



The Evolution of Knowledge Management at Airports

July 24, 2024
2:00-3:30 p.m. Eastern

Today's Learning Objectives

- **(1) Mitigate the loss of institutional knowledge using KM when employees change jobs or retire**
- **(2) Explore how to prepare for and respond to emerging trends**
- **(3) Ensure continuity of operations and how to maximize effectiveness and efficient use of resources**

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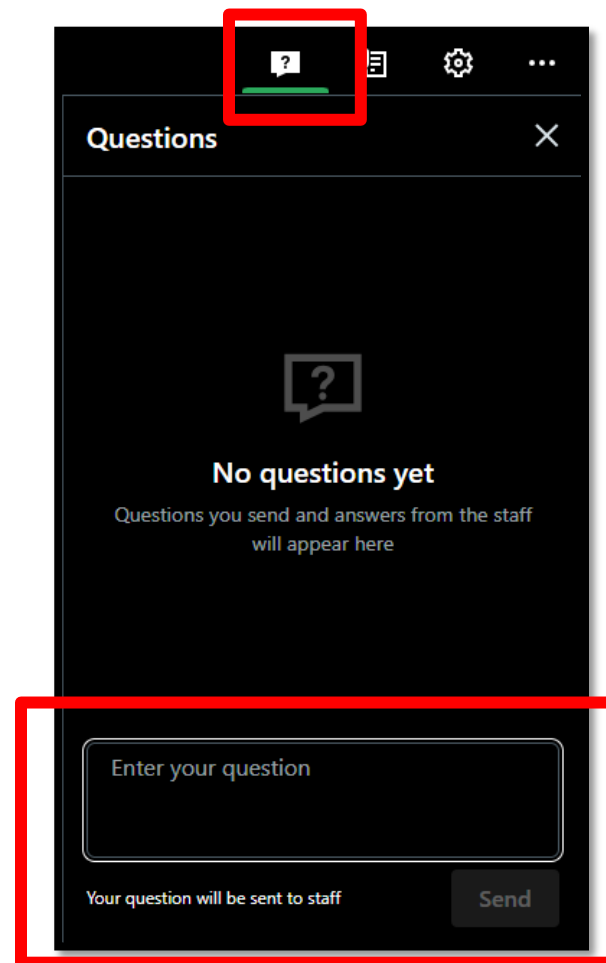
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Questions and Answers

Please type your questions into
your webinar control panel

We will read your questions out
loud, and answer as many as
time allows

#TRBwebinar



Frances D. Harrison

Principal Investigator

- Co-Founder and Chief Technical Officer, Spy Pond Partners, LLC
- Specialize in Transportation Data/Info/Knowledge Management
- B. SC., Civil Engineering, MIT 1978
- M. Eng. Civil Engineering-Transportation, University of California, Berkeley 1980



Today's Speakers



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ACRP Research Report 258

The Evolution of Knowledge Management at Airports

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ACRP Report 258 Oversight Panel

Ann B. Richart, AAE, Panel Chair

Shelly Lesikar deZevallos

Andy Entrekin

Jeanette Saunders

Chris White

Craig Williams

Christina Nutting, *FAA Liaison*

Qinya Pang, *Airports Council International–North America Liaison*

Theresa Schatz, *Senior Program Officer, ACRP*

Claire Randall, *Senior Program Officer, TRB*

Project Objectives

Develop a guidebook for facilitating knowledge management in airports:

- Practical approaches & solutions
- Easily implementable

The Why

A business case for encouraging knowledge management

The Who

All stakeholders (contributors, curators, and consumers)

The What

The different types of airport institutional and practical knowledge

The When

Timing of the different phases and processes of knowledge management

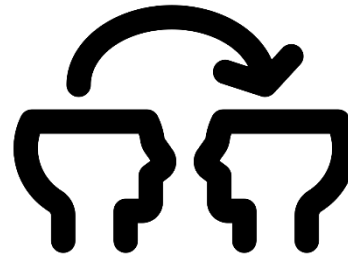
The How

Tools and resources to support airport implementation and sustainment

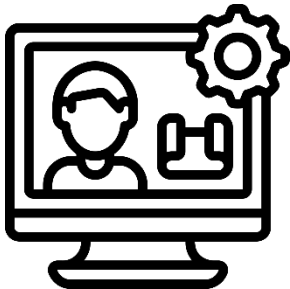
Target Audiences



Airport
Manager/Deputy
Manager



Human Resources,
Workforce
Development,
Organizational
Development Leads



Information
Management Leads



Mid- and Line Managers:

- Planning & Development
- Maintenance & Facilities
- Operations & Security
- Financial Management

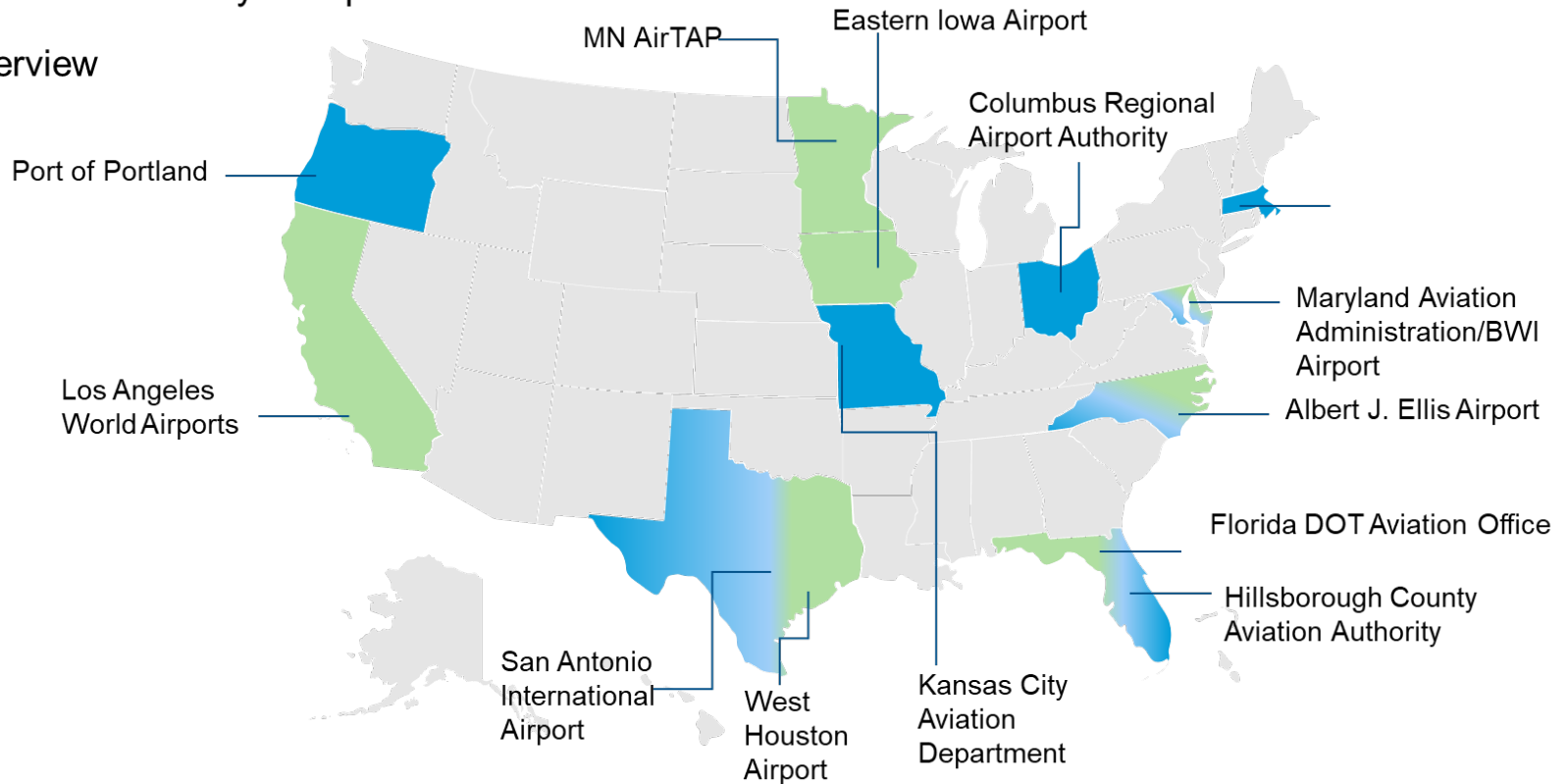
Stakeholder Engagement



Technical Advisory Group



Interview



Knowledge Management

A deliberate and systematic process to create, capture, share and leverage the essential knowledge needed for success.

