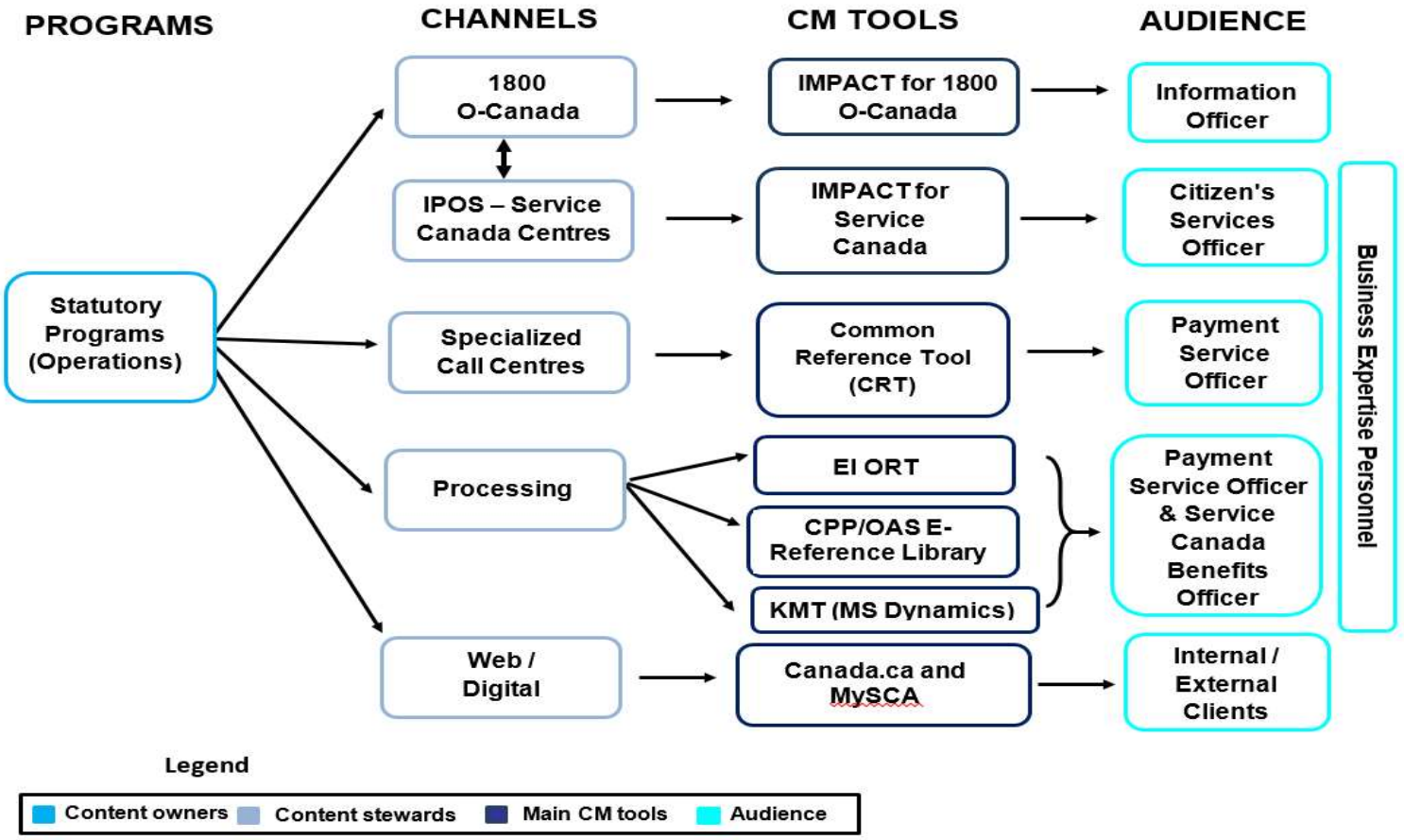
Knowledge Management

Benefits Delivery Modernization
Common Platform Delivery
November 19, 2024

Current State View of Content Management



Gap Analysis: Current to Future State

Current Barriers

People and Culture

- For new employees, finding accurate content quickly through national CM tools can be challenging.
- Difficulty to find information can lead agents to find information through informal means that are considered faster.

