

Triennial Strategic Plan

Transportation Research Board

Committee on Information and Knowledge Management (AJE45)

Committee Leadership:	Kendra Levine, Institute of Transportation Studies Library, UC Berkeley (Co-Chair) Frances D. Harrison, Spy Pond Partners, LLC (Co-Chair) Alex Linthicum, U.S. DOT Volpe Center (Vice-Chair) Benjamin Anyacho, Texas DOT (Research Coordinator) Cara Marcus, RTAP (Communications Co-Coordinator) Jessica VanDenBogaert, Florida DOT (Communications Co-Coordinator) Leni Oman, AASHTO CKM Liaison
TSP Three-Year Period:	April 2022 to April 2024
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1. Committee Future Outlook Statement

Introduction

As the economy and society progress with new technology development, adapt with non-traditional ways of working, and embrace vast data generation, real-time connectivity, digitalization and evolving stakeholder expectations, information and knowledge management (IKM) is vitally important for better business outcomes for the sector. Effective IKM practices lead to improved collaboration, increased transparency and trust, reduced administration costs, saved time, and simplified processes to make them better responsive to practitioners and stakeholders.

Information and knowledge management supports all [TRB critical issues](#) including system performance management, safety, resilience, and sustainability. Information and knowledge management helps enhance the performance and efficient delivery of an organization's mission, productivity of its workforce, and provide building blocks for modernization. Knowledge management is still relatively new in the transportation sector and information management practices have not yet been used to their full potential. Our aspirational goal is to elevate awareness and understanding of these practices, enable organizational capabilities, and institutionalize use of these practices in all aspects of transportation organization management and operations. This Triennial Strategic Plan identifies activities to achieve this aspirational goal by fostering broader use of both established and leading edge practices, promoting research and development to advance practices and capabilities, and increasing the engagement of our members and friends.

Committee Vision

Knowledge and information management is a core function within the transportation community, used to ensure that:

- transportation information and knowledge are widely accessible and located easily,
- transportation information is optimized to achieve business objectives
- transportation knowledge loss is minimized during organizational and individual transitions, and
- transportation knowledge for emergent work is developed and moved into practice efficiently and effectively.

Committee Mission

The mission of the TRB Committee on Information and Knowledge Management (IKM) is to advance and disseminate practices that improve knowledge and information creation, access, sharing, preservation, retention, use and transformation within and across transportation organizations. The committee identifies critical research needs in these areas, promotes understanding of these topics throughout the transportation community, and fosters the use and advancement of library and information science and knowledge management practices through education, implementation, training, collaboration, outreach and research.

Committee Interests

The Committee is interested in building transportation workforce capacity and productivity with a focus on:

1. Fostering research and innovation;
2. Successfully deploying current and emerging knowledge and information management technologies and strategies; and
3. Strengthening agency governance to align and coordinate people, process, technology and content strategies.

Specific interests within each of these three areas are summarized below.

Fostering Research and Innovation

- **Culture** - fostering learning and knowledge sharing cultures that are foundational to innovation. This includes building a willingness to share pre-publication research results to accelerate the research cycle.
- **Networks** - strengthening information and knowledge sharing networks and communities of practice within and across transportation organizations; and building expertise directories to help people tap into sources of knowledge.
- **Information Organization and Access** - enabling data/information reuse.
- **Information Literacy** - building an understanding among transportation professionals about how to identify and qualify information sources, how to use information appropriately, when and how to share information, and how to create and maintain metadata.

Successfully Deploying Current and Emerging Knowledge and Information Management Technologies and Strategies

- **Semantics** - creating and using glossaries, taxonomies, thesauri, ontologies, and data dictionaries to enable common understanding of concepts, terms, and relationships and provide a foundation for improved findability, navigation, and data integration.
- **Findability** - improving findability, access and integration of data, information and knowledge.
- **Information Types** - distinguishing different information formats, uses, and associated risk levels.
- **Enterprise Architecture**¹ - developing robust agency enterprise architecture practices that link business, data/information, application and system architecture layers to support agency goals and performance.
- **Knowledge Bases** - capturing and improving access to expertise, decisions, commitments, and ideas for use throughout the organization, especially for events, processes, and attributes previously not recorded.
- **Collaboration** - enabling collaboration through expertise directories and secure tools for sharing knowledge, information, and data.
- **Efficiency** - improving efficiency through knowledge supply chain development and practices such as job aids, push and pull resources, and anticipatory knowledge systems.
- **Technology Trends** - investigating Big Data, automation, Internet of Things, cloud computing, Artificial Intelligence (AI), Machine Learning (ML) and Cognitive Computing techniques that advance applications for semantic search, document classification, knowledge or feature extraction, and intelligent virtual assistants.