Strategy: identify & proactively address risks, opportunities and gaps

Collaboration: foster person to person knowledge sharing

Learning: capture lessons from past activity and use to improve

Transfer: Identify and transfer critical knowledge from departing employees

Retention: maintain and share documentation of mission-critical knowledge

Why Airports Need Knowledge Management

Manage impacts of employee turnover

Disruption

Loss of “Know How”

Loss of Relationships

Prepare for and respond to change

New Technology

Regulatory Changes

Demand Patterns

Ensure continuity of operations

Chronic Stressors:
cyber threats,
labor shortages

Acute Shocks:
weather events,
incidents

Maximize effectiveness & efficient use of resources

Learn & improve based on experience

Standard processes

Adaptable and flexible workforce

Guide Overview

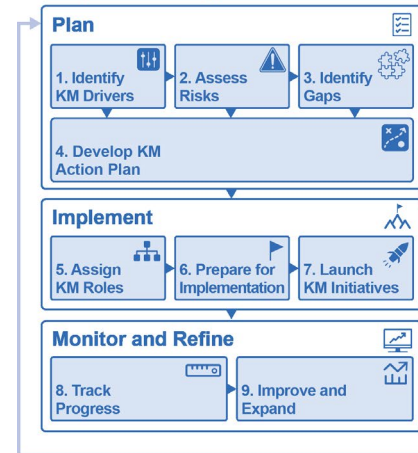
The Airport KM Guide is organized into five chapters:

- I. Introduction
- II. Knowledge Management for Airports
- III. Implementing KM
- IV. KM Techniques
- V. Resources

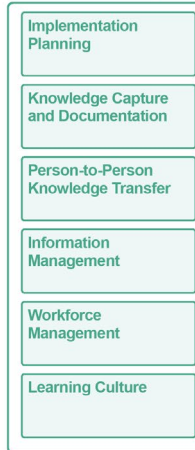
KM for Airports



Implementing KM



KM Techniques

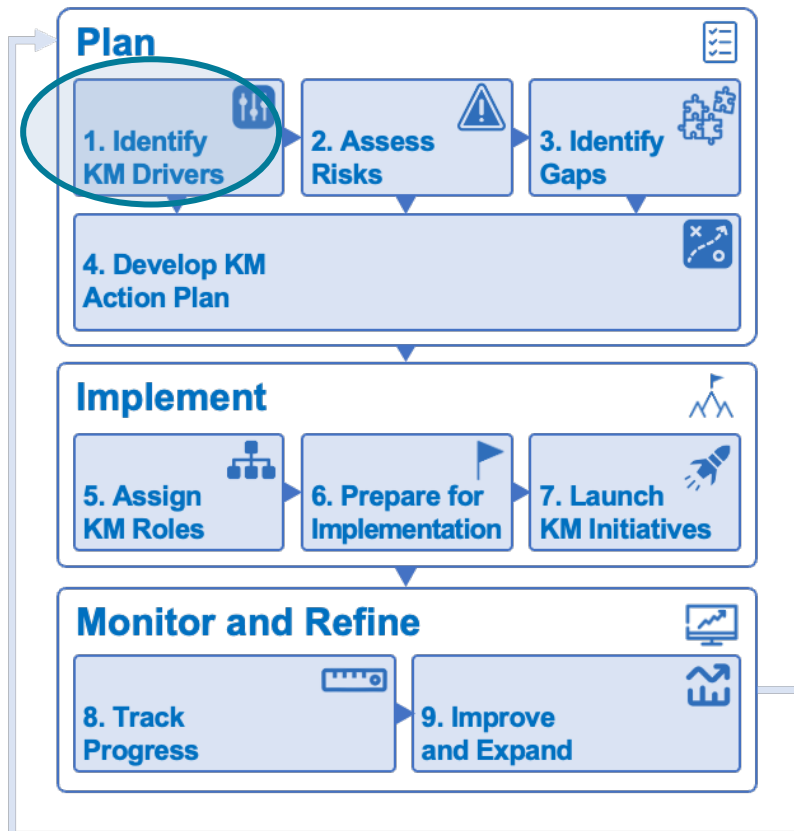


KM Resources

A. Example Airport Knowledge Audit Questionnaire	B. Sample Airport Knowledge Transfer Plan	C. Knowledge Transfer Plan Template – Employee
D. Job Breakdown Sheet Template	E. Employee Transition Plan Template	F. Sample Knowledge Interview
G. Sample After-Action Review	H. Decision Log Template	I. Contact List Template
J. Sample Community of Practice Charter	K. Sample Information Management Strategy	L. Sample Mentoring Program Roles and Responsibilities
M. Case Study: Improving Efficiency through Lean Six Sigma and KM		

9 Step Implementation Process

Implementing KM



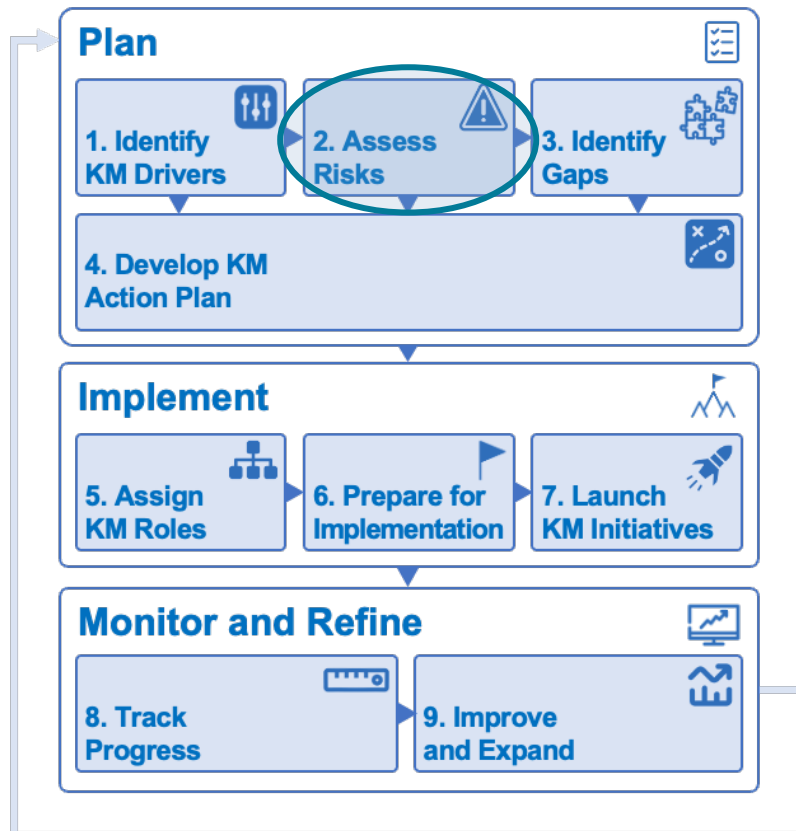
Step 1. Identify KM Drivers

➤ Identify airport strategic goals to be addressed by KM initiatives.

- 1. Improve agility and readiness for future changes.
- 2. Sustain airport effectiveness despite loss of key employees.
- 3. Sustain overall workforce effectiveness as turnover occurs.
- 4. Improve internal efficiencies.
- 5. Ensure consistency and compliance with regulatory requirements.

