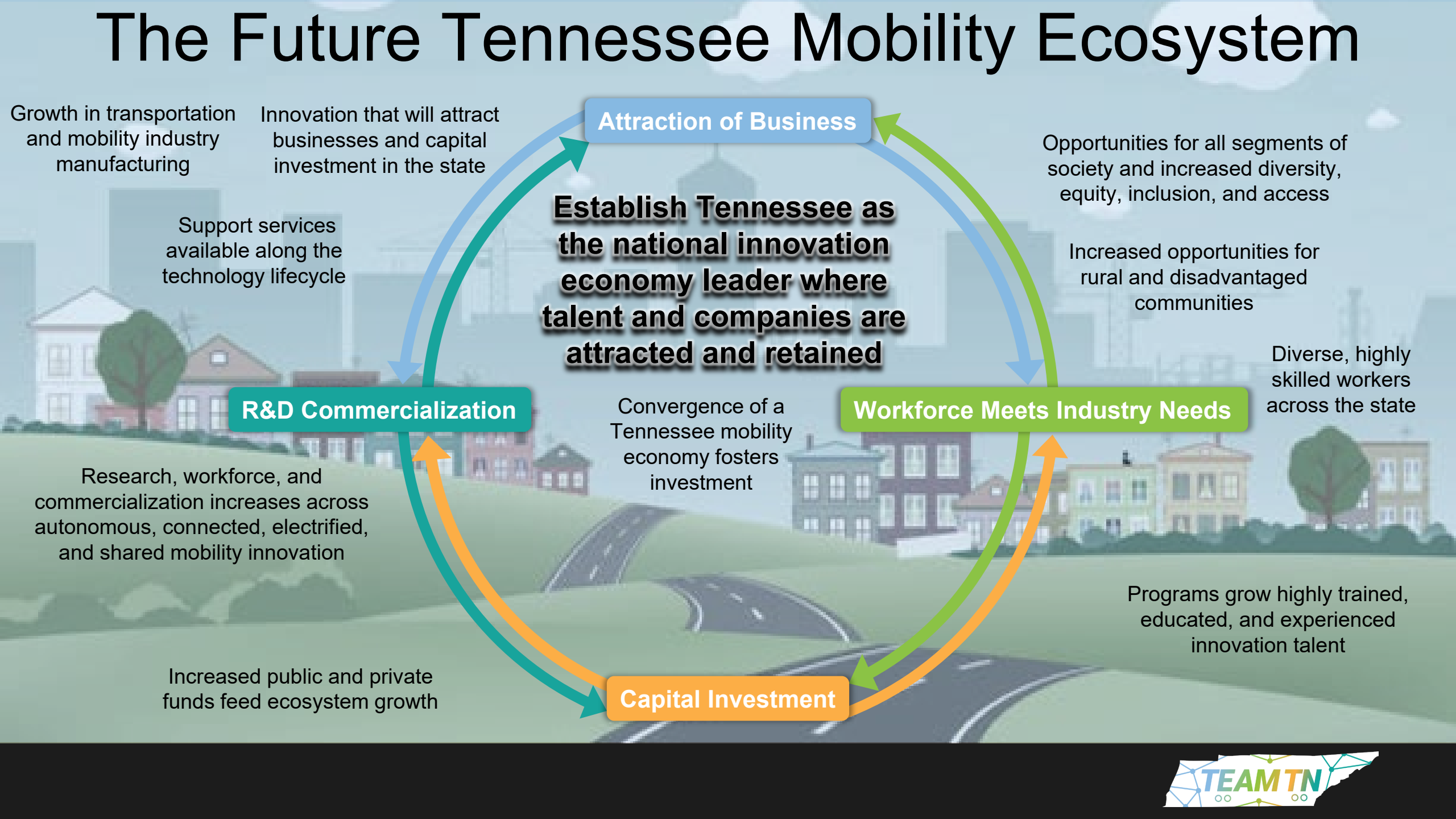
TEAM TN

Advancing Mobility Solutions for Tennesseans

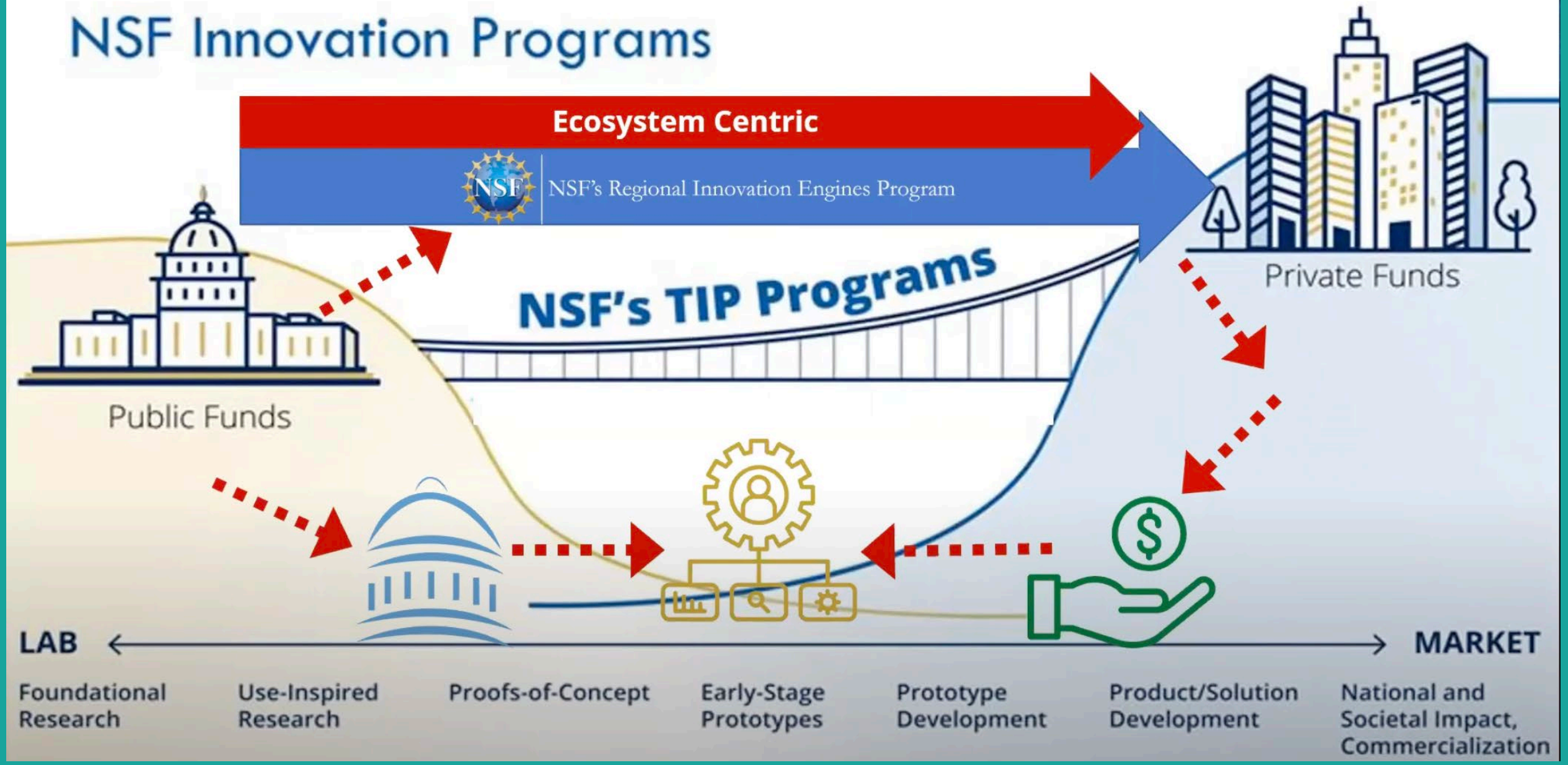
NSF ENGINES
DEVELOPMENT AWARD

TEAM TN

The Future Tennessee Mobility Ecosystem



NSF Innovation Programs



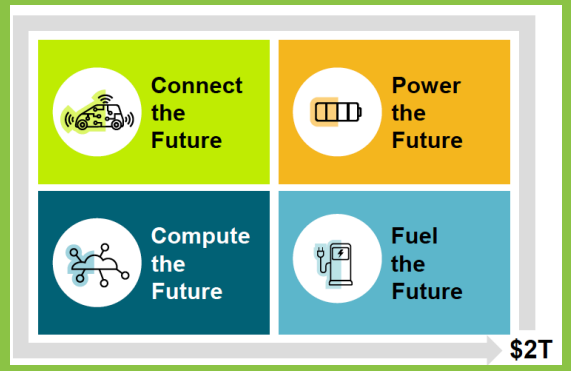
Call to Action:

*Unlock generational opportunity with R&D-focused investment to secure and grow **Tennessee's mobility future***

OPPORTUNITY

$2T global future mobility opportunity at stake

Generational opportunity represents a call to action for Tennessee



CHALLENGE

Tennessee underperforming in attracting mobility R&D investment

Tennessee is behind in all-time mobility-sector R&D investment (#41)

All-Time Ranking

…	…
39	Arkansas
40	Kansas
41	**Tennessee**
42	Oklahoma
43	Maine
44	South Carolina
…	…

SOLUTION

TEAM TN

Technology Enabled Advanced Mobility for Tennessee

Mobility Innovation Initiative positions Tennessee for ***national leadership***

Guidehouse Inc, *Market Recommendations Report: Tennessee Mobility Economic Future Executive Summary* (February 2023). Funded by VU, UT System, TVA, and ORNL

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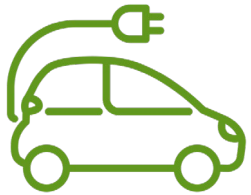
Securing TN Leadership in Mobility

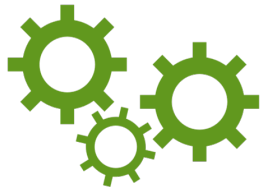
TENNESSEE TODAY

Nation's **fourth largest producer of vehicles**

Continuing **investments in manufacturing base**; new EV battery manufacturing facilities totaling $8.056B and 7,400 new jobs



TENNESSEE TOMORROW



Generational opportunity to shape **innovation-oriented** future for Tennessee in **mobility and adjacent industries**

Advanced technologies, changing regulations, national clean energy goals, changing demographics, customer preferences, and **changes in the industry players themselves**, changing the landscape

$$$

$2 Trillion market opportunity in 2030

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Use-Inspired R&D Themes

Use-Inspired R&D & Translation to Practice

Automation

Connect & Secure
Vehicles are getting smarter, relying on secure connections to offboard systems, infrastructure, and networks

Compute
Integration of complex systems requires advances in computing power, sensors, and analytics

Decarbonization

Power
Transition to alternative powertrains prioritizes battery production to power modes on and off roads

Fuel
Innovative fueling infrastructure must meet real-world expectations for transporting people and goods

