

TRB Committee on Information and Knowledge Management (AJE45)
Summer Committee Meeting
12 PM – 1:30 PM (EDT)
Thursday, August 13, 2020
NOTES

Attendees: Frances Harrison (Spy Pond Partners), Kendra Levine (University of California, Berkeley), Alex Linthicum (Volpe), Leni Oman (WSDOT), Cindy Smith (Mississippi DOT), Sue Zheng (FDOT), Adalena Ahmad (WMATA), Susan Sillick (MDT), Priyanka Alluri (Florida International University), Aarion Franklin (Michael Baker International), Jezmynne Arroway (Idaho Transportation Department), Michael Pipp (MDT). Bob Sweet (NTKN), Ramona Brock (KY Transportation Cabinet), Terry Swygert, (SCDOT), Kevyn Barnes-Sanchez (TxDOT Research Library/UT Austin), Konstantinos Gkoumas (European Commission - Joint Research Centre, Stephanie Clark (DDOT), Alireza Jamalipour (Connecticut DOT), Aileen Switzer (WisDOT), Regina Hopper (The NEXT Education), Upul Attanayake (Western Michigan University), James Hall (University of Illinois Springfield), Jessica VanDenBogaert (FDOT), Gabriela Holdcroft (FHWA), Kevin Murata (Hawaii DOT), Jarrod Stanley (Kentucky Transportation Cabinet), Jamey Whitley (Kistler Instruments), Asghar Dashti, Enid White (WYDOT), LaDonna Rowden (Illinois Department of Transportation), Mary Moulton (USDOT/National Transportation Library), Alana Spendlove (Utah Department of Transportation), Sandra Brady (Louisiana Transportation Research Center Library), Asghar Dashti (California State Lands Commission), Raymundo Martinez (TransCore), Bobbi deMontigny (Montana DOT), Dr. Joseph Glowitz, PE, PMP (PS-E, LLC), Tony Geara (City of Detroit) Thomas S. Elliott (FHWA), Carin Michel (FHWA), Victoria Beale (Ohio DOT), Denise Bedford (Georgetown University), Ralph Poole, Iknow, Amanda Holland (Alaska DOA), Lorri Economy (Utah DOT), Hongtao Dang (CWU), Adam Arthur (FHWA), Yongcheol Lee (LSU)

Agenda

<p>12:00 –12:10</p>	<p>Welcome and Introductions Committee Title: Information and Knowledge Management Committee (AJE45) <i>Approved Scope: The committee is concerned with advancing and disseminating practices that improve knowledge and information creation, access, sharing, preservation and retention within and among transportation organizations. The committee identifies critical research needs in these areas, promotes understanding of these topics throughout the transportation community, and fosters the use of library and information science and knowledge management practices through education, training, collaboration, outreach and research.</i> See the final AJE45 committee proposal at: https://www.trbikm.org/wp-content/uploads/2020/08/Proposed-new-committee-AJE45-final-07162020.docx</p> <p>Members and Friends Membership being processed by TRB Become a Friend of the committee at https://www.mytrb.org/Committees/SelfNominationAsFriend</p> <p>Review of Agenda</p>	<p>Frances Harrison</p>
<p>12:10 – 12:25</p>	<p>Subcommittee Updates: Research</p> <ul style="list-style-type: none"> • See attached (pages 3-4) 	<p>Leni Oman/Enid White</p>

	<p>Communications</p> <ul style="list-style-type: none"> ➤ website update in progress – seeking volunteers to help ➤ seeking ideas for a new logo <p>See: TRBIKM.ORG</p>	Jessica VanDenBogaert/ Bobbi deMontigny
12:25 – 12:40 pm	<p>Annual Meeting Planning:</p> <p>Current TRB Plans</p> <ul style="list-style-type: none"> • Theme: <i>Launching a New Century of Mobility and Quality of Life.</i> • All Virtual Meeting – vendor selected • Committee meetings: January 5-8 and 11-15, between the hours of 10:00 am and 5:00 pm Eastern Standard Time. • Sessions: January 21-22, between the hours of 10:00 am and 4:00 pm Eastern Standard Time, and January 25-29, between the hours of 10:00 am and 5:30 pm Eastern Standard Time. • Exhibits: January 25-29, between the hours of 10:00 am and 5:30 pm Eastern Standard Time. • Networking events: January 25-28, between the hours of 5:30 am and 7:00 pm Eastern Standard Time. <p>AJE45 Plans</p> <ul style="list-style-type: none"> • Session 1: Managing Information and Knowledge at Transportation Organizations – panel discussion of coordination/connections across library management and knowledge management functions • Session 2: Sharing Information and Knowledge in a Remote Work Environment: Lessons Learned and Gaps • Poster Session?? • Committee Meeting: strategic planning and action planning workshop ➤ Need ideas for panel members/presenters and volunteers for helping to organize the sessions. ➤ Need to decide if we should have a poster session and if so, what the topic(s) would be 	Kendra Levine
12:40-1:30	<p>AJE45 Strategic Planning Launch</p> <p>What does Information and Knowledge Management mean to you?</p> <p>What is our common purpose?</p>	Alex Linthicum & Priyanka Alluri