9 Step Implementation Process

Implementing KM



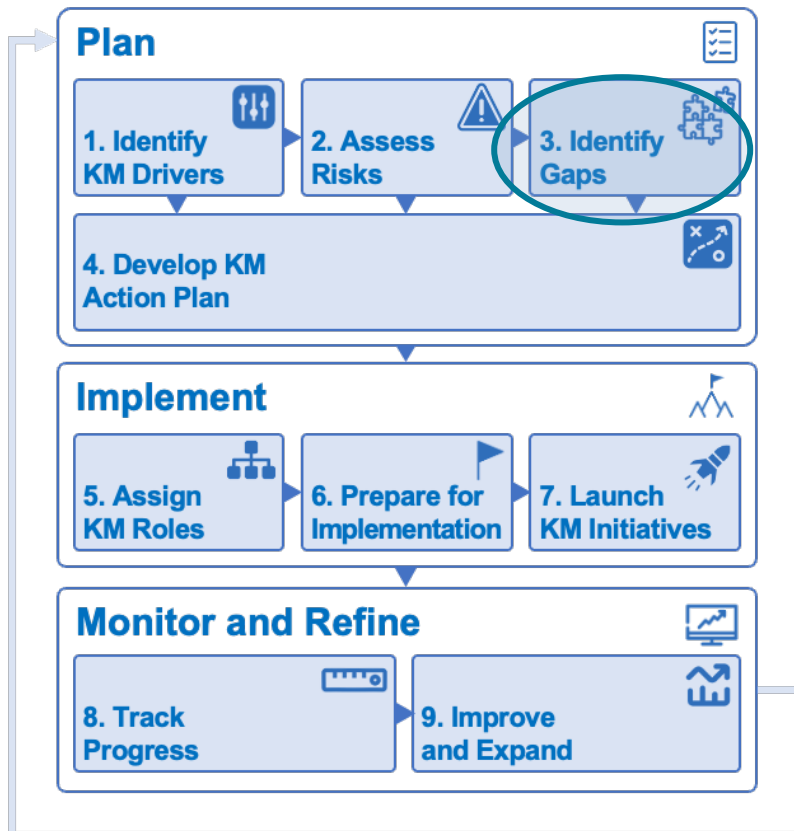
⚠️ Step 2. Assess Risks

➤ Identify specific risks to be mitigated through KM initiatives.

- Disruption of normal operations
- Project delays
- Inconsistent application of safety and security best practices
- Disruption of established relationships
- Negative audit findings due to lack of back up documentation

9 Step Implementation Process

Implementing KM



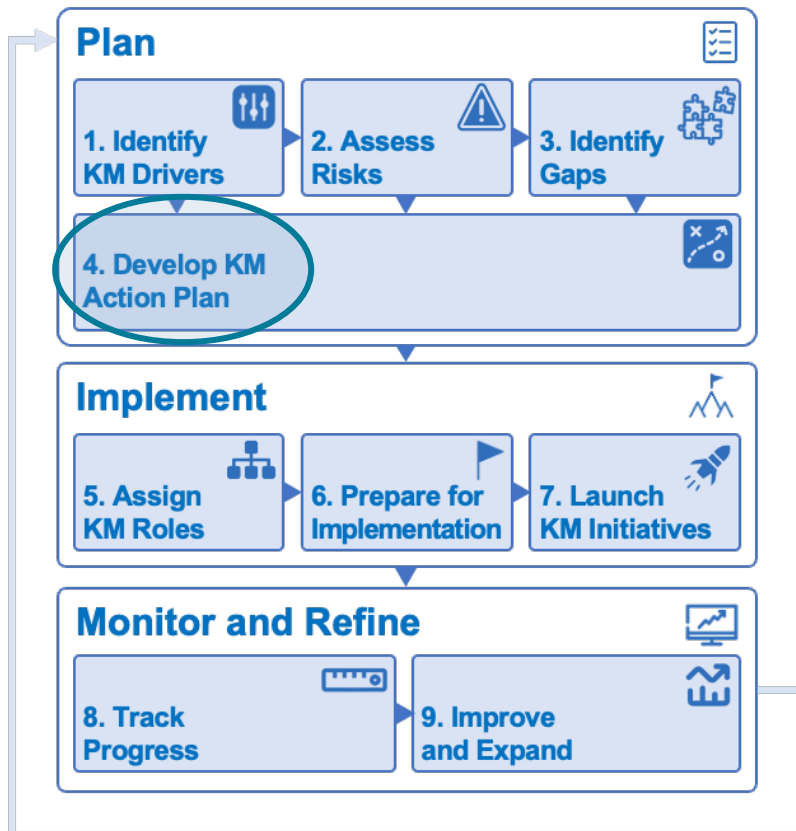
Step 3. Identify Gaps

➤ Identify what KM activities are currently being done:

- Knowledge Capture, Documentation and Re-Use
- Person-to-Person Knowledge Transfer and Learning
- Information Management
- Workforce Management
- Learning Culture

9 Step Implementation Process

Implementing KM



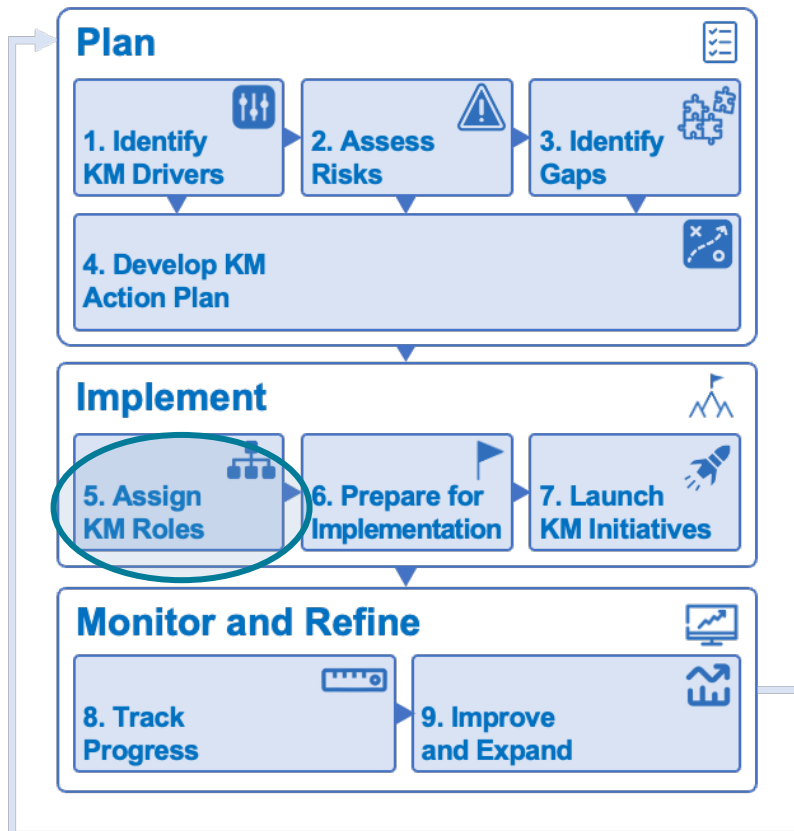
Step 4. Develop KM Action Plan

- Identify and prioritize KM strategies to implement at your airport based on goals, risks and gaps.

Category	Strategy	Technique
Implementation Planning		
Knowledge Capture, Documentation and Re-Use		
Person-to-Person Knowledge Transfer and Learning		
Information Management		
Workforce Management		
Learning Culture		