Content Activities

- In national tools, the accountability for and approval of content modifications can vary depending on the business/service area.
- Once a major change occurs (e.g., policy), updating and harmonizing content in a consistent way across all channels is challenging.

Business Processes

- No consistent content architecture across CM tools.
- In some business areas, content is scattered across multiple products, bringing uncertainty on the location of the most reliable, accurate, and recently updated pieces of information.

Technology

- Minimal data analysis capabilities.
- Search engines are sometimes inconsistent and not optimized.
- Minimal configuration and change management capabilities.

Service Transformation Goals

People and Culture

- Network-wide management of service offerings, processes, tools, training, workforce, and workload.
- Employees equipped with standard and common operational tools, training, and support.

Content Activities

- Clear stewardship and accountability around enterprise-wide capabilities.
- Service design to minimize steps to deliver service and resolve issues.

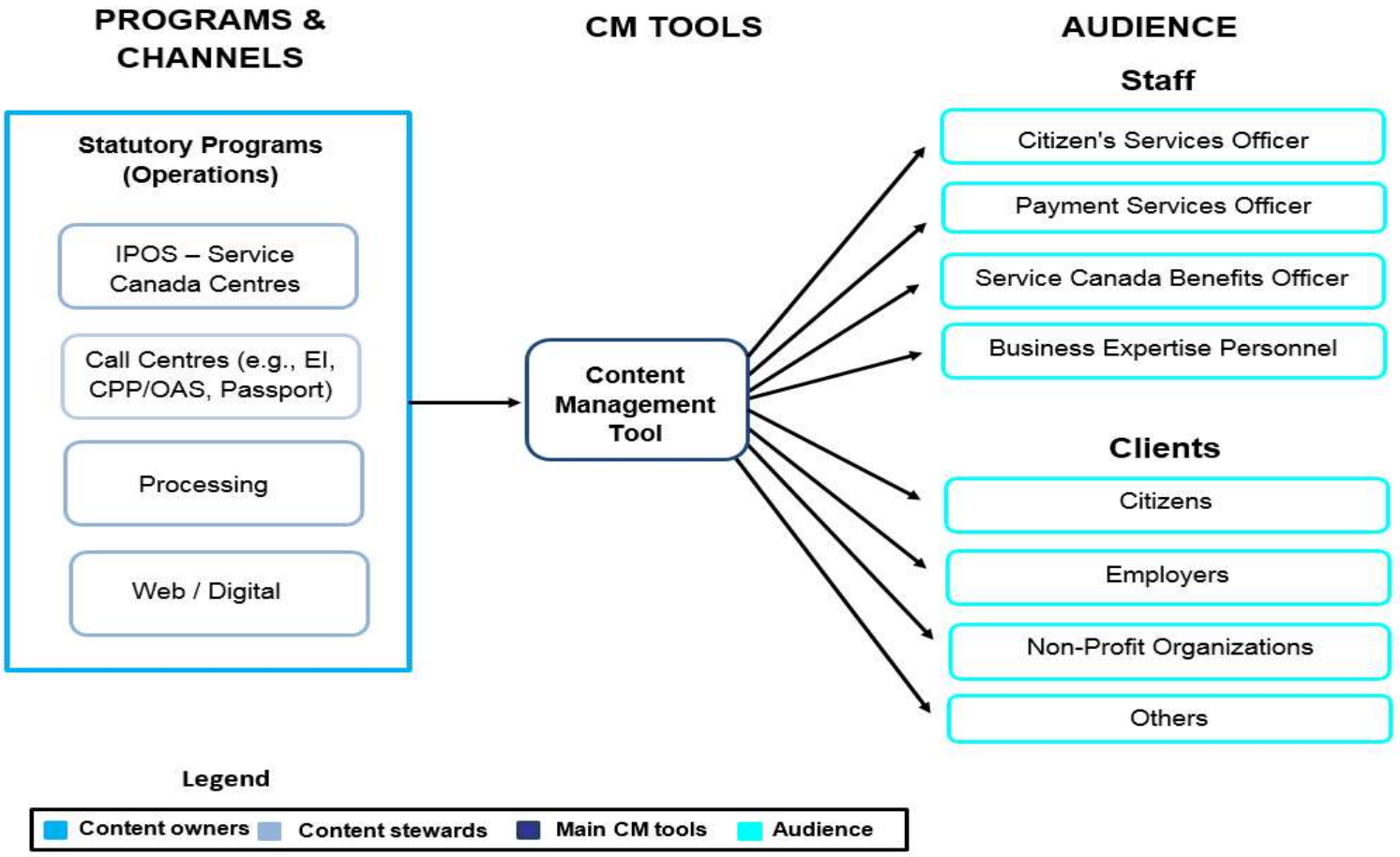
Business Processes

- Integrated content management architecture that could be reused across ESDC programs in all channels.
- Standardized and consistent functional guidance across programs and business lines.

Technology

- Integrated channel experience with enhanced digital presence and common tools/technology across channels.
- Leverage artificial intelligence (AI) and emerging technologies in service delivery.

Desired End State View of Integrated Content Management



Key Activities on the Way Forward for KM

Architecture	• Currently working with BDM Architecture to determine the best way forward – procure vs build and their respective pros and cons.