Update from the AASHTO/TRB Research Subcommittee

Co-Chairs: Leni Oman, WSDOT, omanleni@wsdot.wa.gov, and Enid White, WYDOT, (enid.white1@wyo.gov)

The following summarizes the status of research activities and work in development as well as some recent research resources on the topics of information, knowledge, library, records, and data management are listed below (and a few news articles).

Projects in development

- KM Leadership Engagement/Culture – Benjamin Anyacho and Denise Bedford
- KM Case Studies – updating for resubmittal – Cindy Smith
- AASHTO survey result curation and access – Sue Sillick
- COVID-19 and knowledge and information management – Leni

Other items in discussion:

- Knowledge translation

Projects in startup

- [NCHRP 23-14](#) Research Roadmap for Knowledge Management - \$300,000
- [NCHRP 23-17](#) Assessing and Measuring the Business Value of Knowledge Management - \$350,000

Submitted by other organizations but of interest to the information and knowledge management communities

- [NCHRP 23-12](#) Artificial Intelligence Opportunities for State and Local DOTs – A Research Roadmap
- [NCHRP 23-16](#) Implementing and leveraging Artificial Intelligence and Machine Learning at Departments of Transportation - \$250,000
- [NCHRP 25-64](#) Resources for State DOTs to Consider Greenhouse Gas Emissions and Climate Change in NEPA Documents \$375,000
- [NCHRP 07-31](#) State DOT usage of bicycle and pedestrian data: practices, sources, needs, and gaps \$800,000
- [NCHRP 17-96](#) Traffic Safety Culture Research Roadmap \$375,000
- [NCHRP 23-13](#) COVID-19 Research \$1,000,000
- CONTINGENCY PROJECT: G-05 Leveraging Big Data and Artificial Intelligence to Streamline Safety Data Analyses \$650,000

Projects underway

- [NCHRP 23-02](#) Guidelines on Collaboration and Information Security for State DOTs
- NCHRP 20-24(131) Mapping the Common Interests of AASHTO Committees
- NCHRP 20-24 (132) Understanding Knowledge Management in Context with Other Organizational Practices

Developed by other organizations but of interest to the information and knowledge management communities

- Using Knowledge Graph technology to improve online search capabilities – a TRB NCHRP pilot project, \$200,000

Recently Completed Research

Ready to use

- The Agency Capability Building Web Portal: <https://www.agencycapability.com/>

Webinars

- [TRB Webinar: Enter the Portal–The Transportation Performance Management \(TPM\) Portal](#) - August 12, 2020
- [TRB Webinar: Envisioning the Next Generation of Traffic Management Systems \(TMSs\)](#), September 8, 2020
- [TRB Webinar: Designing Beyond - Improving Airport Operations through BIM](#), September 22, 2020
- [TRB Webinar: Stay Current on Research in Progress](#), September 23, 2020

Recent reports in TRID

- *Implementing Information Findability Improvements in State Transportation Agencies* ([NCHRP Report 947](#))
- *Cybersecurity threats in the auto industry: Tensions in the knowledge environment*, Technological Forecasting and Social Change, Volume 157, Issue 0, 2020
- *1st TRIMIS Horizon Scanning Session, May 12, 2020*, 51p
- *Catalyzing Sustainable Transport Innovation through Policy Support and Monitoring: The Case of TRIMIS and the European Green Deal*, Sustainability, Volume 12, Issue 8, 2020, 18p
- *The Future of Airports: A Vision of 2040 and 2070: Topic No. 11: Human Resources and Education*, April 2020, 14p
- *Capacity Building Strategies for further growth of the ITS Sector in Europe*, 2019 6th International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS), 2019, 8p
- *A Mobility Information Management System (MIMS) for Rural Transportation*, 2002, 47p
- *Designing for the future: a cognitive adaptive man-machine-interface*, HUMAN FACTORS: A SYSTEM VIEW OF HUMAN, TECHNOLOGY AND ORGANISATION. ANNUAL CONFERENCE OF THE EUROPE CHAPTER OF THE HUMAN FACTORS AND ERGONOMICS SOCIETY 2009, 2010, 99-107
- *Research and Innovation in Smart Mobility and Services in Europe: An Assessment Based on the Transport Research and Innovation Monitoring and Information System (TRIMIS)*, 2020, 78p
- *BIM And GIS Data Integration: A Novel Approach Of Technical/Environmental Decision-Making Process In Transport Infrastructure Design*, Transportation Research Procedia, Volume 45, Issue 0, 2020, pp 803-810