9 Step Implementation Process

Implementing KM

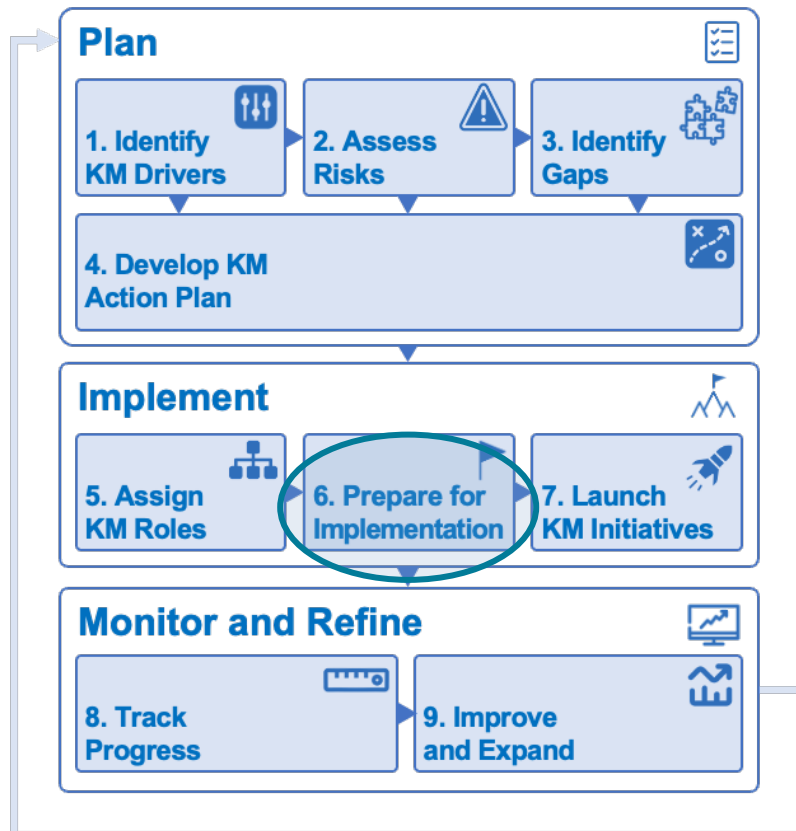


Step 5. Assign KM Roles

- Identify individuals who will sponsor, lead and support KM activities.
 - Highly dependent on airport size and KM scope
 - Essential to have a KM Lead
 - Lead can be in Airport Administration, HR, Strategic Planning, Innovation, Organizational Development
 - Helpful to have a KM committee for cross-functional coordination:

9 Step Implementation Process

Implementing KM

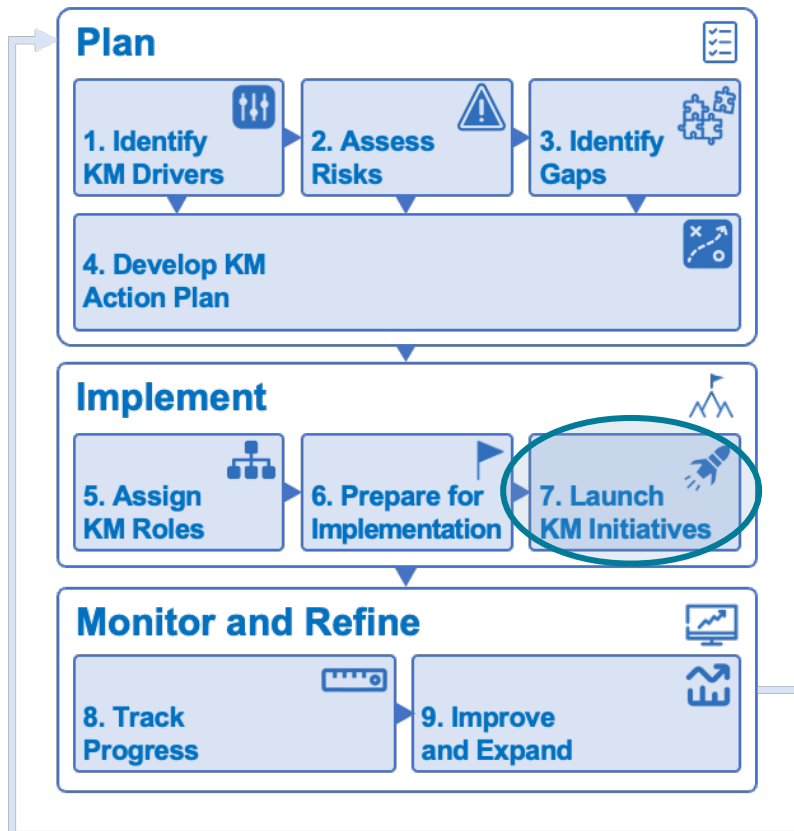


Step 6. Prepare for Implementation

- Create specific project plans for each KM initiative to be implemented.
 - Objectives
 - Scope of Application
 - Approach
 - Roles and responsibilities
 - Resourcing and budget
 - Work Plan
 - Monitoring Plan

9 Step Implementation Process

Implementing KM



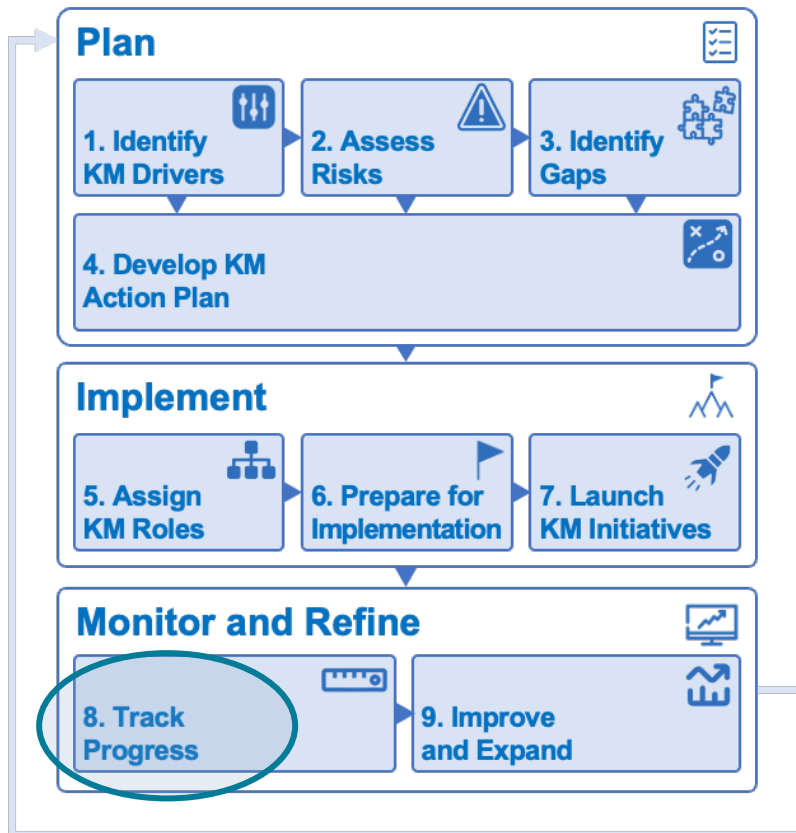
Step 7. Launch KM Initiatives

➤ Proceed with implementation of KM Activities.

- Have desired outcomes for each KM technique been defined?
- Has an implementation schedule with interim milestones been developed, vetted by and communicated to stakeholders?
- Have sufficient resources (budget, time, staff) been allocated?
- Have implementation responsibilities for each technique been clearly defined and communicated?
- Is a process to receive feedback from participants included in the plan?

9 Step Implementation Process

Implementing KM



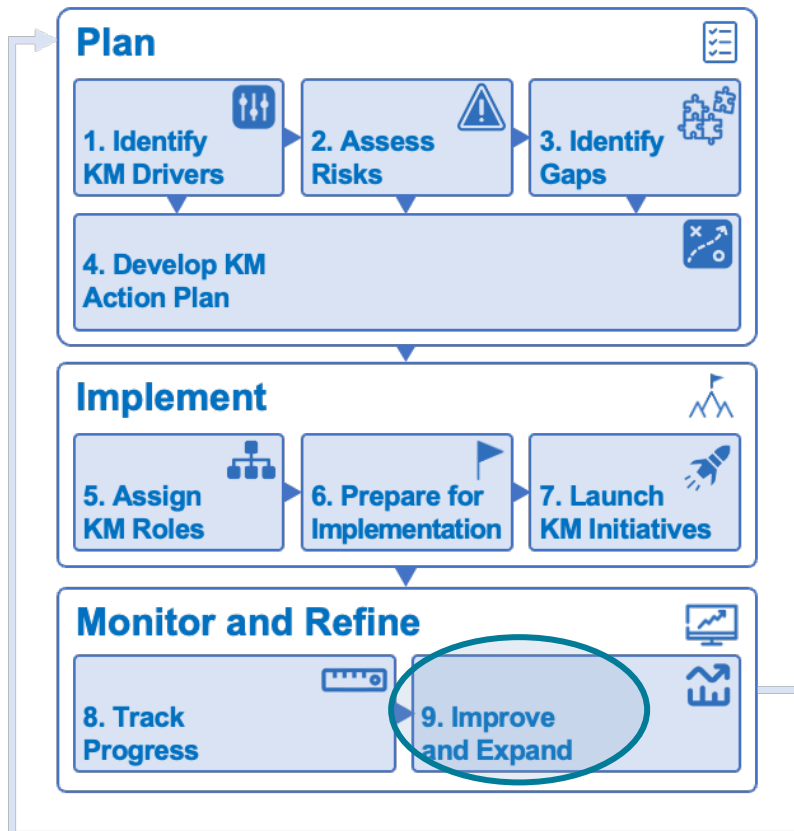
Step 8. Track Progress

➤ Track the status and progress of each KM initiative.