Strengthening Agency Governance

- **Organizational Alignment with Corporate Strategy** - establishing organizational models and practices for information and knowledge management with consideration of roles, responsibilities, resourcing and coordination/collaboration across related organizational functions and disciplines.
- **Interagency and Sector Coordination** - promoting sector wide attitudes and behaviors toward information and knowledge management; ensuring coordination and collaboration on development and use of data and information within and across organizations, and with the public where applicable.
- **Standards Adoption** - development, adoption and implementation of data and metadata standards.
- **Enterprise Architecture Practices** - fostering and promoting the understanding and use of enterprise architectures.
- **Prioritization of IKM Investments** - treating information and knowledge as strategic assets that provide value throughout their life cycles with varying risk profiles.
- **Adherence to Policy and Legislation** - adhering to changing laws and policies including freedom of information; paperwork reduction, accessibility, security, privacy, performance and financial reporting; e-government, and intellectual property.

¹ See for example, <https://www.scitepress.org/papers/2016/59160/59160.pdf>

Factors and Influences that will Shape Committee Activities

Over the next several years, the Committee's activities and areas of focus will be influenced by the following key trends:

- Increased focus on multimodalism and system operations
- Increased focus on diversity, equity, and inclusion
- Evolution of the transportation workforce through retirements, organizational restructuring, and competency changes
- Increased expectations for transparency and collaboration
- Rapidly evolving information science and technological capabilities
- Increased expectations for information access and integration across organizations and users
- Increased cybersecurity risk
- Increasingly limited transportation agency resources, driving a focus on strategic prioritization
- Increased tendency toward remote work, virtual interaction and digitalization.

2. Committee 3-Year Goals, Strategies, and Actions

Highest priority strategies and actions are marked with an asterisk (*).

Goal 1: Advance Research

Engage a diverse mix of researchers and transportation agency staff to identify critical research questions, develop research agendas, issue calls for papers and posters, and pursue avenues for advancing research projects.

Strategies

- 1.1 *Transition leadership of the joint AASHTO/TRB KM Research Subcommittee.
- 1.2 *Increase bench strength and engagement within the Research Subcommittee.
- 1.3 *Develop priority research needs for advancing the state of information and knowledge management practice.
- 1.4 Work to increase representation and diversity of IKM committee members and friends on research panels.
- 1.5 Facilitate use of completed research.
- 1.6 Track awareness and use of completed research.

Actions

- *Identify a new AASHTO CKM Research Subcommittee leader.
- *Input research needs statements into the TRB Research Needs Statements (RNS) Database.
- *Set a baseline and track the number of people authoring problem statements, hosting research outreach events or other IKM research activities.
- *Conduct a survey to understand awareness and use of IKM-related research products.
- Improve the way that research findings are shared (e.g., consider topical compilations of executive summaries).
- Document the number of IKM members and friends involved in research panels and increase the number over the lifetime of the plan.

- Participate in Committee Research Coordinator (CRC) meetings.

Goal 2: Curate and Share Practice-Ready Knowledge

Advance adoption of successful and impactful IKM practices through curating and sharing information and providing opportunities for peer-to-peer sharing of experience.

Strategies

- 2.1 *Monitor, curate, and share trends, successful practices, and lessons learned (successful and unsuccessful) for organizing, preserving, accessing, and finding information and knowledge in support of transportation research and business needs - both within the US and Internationally.
- 2.2 *Foster networks, such as Communities of Practice, for sharing knowledge and expertise related to information and knowledge management.
- 2.3 Identify information and knowledge management practices that support accessibility, diversity, and inclusion.
- 2.4 Identify agency challenges and training needs related to information and knowledge management.
- 2.5 Advance agency and cross-agency adoption of successful practices.

Actions

- *Identify a point person responsible for [LibGuide](#) and IKM website content curation including updates, monitoring, and communicating about resources of interest.
- *Organize and host at least 2 webinars, in collaboration with the AASHTO Committee on Knowledge Management (CKM).
- *Plan annual meeting sessions and workshops and issue calls for papers and posters. Consider establishing a topical focus each year, perhaps drawing from the TRB Annual Meeting theme.
- *Conduct listening sessions to understand current agency challenges related to information and knowledge management and brainstorm committee activities to help agencies to meet these challenges through continuous improvements
- Survey agency needs related to improving information literacy.
- Monitor and collect trends, practices, and case studies via surveys and regular Committee meetings, including quarterly conference calls and the TRB Annual Meeting.
- Collaborate with the AASHTO CKM
- Curate IKM publications and research in progress and share at events or via various communications channels.
- Encourage use of resources from and participation in information and knowledge management professional organizations outside of the transportation community (e.g. APQC).