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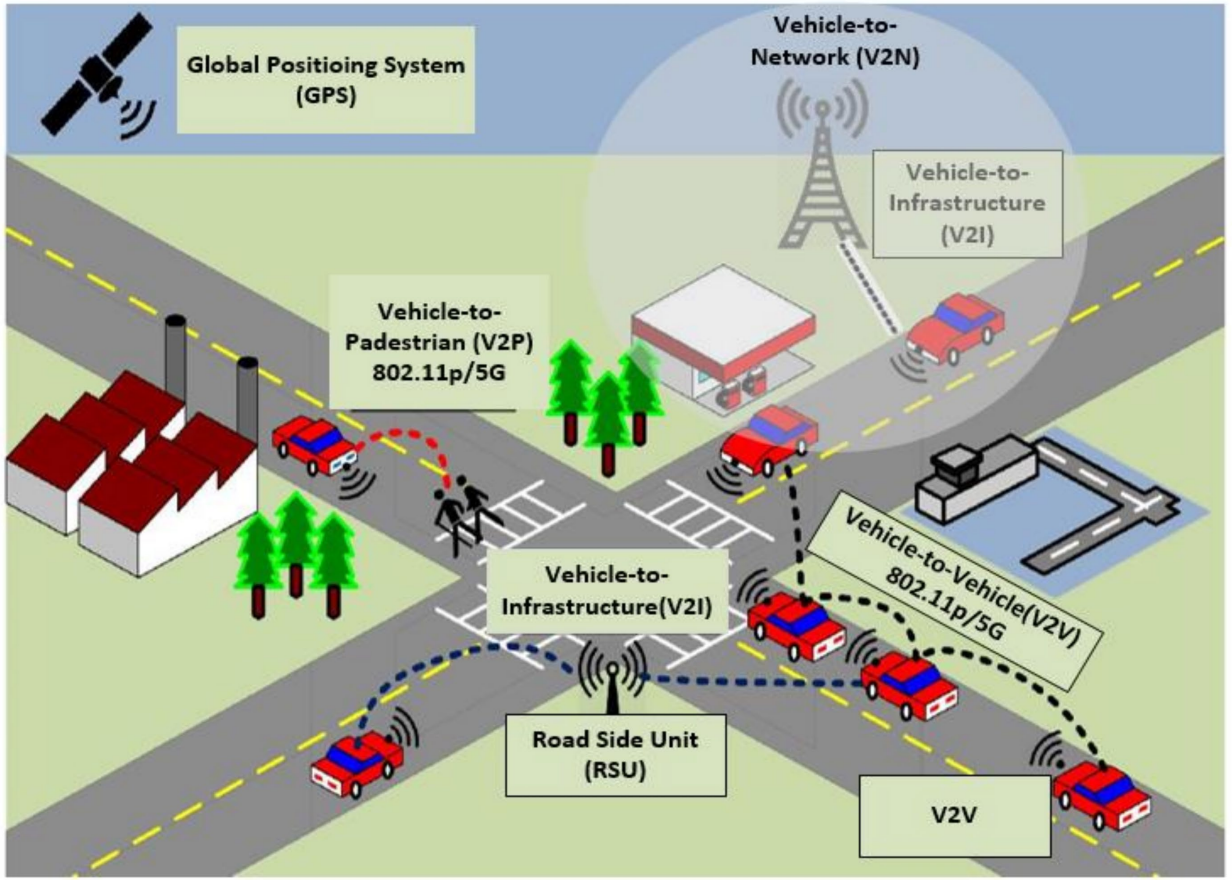

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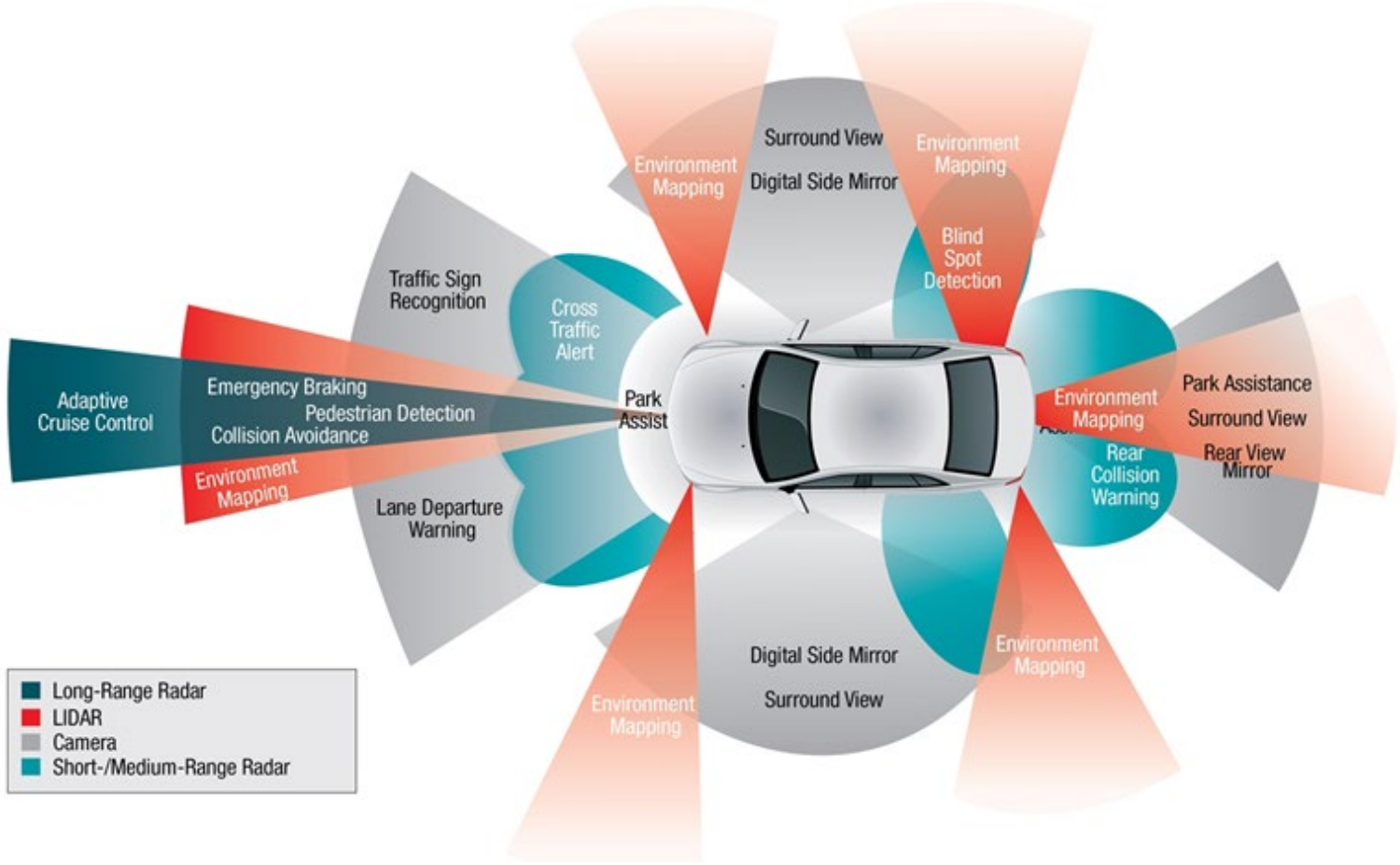