- Status: Planned/Active/Complete
- Planned Completion Date
- Last Milestone Completed
- Next Milestone Planned
- Issues Encountered to Date
- Metrics
 - ✓ Outputs
 - ✓ Exposure/Use
 - ✓ Impacts/Outcomes

9 Step Implementation Process

Implementing KM

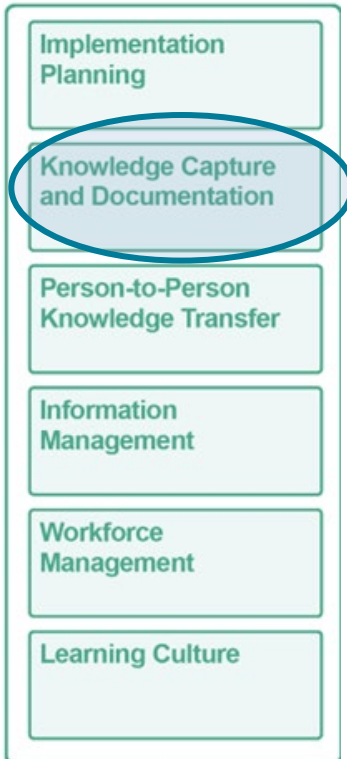


Step 9. Improve and Expand

- Adjust KM initiatives based on monitoring results.
 - Improving communication efforts to expand awareness and participation.
 - Modifying training to address areas of confusion or concern.
 - Requesting managers to communicate their support for an activity and prioritize its completion.
 - Discontinuing or scaling back an activity that is not proving as successful as anticipated.
 - Expanding a successful activity

Guidance for KM Techniques

KM Techniques



For Each Category of KM Technique...

What	Why	When	How (Resources)
Process Documentation (including SOPs)	<p>Ensure consistent application of a business process.</p> <p>Capture recent changes to a business process.</p> <p>Improve future application of a process by incorporating tips and tricks that have been learned.</p> <p>Facilitate onboarding and training of new employees.</p>	<p>Process is stable.</p> <p>Current documentation does not exist or is not up to date.</p> <p>Process impacts more than a few employees and is applied frequently (e.g., more than once a month).</p>	<p>Use SOPs to formalize your most critical processes – for example: St. Mary's County Regional Airport SOPs.</p> <p>Use Job Breakdown Sheets (see Resource D) to support training and knowledge transfer.</p> <p>Use Business Process Modeling Notation (BPMN) for in-depth documentation and analysis of complex business processes.</p>
Job Books and Desk Manuals	<p>Provide a reference guide to assist staff in performing their job.</p>	<p>Several employees with the same job responsibilities.</p>	<p>Virginia DOT Job Book Program</p>

KM Implementation Resources

KM Resources

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G. Sample After-Action Review	H. Decision Log Template	I. Contact List Template
J. Sample Community of Practice Charter	K. Sample Information Management Strategy	L. Sample Mentoring Program Roles and Responsibilities
	M. Case Study: Improving Efficiency through Lean Six Sigma and KM	

Example Knowledge Transfer (KT) Plan

- **Key Processes**
- **Staffing and Roles**
- **Critical Knowledge to be Transferred**
- **Risks**
- **Knowledge Transfer Activities**

Example Knowledge Transfer Plan – Financial Management

Key Processes

Procurement. Process purchase orders, requisitions (involves working with County Purchasing Department).

Grants Management. Process FAA and state grants and associated reimbursements.

Accounting/Bookkeeping. Pay bills, process invoices, make deposits, manage county credit cards, handle billing and receipt of revenues from airline landing fees, rental cars, hanger rentals, concessionaires, vending machines.

Budget Support. Maintain statistics (enplanements and deplanements, cargo, utilities consumption, revenues by source, etc.) and produce reports in support of annual budgeting process.

Parking Revenue Collection. Manage parking revenue operations.

Example Knowledge Transfer Plan – Financial Management

Critical Knowledge to be Transferred

Financial management policies and procedures. Steps to be followed to initiate and process multiple varied transactions, including handling of special circumstances.

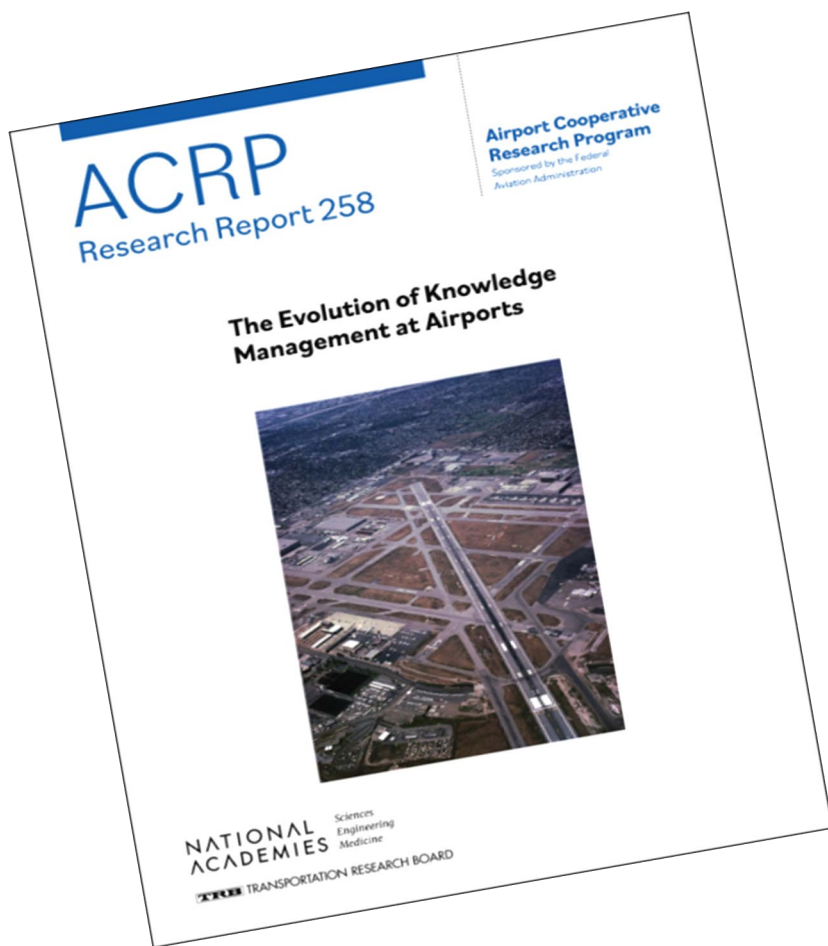
Examples:

- Reconciliation of rental car bills
- Balancing parking revenues receipts from cashiers
- Billing TSA for County police services
- Records disposition following audit completion
- Invoicing procedures, including recording results of follow up on collections
- County purchasing policies – e.g., requirements to get quotes from 3 vendors
- How to revert to paper timesheets when timekeeping system goes down

Example Knowledge Transfer Plan – Financial Management

Knowledge Transfer Activities		
Activity	Assigned To	Next Steps
Maintain and expand existing documentation of airport financial procedures	Administrative Assistant	Schedule annual review process
Create simple job book on financial management that compiles information sources in a single location. Include references and links to County policies and procedures, airport financial procedures, tracking spreadsheets, websites for funding requests, and contact lists.	Airport Financial Manager	Create first draft
Build job satisfaction and retention for parking cashiers by providing training on the importance of their role at the airport.	Airport Financial Manager	Create draft and pilot with current cashiers
Maintain individual website and system login information in an accessible location to facilitate access in the event of a sudden employee departure.	Airport Financial Manager	