Participant Comments/Discussion about Session Ideas

** Update 9/9/2020 – Due to this year’s virtual annual meeting, we have been informed that our committee is only able to sponsor ONE podium session. We are currently planning to do a session focusing on coordinated/connected library and KM functions – but ask panelists to comment on challenges related to the remote work environment.

Session on coordinated/connected library and KM functions

- OKDOT (pending article in KM Journal by Michael Molina and Cara Marcus)
- WSDOT
- UDOT
- MDOT (Bridge Design)
- WMATA (library for business essential documents + user group)
- MDT – have both functions, but in early stages of KM
- Private Sector – Goodyear has advanced KM initiatives + a revamped library approach (Denise B)

Session on IKM supporting remote work:

- Illinois DOT – interested in remote access to records
- Include records management in this (LA Metro?)
- Note that NCHRP 23-02 (Guidelines on Collaboration and Information Security for State DOTs) could be relevant to this topic – in early stages; literature review coming soon.
- FHWA’s KM unit is helping business units transition to virtual events, use MS Teams.
- Include lessons learned and challenges
- Victoria Beale - Teams is the preferred virtual meeting tool with Ohio DOT due to the security issues with Zoom.
- Upul Attanayake - Michigan DOT is using Team to manage all the meetings; ProjectWise is used for document and workflow management
- Kevyn Barnes - On the library side, our digitization efforts for legacy items has completely stalled out, including delays when people request a rescan of report due to poor quality images in a previously scanned report (pre-QC/QA procedures). Also, TxDOT recently suffered a ransomware attack that made multiple public documents unavailable. Luckily, many were archived in the state web archive system and some we had manually submitted to Wayback Machine and had access in the week that the directories were down.
- Joseph Glowitz - Most organizations scrambled simply for connectivity and collaboration... the next step is to refine the workflow of knowledge exchange, and total access to information resources, behind the firewall
- Cindy Smith - Mississippi DOT uses Zoom for meetings, and our internal website for a lot of collaboration. We have had VPN capabilities for 20 years dating back to the dial-up days, so working from home was an easy transition. I'm not sure how it worked in far-flung District/project offices where people may have not access to broadband.

- Enid White - There are also issues with some states not being able to use google, some cannot use zoom. There are technology hurdles to overcome.
- Derrick - OneNote, or a variety of shared collab services (Canva, Count, etc.) may be able to bypass considerations of state-limited internet services as they exist strictly in online environments.
- Denise Bedford - It sounds like you're talking about ensuring that we can capture both the tangible and intangible aspects of knowledge sharing in the new environment.
- LaDonna Rowden - IDOT would like to see something about exit interviews
- Leni Oman - Open data would be another thread in the remote environment.
- Sue Zheng - Where to draw the line between knowledge and information?
 - Upul Attanayake response - Mostly what people document or present is information. Knowledge is what an individual grasps by reading or listening based on their background and level of education.
 - Denise Bedford response: this is an artificial distinction. Both are an essential asset of the organization, particularly in transportation. We've learned over the years to look at these in terms of the three primary types of knowledge assets, one of which is explicit knowledge or what Buckland termed information.

Summary of Strategic Planning Breakouts

Breakout Groups were asked to answer two questions:

1. What does Information and Knowledge Management mean to you?
2. What is our common purpose?

Four of the 9 groups pasted their results into the chat box – these are provided below. Additional comments (based on verbal presentations from the other groups) follow.

Group 5: Aarion Franklin et al

What does information and knowledge management mean to us?

- A sense of security by providing the information we need to keep our organizations running
- Both information and knowledge are business essential assets

What is our common purpose?

- Addressing the need for a wholistic definition of information and knowledge that avoids hurtful segmentation within our discipline
- Preservation of information and knowledge for future use

Group 7: Frances Harrison et al

What does Information and Knowledge management mean to you?

- Ways of finding, and then manipulating or transforming data, information and knowledge to put it in context and so that it is useful for my current and future purposes
- Gathering, collecting, and disseminating information (written/spoken) that is relevant and useful to the receiver (quality and reliability) so that they can easily find and access it whenever they need to. Knowledge management goes a step further and involves sharing what is inside peoples' minds.
- Collecting, storing and disseminating information and knowledge. The knowledge part is particularly challenging.
- Implementation of practices that provide access to experts and resources that are needed to do your job.