Business Requirements	• Currently working with the SDN team to identify the status of the user requirements, user stories and to identify any gaps. • Start documenting the user stories in ADO.
KM team structure	• Having obtained approval at RMAC, working on identifying the potential roles, responsibilities and candidates for the CPD KM team.
Procurement	• Reviewing the current CcaaS SI TA to ensure inclusion of the KM scope and implementation.
AI Gen 2	• Working alongside BDM architecture to determine the use cases for the Gen 2 POC using AI.

Activités principales sur la voie à suivre pour la GC

Architecture	• Nous travaillons actuellement avec le groupe d'architecture de la MVP pour déterminer la meilleure façon de procéder—achat ou construction—et leurs avantages et inconvénients respectifs.
Exigences professionnelles	• Nous travaillons actuellement avec l'équipe SDN pour identifier l'état des besoins des utilisateurs, des histoires d'utilisateurs et pour identifier les lacunes. • Nous commençons à documenter les histoires d'utilisateurs dans ADO.
Structure de l'équipe	• Après avoir obtenu l'approbation du CCGR, nous travaillons à l'identification des rôles, des responsabilités et des candidats potentiels pour l'équipe de la gestion des connaissances (GC).
Achat	• Examiner l'autorisation de tâches pour les centres de contact pour s'assurer de l'inclusion du champ d'application et de la mise en œuvre de la gestion des connaissances.
IA génération 2	• Nous travaillons avec le groupe d'architecture de la MVP pour déterminer les cas d'utilisation pour la preuve de concept de deuxième génération en utilisant l'intelligence artificielle.

Additional slides

- Additional slides

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Slide 8

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Albert, Sheela S [NC], 2024-11-18T14:53:41.274