FOR ADDITIONAL INFORMATION



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ACRP Report 258

Knowledge Management Challenges at Airports

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Aeronautical University
- Former Airport Manager
at small commercial
service airports across US
- Former State Aviation
Director at Oregon and
Nebraska
- Current Washington
State Aviation Director



Knowledge Management Challenges at Airports

Airport Maintenance

- Utility Locations
- Repeat Equipment Outages
- As-Built Plans



Knowledge Management Challenges at Airports

Airport Operations

- ATC Communications
- Inspection Discrepancies



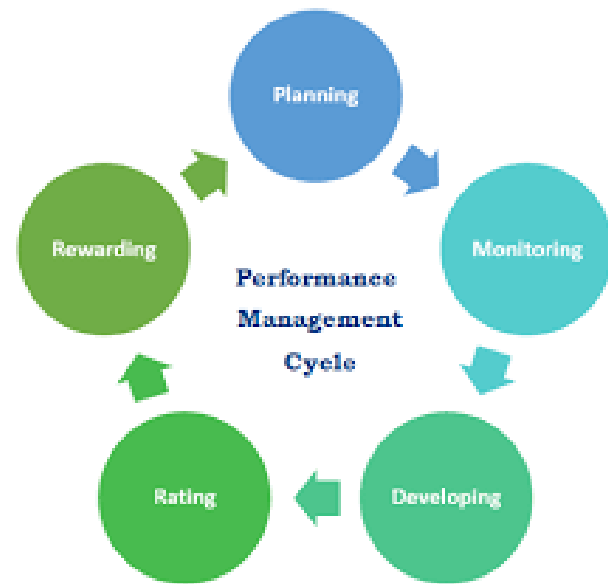
AIRPORT CERTIFICATION/ SAFETY INSPECTION CHECKLIST												
Airport Name: a CHICO MUNI			Associated City, State: a CHICO, California			Site No.: a 01990.*A						
Certificate Holder: a CITY OF CHICO			Current ARFF Index (A-26) a IIIU			Airport Classification Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input checked="" type="checkbox"/> Class IV* <input type="checkbox"/>						
Inspector: a William Critchfield			Inspection Dates:			S= Satisfactory N/A= Not Applicable			U= Unsatisfactory Remarks Required			
	S	U	N/A		S	U	N/A		S	U	N/A	
METHODS AND PROCEDURES FOR COMPLIANCE												
1. Compliance with Advisory Circulars (139.7)				5. Signs identifying taxiing routes (311b1)								
1. Justification Still Valid (139.111)				7. Holding position signs (311b11)								
EXEMPTIONS - NO. ON RECORD ()												
				8. ILS Critical Area Signs (311b10)								
				9. Signs internally illuminated (311b2)								
AIRPORT CERTIFICATION MANUAL												
1. Compliance with ACM (201a)				10. Runway Lighting Meets Specifications (311c1)								
2. Preparation (201a)				11. Taxiway Lighting/Reflectors (311c2)								
3. Content (203)				12. Airport Beacon (311c3)								
4. Maintenance (201b)				13. Airport Owned Approach Lighting (311c4)								
				14. Obstruction Marking/Lighting (311c5)								
RECORDS												
1. Furnished Upon Request (301a)				15. Markings/Signs/Lighting Properly Maintained (311d)								
2. Maintained for Specified Duration (301b)				16. Other Lighting Shielded/Adjusted (311e)								
SNOW AND ICE CONTROL												
PERSONNEL												
1. Sufficient Qualified Personnel (303a)				1. Prepare/Maint./Execute Plan (313a)								
2. Properly Equipped (303b)				2. Plan Addresses Prompt Removal or Control (313b1)								
3. Trained (303c)				3. Plan Addresses Positioning Snow for Clearance (313b2)								
4. Record of Training for 24 CCM (303d)				4. Plan Addresses Use of Approved Materials (313b3)								
5. Use of an Independent Organization or Designee (303f)				5. Plan Addresses Timely Commencement (313b4)								
				6. Plan Addresses Prompt Notification to ACRs (313b5)								
PAVED AREAS												
1. Lips (305a1)				ARFF OPERATIONS								
2. Holes (305a2)				1. ARFF Capability Meeting Index Provided During ACR OPHS (319a)								
3. Cracks/Surface Variations (305a3)				2. ARFF Requirements Met for Increase in Index (319b)								
4. Debris/Contaminants (305a4)				3. Reduction in ARFF Index Meets Conditions (319d)								
5. Chemical Solvent Removed (305a5)				4. Vehicle Communications in Required Vehicles (319e)								
6. Drainage/Ponding (305a6)				5. Vehicle Marking & Lighting (319f)								
				6. Vehicle Readiness (319g)								
SAFETY AREAS												
1. Dimensions Maintained (309a)				7. Response Drill (No. Vehicles _____) (319h)								
2. Ruts/Surface Variations (309b1)				8. Personnel Properly Equipped (319i1)								
3. Drainage (309b2)				9. Personnel Properly Trained (319i2)								
4. Support Aircraft/Equipment (309b3)				10. Live-Fire Drill Every 12 Consecutive Calendar Months for all personnel (319i3)								
5. Objects in Safety Area/Fragible Mounting (309b4)				11. Personnel Trained and Current in Basic Emergency Medical Care Provided for ACR OPHS (319i4)								
				12. Record of Training for 24 CCM (319i5)								
MARKING, SIGNS AND LIGHTING												
1. Runway Marking Meets Specs (311a1)				13. Sufficient Personnel to Meet Requirements (319i6)								
2. Taxiway Centerline (311a2)				14. Alerting Procedures/Equipment Established (319i7)								
3. Taxiway Edge Markings (311a3)				15. Hazardous Materials Guidance Available (319j)								
4. Holding position markings (311a4)				16. Emergency Access Roads Maintained (319k)								
5. ILS critical area markings (311a5)												
HAZARDOUS MATERIALS												
				1. Procedures for Hazardous Substances and Materials (321a)								

* For Class IV Airports, indicate N/A for all items that are not applicable

Knowledge Management Challenges at Airports

Airport Administration

- Air Service Development
- Performance Management



ACRP
REPORT 18

Passenger Air Service
Development Techniques

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Knowledge Management Challenges at Airports

Retirements after long careers



Reliance on word-of-mouth or paper



Knowledge Management Challenges at Airports

Adding old information to new technology



Disconnect between Maint/Ops and IT



Knowledge Management Challenges at Airports

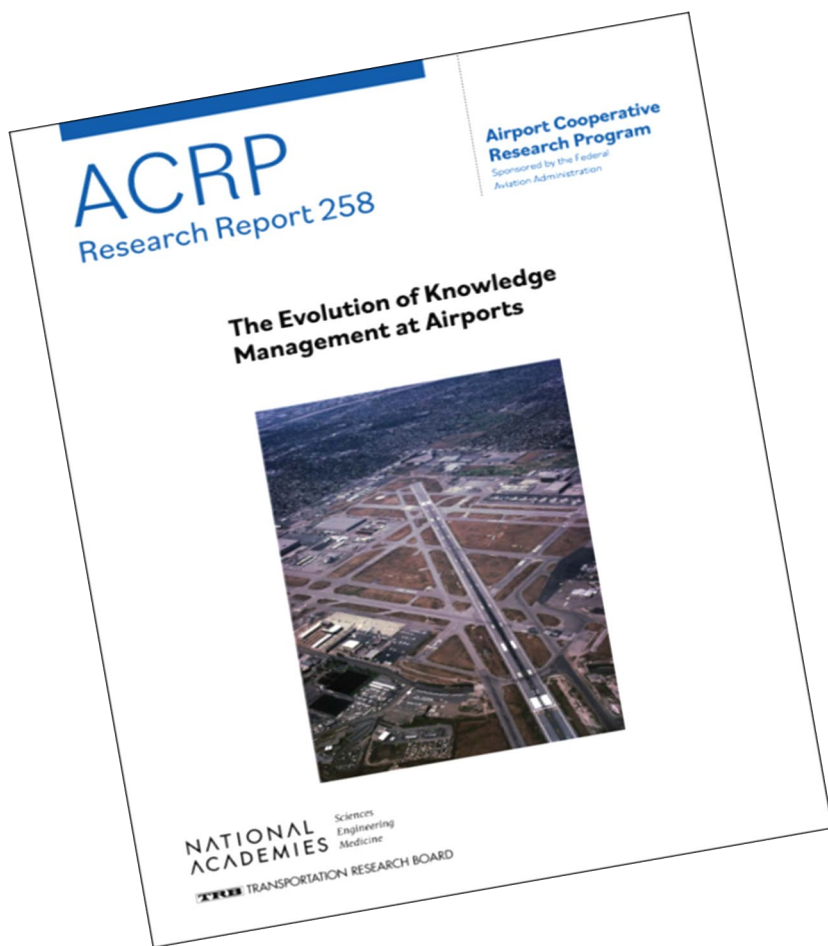
Budget Constraints

- New Hardware
- New Software
- Training
- Oversight
- Data Entry
- New Furniture
-

Knowledge Management Challenges at Airports

Change is Hard!