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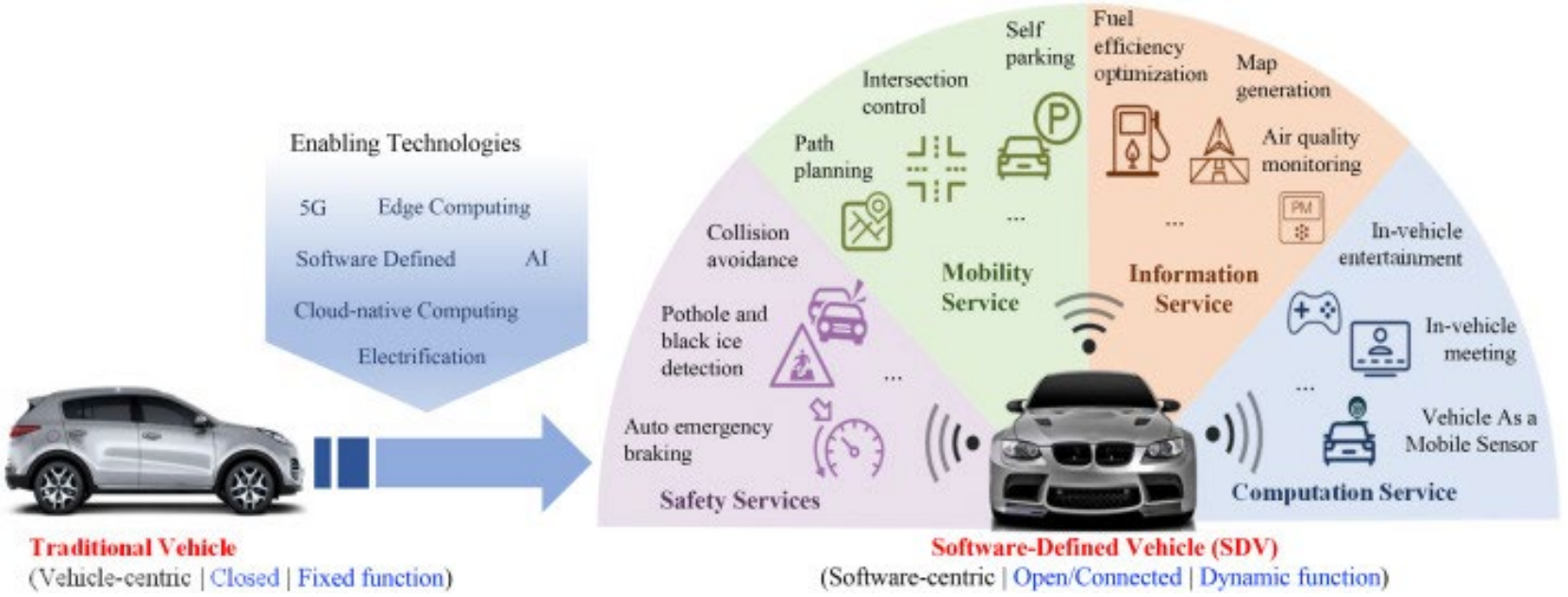

