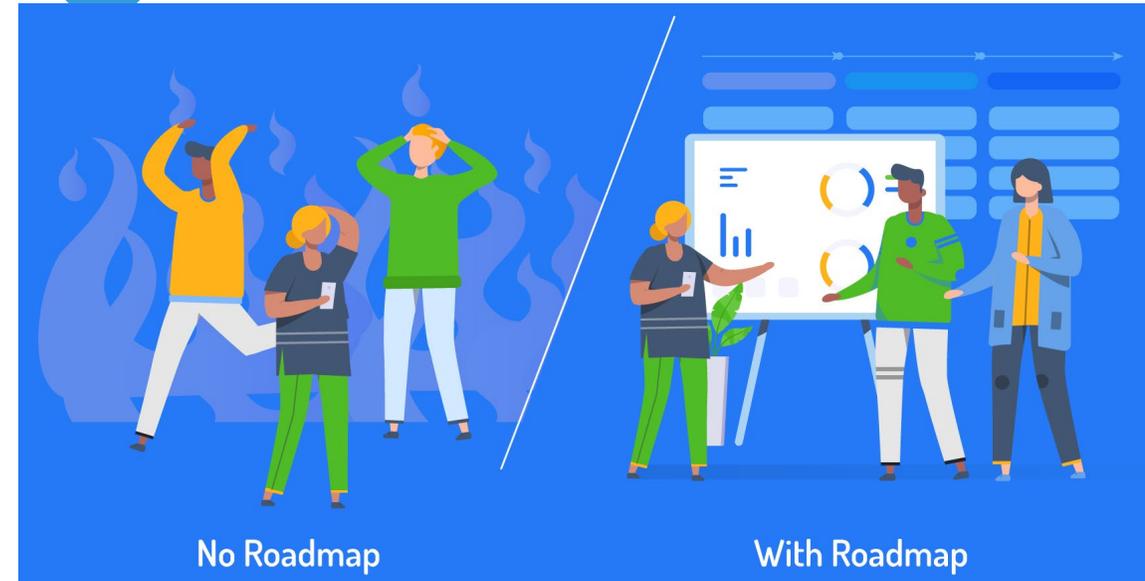
- Leverage partnerships and external knowledge to continually evolve and stay ahead in asset management practices.



Closing Thoughts

Becoming Top-Shelf

- Appoint an AM champion
- Start with a maturity assessment
- Build a roadmap
- Foster a growth culture
- Use Technology/Systems
- Be Innovative
- Be Transparent
- Collaborate



Thank You

For more information, please reach out to me:

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