FOR ADDITIONAL INFORMATION



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ACRP Report 258

The Evolution of Knowledge Management at Airports

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The Saunders Group, LLC

Jeanette Saunders

Panel Member

- President/CEO, The Saunders Group. LLC
- Organizational Development Practitioner
- Vice President, Education & Advisory Services, AMAC
- Former Airport Chief of Staff and Chief of Administration & Performance Management, CLE
- MBA, concentration in Organization Development, BGSU

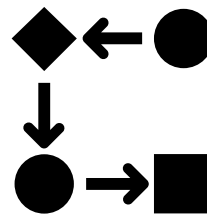


Key Components



People

- Knowledge champions
- Skilled workforce
- Collaborative culture



Processes

- Knowledge capture
- Knowledge sharing
- Knowledge application



Technology

- Communication tools
- Databases/repositories
- KM software

Best Practices

- Establish a Knowledge Management Framework
- Leadership Support & Commitment
- Fostering a Knowledge Sharing Culture
- Leverage Technologies
- Develop Robust KM Processes
- Continuous Learning and Development
- Monitoring and Evaluation

Establish a KM Framework



Align with organizational goals.




Identify key knowledge areas.



Develop a plan for capturing, storing, and disseminating knowledge.

Leadership Support and Commitment

- 
- Communicate the importance of knowledge sharing and management as a strategic priority.
 - Top management actively supports and participates in knowledge-sharing initiatives
 - Lead by example, demonstrating the value of knowledge sharing.

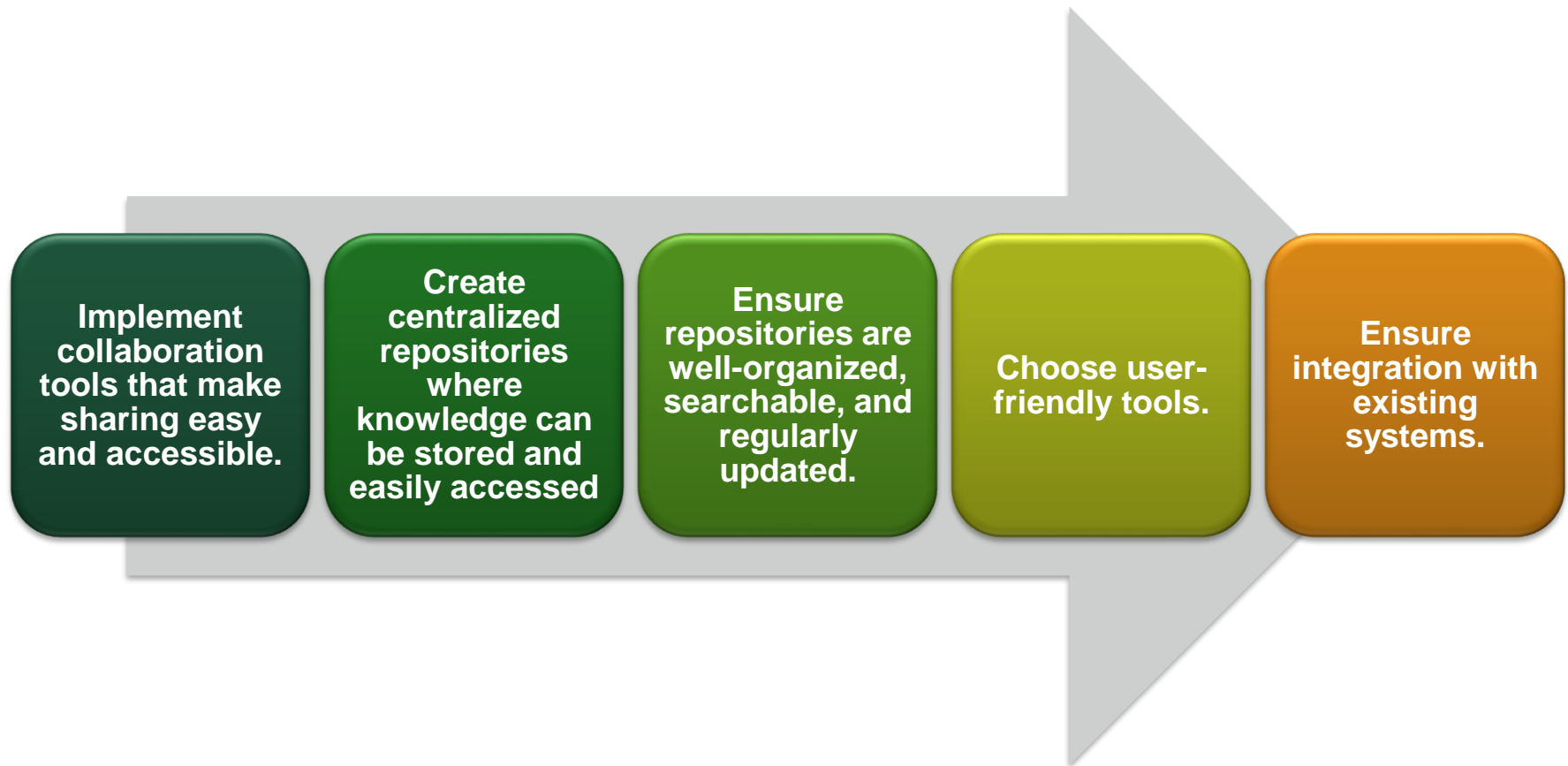
Fostering a Knowledge Sharing Culture

Collaboration and Communication

- **Inclusive Environment**
- **Promote Open Communication**
- **Encourage Cross-Departmental Collaboration**
- **Use Collaboration Tools**
- **Encourage New Ideas and Solutions**
- **Recognize Contributions and Celebrate Successes**
- **Use Regular Meeting, Forums, Informal Gatherings**



Leverage Technology



Develop Robust KM Processes



- Knowledge Audits
- Document Critical Knowledge
- Standardize Processes
- Regularly Update and Maintain Knowledge Bases
- Feedback Mechanisms
- Change Management

Continuous Training and Development

Encourage
continuous
learning and
development.

Provide regular
KM training.