Use-Inspired R&D Themes

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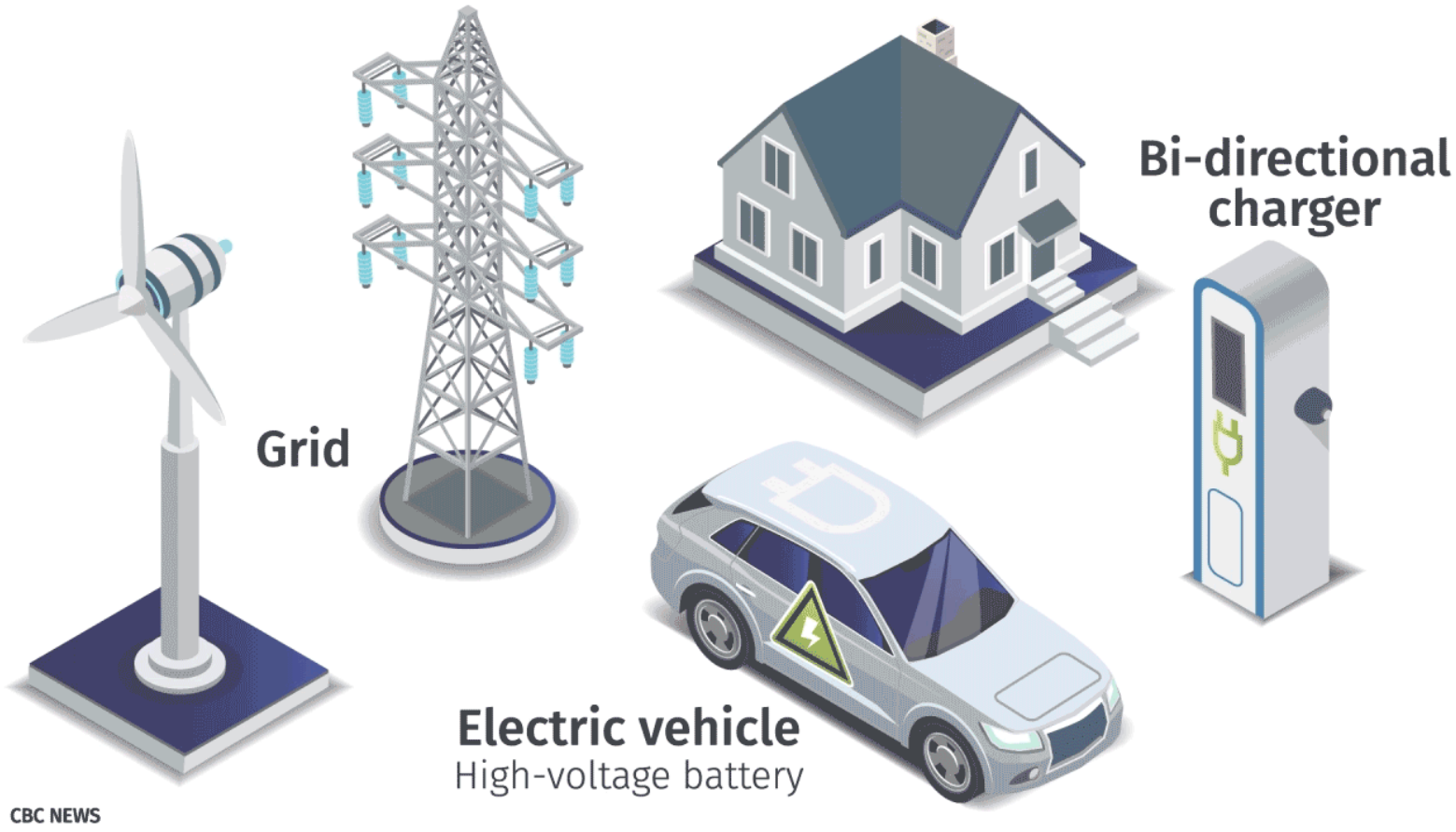

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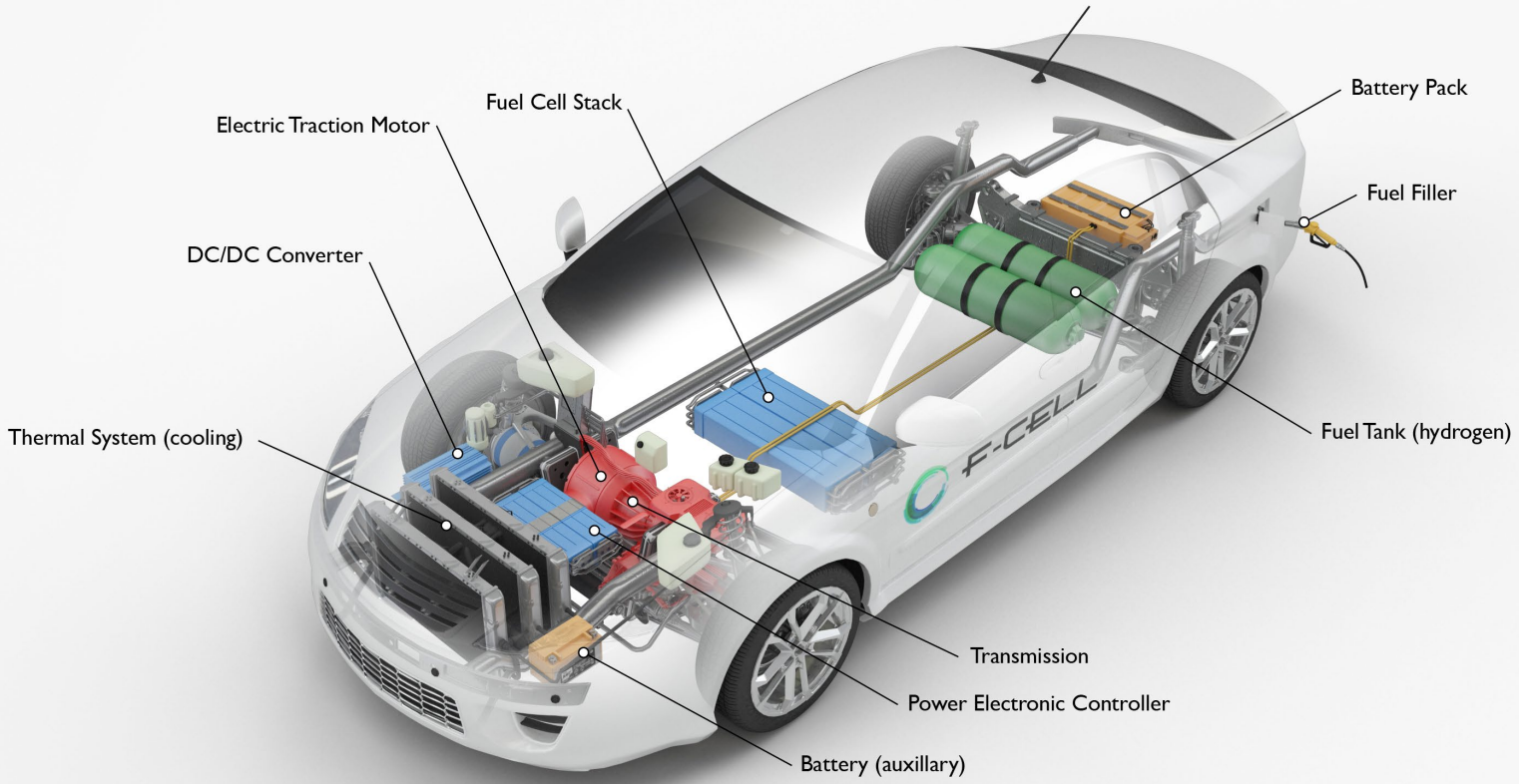
Use-Inspired R&D Themes