What is our common purpose?

- Advancing practices that can be implemented to provide access to experts and resources that are needed to do your job.
- Share with the transportation community best practices and guidance on how to create exemplary knowledge and information management within transportation organizations and within the transportation community – through publication, presentation and other means.
- Above + share the consequences from not paying attention to information and knowledge management

Group 8: Kendra Levine et al

What does information and knowledge management mean to us?

- Knowledge is more accepted and foundational while information is more active and live and develops and informs knowledge.

What is our common purpose?

- The preservation, distribution and access of knowledge/information/data. A way to make it available and discoverable.

Group 9: Cindy Smith et al

What does information and knowledge management mean to us?

- Discoverability is huge. Organization challenges of large agencies to get efforts coordinated KM effort.
- Disconnects between IT, HR, sometimes Research, and SMEs--no coordinated effort in many agencies due to agencies being large.

What is our common purpose?

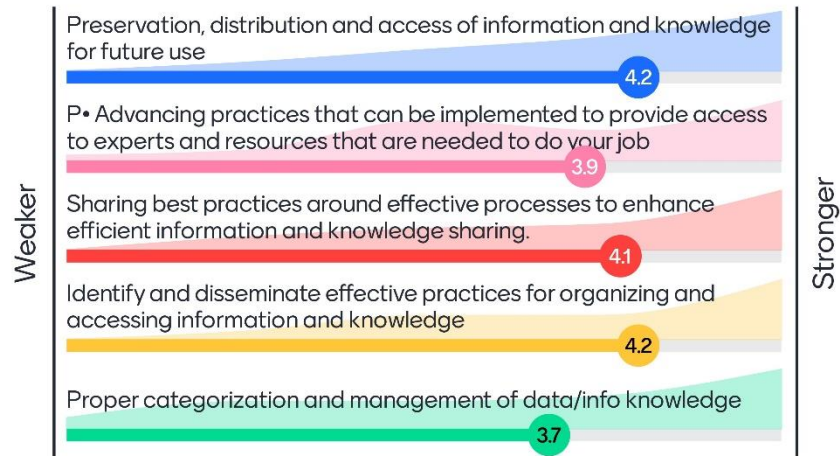
- Getting info to people, no matter what type of data/info.

Other thoughts not captured above:

What is our common purpose?

- Proper categorization and management of data/info knowledge
- Investigating efficient and effective ways to manage information and knowledge.
- How to use technology, organizationally-provided tools to achieve information and knowledge sharing
- How to make small, incremental improvements with the technology you are given to achieve efficient and effective ways to manage information and knowledge.
- Sharing best practices around processes to enhance efficient knowledge sharing
- Investigate, promote cultural approaches to knowledge sharing (vs hoarding).
- Bridging main repositories in our agencies together.

Rate how well these statements capture our common purpose:



Summary Observations

- We recognize that there are different types of knowledge/information assets including:
 - explicit – recorded information
 - tacit – what people know based on experience – difficult to articulate
- However, our group needs to adopt some common definitions so that we can more easily communicate with each other:
 - Some people use the term “information” as an umbrella term; others use it to refer to what has been recorded. (explicit)
 - Some people use the term “knowledge” as an umbrella term; others use it to refer to what exists within people but has not been recorded. (tacit).
- Information and Knowledge Management (IKM) involves planning and executing a variety of practices needed to connect people with knowledge & information (explicit and tacit):
 - creating
 - capturing
 - curating
 - categorizing
 - organizing
 - storing
 - interpreting/contextualizing
 - sharing
 - providing access to/distributing/disseminating
 - making discoverable and findable
 - preserving (for future use)
 - culling/deleting/forgetting
- Different techniques are needed for explicit and tacit forms of info/knowledge – e.g. communities of practice and apprenticeships are techniques for sharing tacit knowledge; building document repositories and establishing subscriptions are techniques for sharing information/explicit knowledge.
- We agree that our common purpose is to:
 - help transportation agencies advance IKM by identifying and disseminating information about successful practices – through research, webinars, and conference sessions.
- Specific issues of concern include:
 - how to effectively leverage available technology
 - how to make incremental improvements in a highly resource-constrained environment
 - how to communicate why IKM is important – and consequences of not doing it
 - how to address behavioral/cultural barriers (e.g. hoarding)
 - how to coordinate across different organizational functions (HR, IT, Library, Research, Core business units)
 - how to work in an environment with multiple repositories