Measuring and Monitoring KM Performance



**Key Performance Indicators
(KPIs)**



Regular Reviews



**Continuous
Improvement**

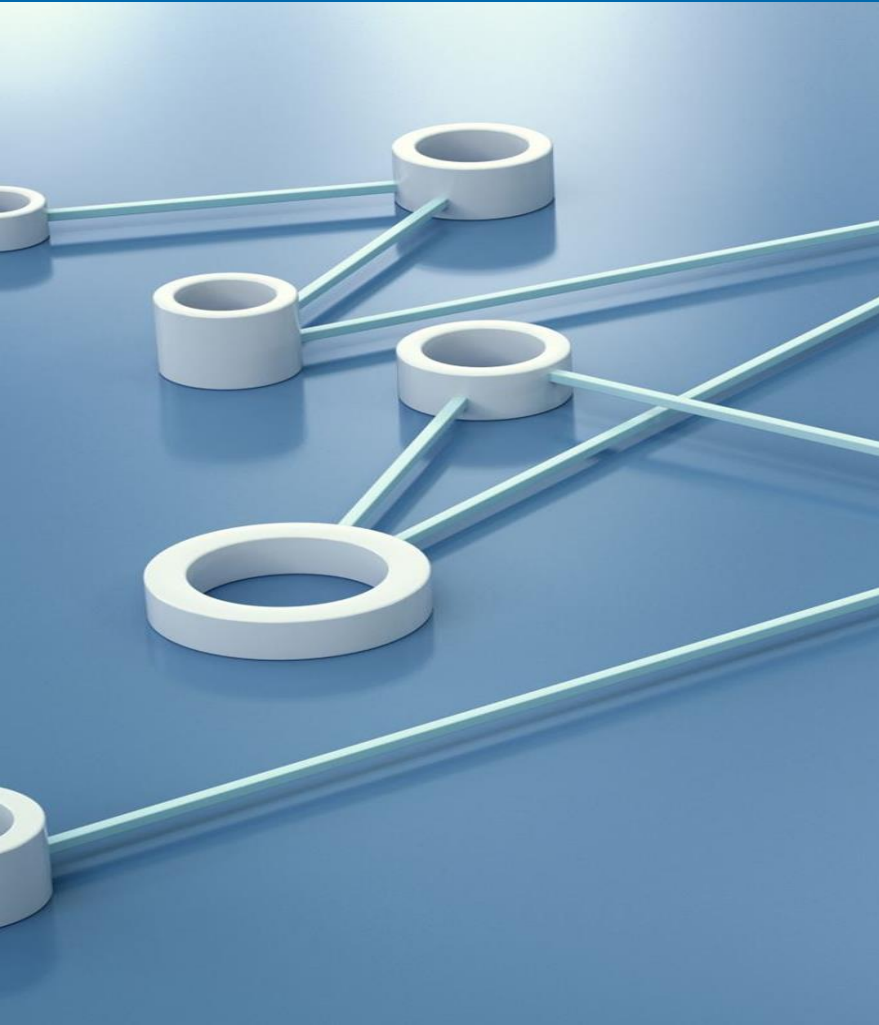
Organizational Integration



How to Eat a Knowledge Management Elephant?

One Bite at a Time...

Challenges and Practical Solutions



Challenge: Resistance to change

Solution: *Clear Communication; effective change management strategies*

Challenge: Data silos and fragmented information

Solution: *Integrating KM systems with existing workflows.*

Challenge: Technology Adoption

Solution: *User-friendly tools; training; user confidence*

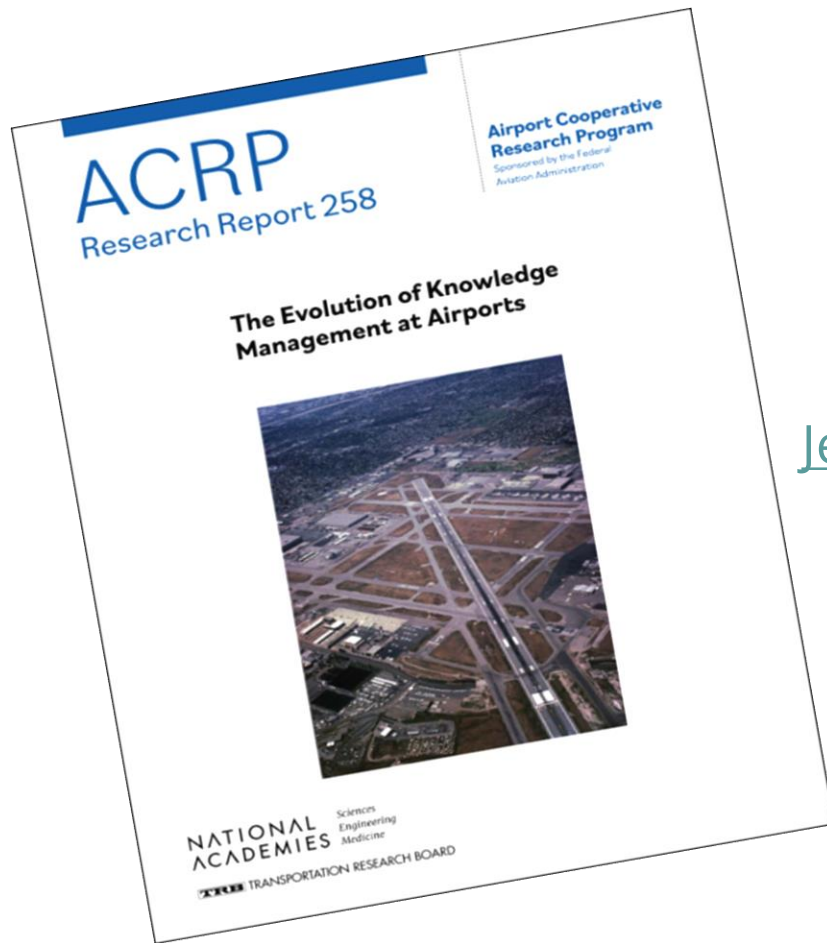
Challenge: Maintaining KM Momentum

Solution: *Continuous engagement; leadership support*

Challenge: Ensuring data security

Solution: *Implementing robust security measures to protect sensitive information*

For Additional Information:



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Today's Speakers



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Washington State Dept. of
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- May provide a path to Standing Committee membership

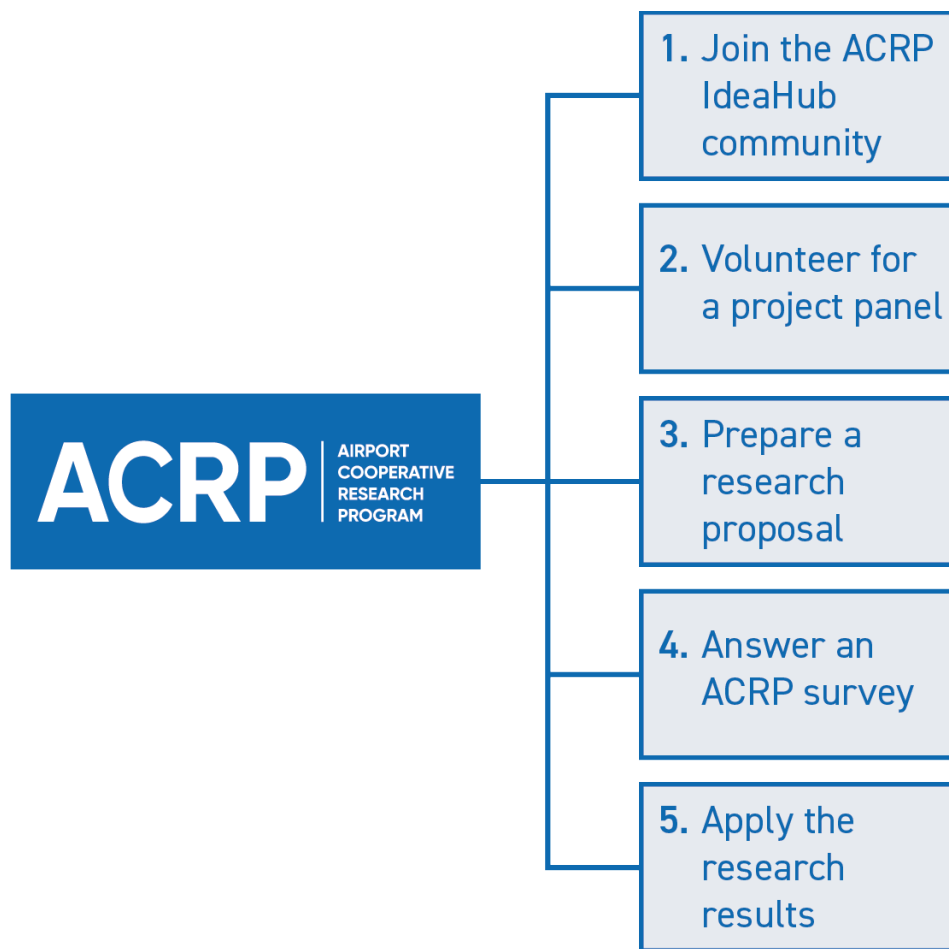
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