Use-Inspired R&D & Translation to Practice

Hydrogen Fuel Cell Electric Vehicle



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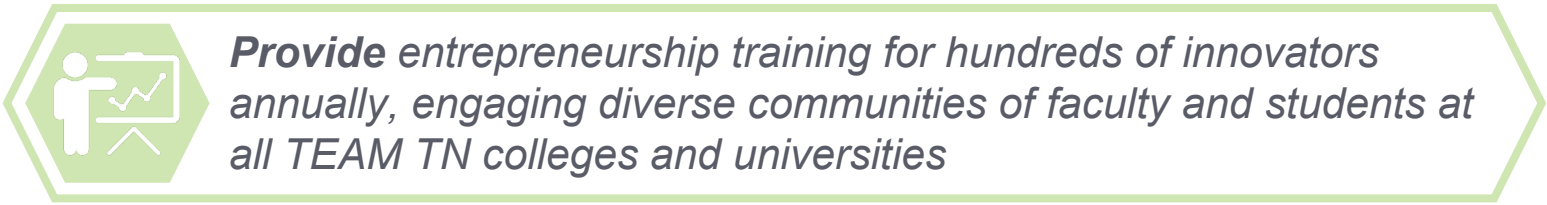
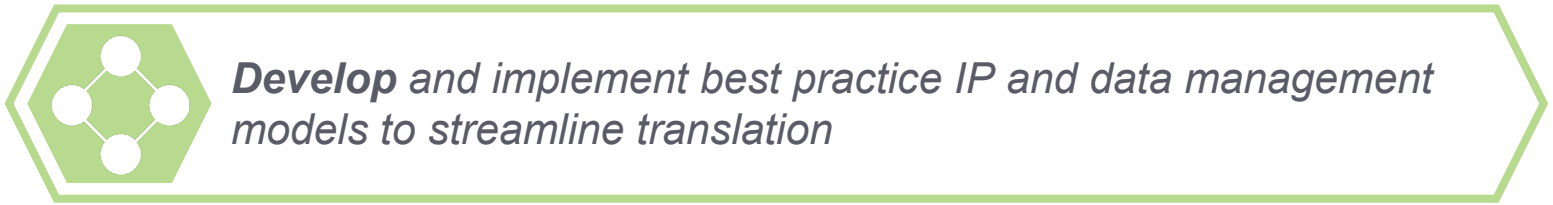
Innovative fueling infrastructure must meet real-world expectations for transporting people and goods

Translation of Innovation into Practice



Provide *entrepreneurship training for hundreds of innovators annually, engaging diverse communities of faculty and students at all TEAM TN colleges and universities*

- Large-scale, Multi-institution Collaborations
- Transdisciplinary Mobility Research
- Intra-Network Collaboration

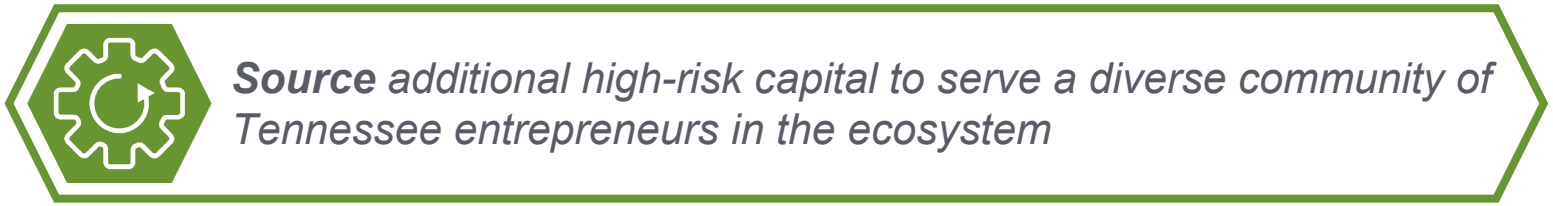


Develop *and implement best practice IP and data management models to streamline translation*

- Research and Innovation Infrastructure
- Research Grants
- Rich Experiential Learning

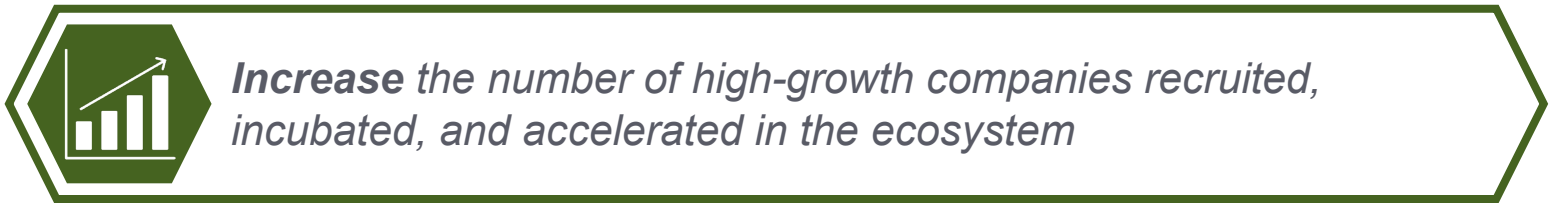
Grow *the (annual) number of high-quality invention disclosures produced, and licenses issued by partners*

- New Research Frontiers
- Internship and Apprenticeship Programs
- Opportunities from High School to Grad School



Source *additional high-risk capital to serve a diverse community of Tennessee entrepreneurs in the ecosystem*

- Building New Partnerships
- Expanding Innovation Programs
- Extending Our Research Infrastructure



Increase *the number of high-growth companies recruited, incubated, and accelerated in the ecosystem*