Goal 3: Raise Awareness of Committee Activities

Regularly employ a variety of distribution channels to share key activities and messages both among Committee members and friends, as well as among stakeholders and the transportation industry at-large.

Strategies

- 3.1 *Maintain an up-to-date Committee website.
- 3.2 *Maintain regular communication with Committee members and friends on committee activities in order to maintain interest and high levels of engagement.
- 3.3 *Provide an easy method for Committee members and friends to provide feedback (centralized email, form, etc.).
- 3.4 Increase visibility of the Committee within TRB.

Actions

- *Complete a redesign of the Committee website to better reflect the full IKM committee scope:
 - Define requirements to ensure website is “right-sized”
 - Actively recruit members/friends to support the website redesign
 - Strengthen committee branding, including a new color palette and logo
- *Maintain content (provided by committee leadership and a content coordinator) on the committee website..
- *Use available distribution channels to provide advance announcements to the Committee members and friends lists.
- *Evaluate the Committee’s social media presence and develop a social media strategy.
- *Attend meetings of the TRB Committee Communications Council (CCC).
- Attend meetings of the TRB International Coordinating Council (A0020C).

Goal 4: Coordinate Activities with TRB and AASHTO

Maintain strong liaisons with other TRB committees, the AASHTO CKM, and other related AASHTO committees and encourage members and friends to establish ties with organizations in their networks.

Strategies

- 4.1 *Regularly engage with members of the AASHTO CKM.
- 4.2 Explore opportunities to liaise or interact with subject-specific knowledge management organizations (e.g. Centers of Excellence).
- 4.3 Maintain liaison with at least the TRB Committees below.
- 4.4 Maintain liaison with at least the AASHTO Committees below

TRB Committee		FY21 Liaison Candidates
AJE15	Workforce Development and Organizational Excellence	Victoria Beal Chris Young Glenn McRae
AJE35	Research Innovation Implementation Management	Sue Sillick Cindy Smith Stephanie Dock
AJE70	Data for Decision Making	Frances Harrison
AJE10	Strategic Management	Alex Linthicum
AJE20	Performance Management	Jessica VanDenBogaert
AED30	Information Systems and Technology	Doug Couto

AED10	Statewide/National Transportation Data and Information Systems	Frances Harrison
AED20	Urban Transportation Data and Information Systems	Kendra Levine
AED80	Visualization in Transportation	TBD
AED50	Artificial Intelligence and Advanced Computing Applications	TBD
AME00(1)	History Subcommittee	Kendra Levine

AASHTO Committee	FY21 Liaison Candidates
Committee on Knowledge Management	Leni Oman Benjamin Anyacho
Committee on Human Resources	Christopher Young
Data Management and Analytics	Leni Oman
Special Committee on Research and Innovation - Research Advisory Committee Task Force on Collaboration and Coordination, TKN Working Group	Cindy Smith Stephanie Dock
National Transportation Knowledge Network	Cindy? Kendra? Sue? Enid? Laura? many choices

Actions

- *Identify TRB and AASHTO committee liaisons.
- *Promote activities of partner organizations.
- *Establish outreach guidance and talking points for liaisons.
- Engage committees in conversations about how improved IKM practice might further their objectives.
- Support Members and Friends who wish to strengthen ties with additional groups (e.g. TRB modal committees, IKM groups and associations, etc.)

Goal 5: Manage the Committee Effectively

Manage the Committee in order to fulfill its mission and achieve Goals 1-4.

Strategies

- 5.1 *Maximize engagement of Committee Members and Friends.
- 5.2 *Use information and knowledge management tools and best practices whenever possible.
- 5.3 *Manage the Annual Meeting planning cycle as an integral part of committee activities
- 5.4 Foster diversity and inclusion in the composition of the committee and conduct of committee activities.

Actions

- *Committee leadership to define and publish key committee processes and timelines. Examples include but are not limited to selecting session topics, calling for papers and posters, liaising with committees, planning sessions, developing research needs, and reviewing papers.
- *Committee leadership to identify and publish specific roles and responsibilities.
- *Add a new Membership Coordinator role, responsible for looking at committee turnover, identifying new members, helping with onboarding, and hosting small groups with committee members to discuss what activities they would like to lead or support.
- *Identify specific practices that foster diversity and inclusion.
- *Identify a collaboration platform for the committee to use for document sharing and discussion
- Recruit international members in order to broaden diversity of experience.
- Recruit young members in order to solicit diversity of opinions and talents across generations and provide membership continuity.