- The Next Generation of Entrepreneurs
- Spin-outs and Startups

Workforce Attraction Initiatives in TN

Design, implement, and make accessible *a suite of initiatives to strengthen preparation of the diverse STEM professional and skilled technical workforce necessary to* ***attract, seed, grow and diversify Tennessee's knowledge and technology intensive industries****.*

1

Increase the number of ***Tennesseans completing STEM programs*** at all levels

2

Increase the number of ***out-of-state students*** enrolling in and completing Tennessee's higher education STEM programs

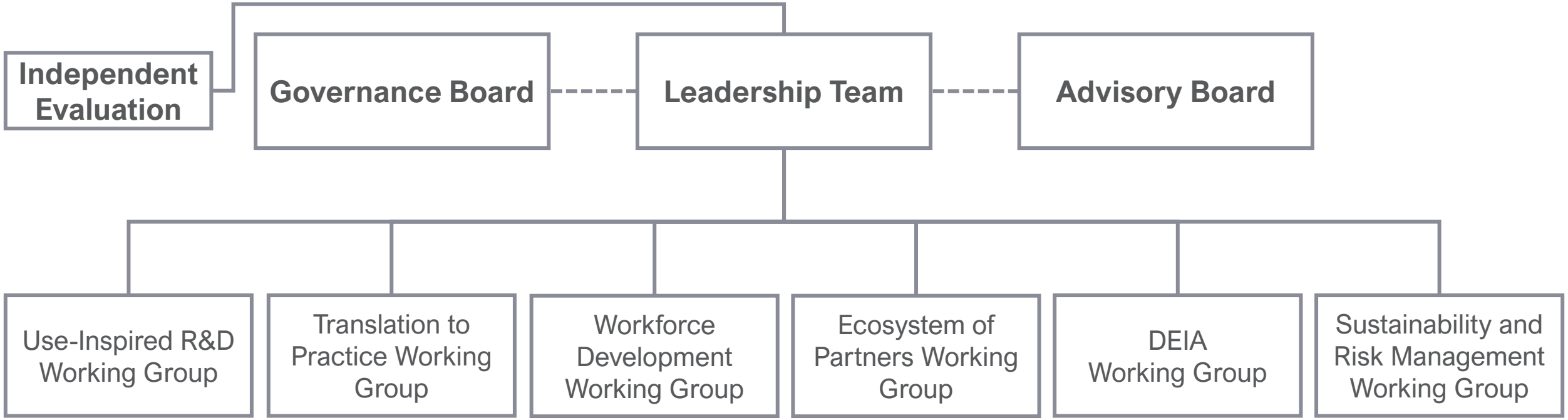
3

Develop ***learner-centered pathways*** to support the development, reskilling, and upskilling of workers and job seekers

4

Provide students enrolled in STEM programs at all levels with the opportunity to develop ***AI and IT competencies***

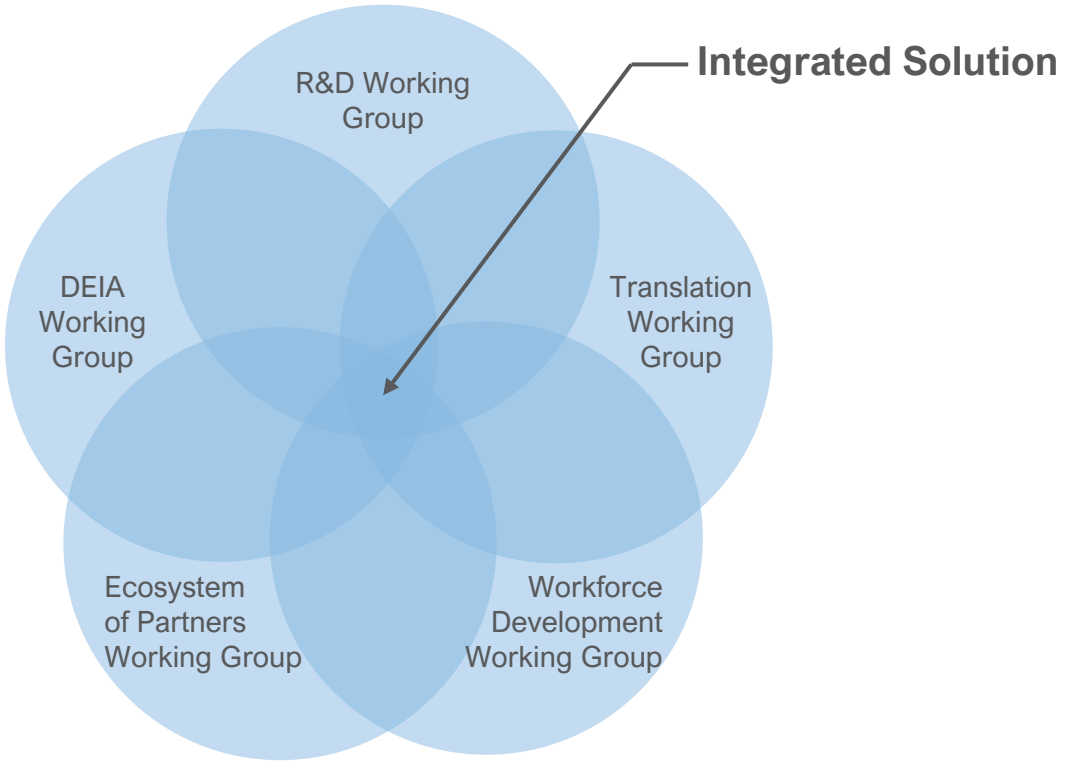
Management and Organizational Structure



Working Groups

Use-Inspired Research & Development Working Group	Explore real-world R&D challenges to generate use-inspired R&D outcomes and incentives for innovators to move technology from the lab to the marketplace.
Translation of Innovation to Practice Working Group	Develop strategies to support the rapid and effective translation of use inspired R&D outcomes to practice.
Workforce Development Working Group	Create inclusive, accessible workforce development programs that meet the evolving needs of individuals, diverse urban and rural communities, and knowledge-based firms of all sizes.
Ecosystem of Partners and Stakeholders Working Group	Develop strategies to sustain an innovation ecosystem of trusted and committed partners that enables the success of our vision, including the exploration of place-based innovation strategies critical to both urban and rural communities.
Diversity, Equity, Inclusion, Accessibility Working Group	Explore how electrification, automation, and digitization can help disadvantaged communities access jobs, services, and other benefits they were previously cut off from. Incorporate energy justice principles and develop an Equity Action Plan.

Develop a Strategic Roadmap for the State



1

Identify current existing resources in the state

2

Pinpoint gaps and needs in Tennessee

3

Develop a strategic and integrated solution

What’s in it for me?

Industry Partners

- Ability to influence the direction of the research and workforce development programs
- Access to research and workforce development funds from NSF and other sources that would be targeted to their challenges
- Collaboration with top researchers throughout the state with lower institutional boundaries
- Ability to network and co-sponsor activities with universities, ORNL, industry, community, and government officials
- Access to a specialty-trained diverse workforce
- Preferred access for licensing and IP terms for paying members and research sponsors

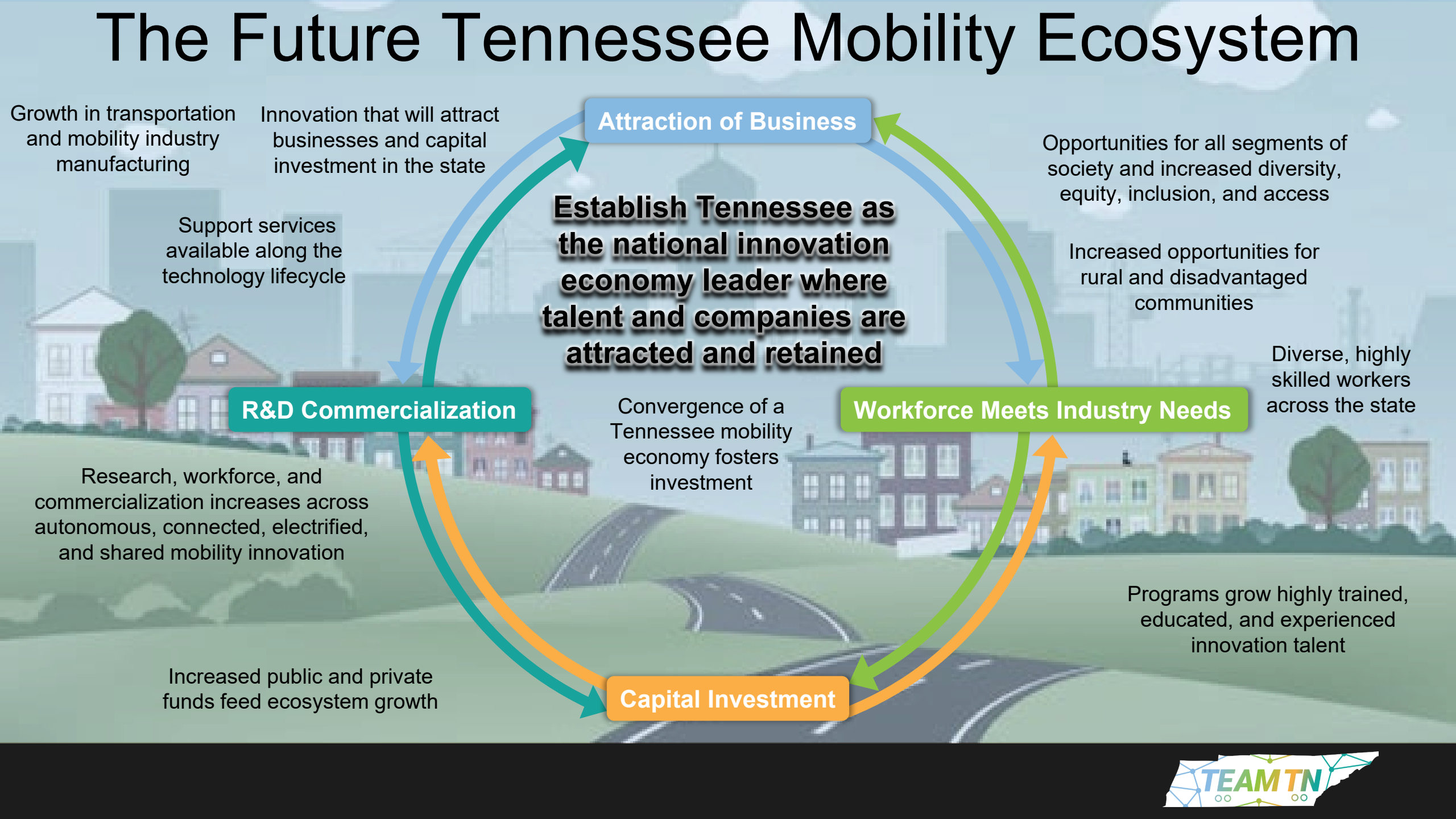
Venture Capital Partners

- Ability to influence research program to steer towards commercializable innovation that is use-inspired
- Ground-level access to innovation to invest in
- Attraction for more venture capital to the region to make the Tennessee VC scene more dynamic
- Access to out-of-state capital and in-state capital not in the market currently
- Deal flow - Additional opportunities to invest in
- High-fidelity deals will be available

Government Partners

- Leveraging previous investments in the economy to build additional economic activity
- Move Tennessee into a position to lead the nation in the innovation economy
- A diverse workforce in the mobility industry ready to meet the influx of jobs in the state
- Added competitiveness for recruitment of companies to the state
- Research and development that is built to withstand economic downturns and lead the country in innovation
- Higher wage jobs for residents and increased tax receipts

The Future Tennessee Mobility Ecosystem



Get involved!

TEAM TN

teamtn.org