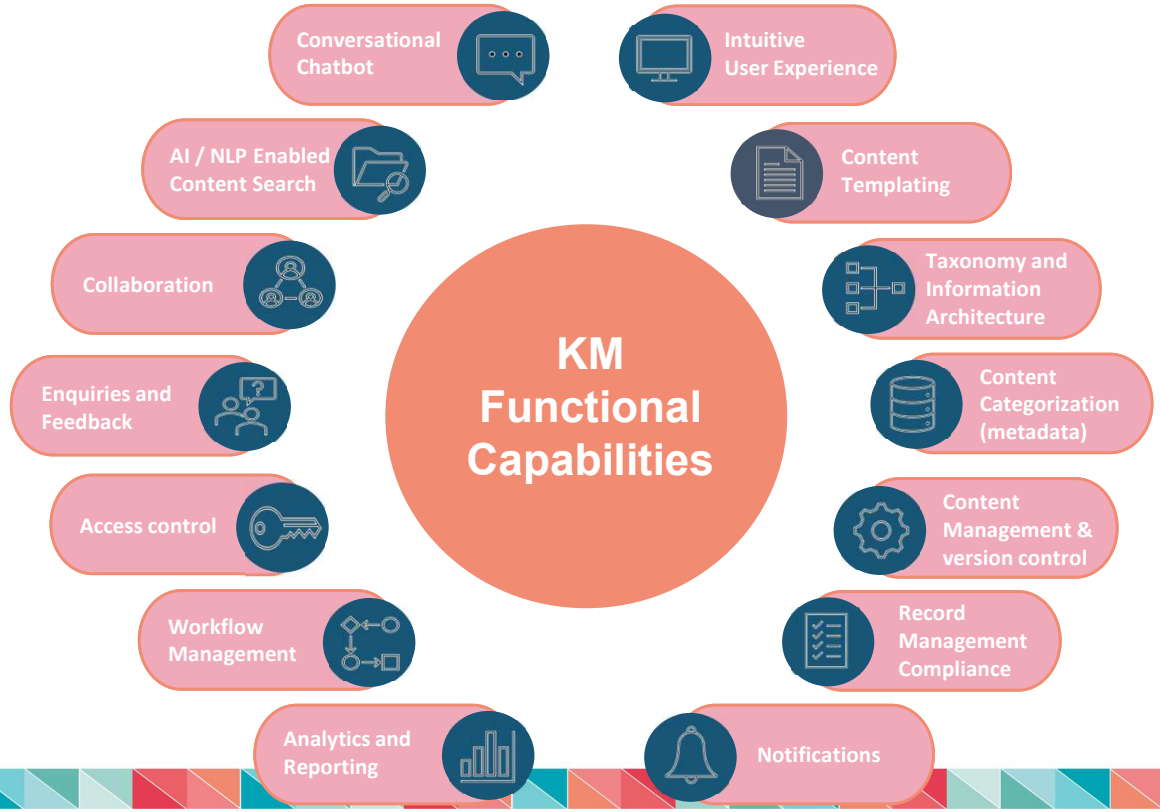
The requirements will enable the implementation of the Strategic KM tool, ensuring the guiding principles for the Strategic KM solution are met.

The end state Strategic KM solution enabled by the Functional and Non-Functional requirements will help ESDC enhance its Knowledge Management processes.

Strategic KM Guiding Principles	D34 Impact
Single Source of Truth	• The Functional and Non-Functional requirements will facilitate the migration to a unified end state Strategic KM tool to create a single source of truth for all ESDC Officers.
Consistent Citizens Experience	• The implementation of a single end state Strategic KM tool will allow Officers to provide common advice and information to citizens regardless of the channel, improving client experience.
Productivity Gains	• The end state Strategic KM tool will facilitate productivity gains by providing a streamlined content management and publishing process, allowing Officers to operate more efficiently.
Clear Roles & Responsibility	• The requirements identified will enable the Strategic KM tool to support clearer roles and responsibilities with supporting technology, leading to a greater sense of ownership and accountability for various KM stakeholders.
Smooth ESDC User Experience	• Through the enhanced functionality and features enabled in the end state Strategic KM tool, ESDC Officers will have a more seamless experience when using the tool to search for content.
Modern Technology	• The Strategic KM tool implemented will allow ESDC to leverage modern technology and follow industry best practices to modernize benefit delivery.
Streamline Process Flow	• The implementation of a single end state Strategic KM tool will help unify and streamline content management and publishing processes, resulting in process efficiency.

Essential Functional Capabilities for a KM solution

The following summarizes the total of 360 gathered Functional business requirements into essential capabilities to support the overall strategic KM solution.



Knowledge Management Proof of Concepts and Solution Options Analysis

Executive Summary

In our Knowledge Management Proof of Concepts, we have demonstrated AI capabilities and identified key areas for improvement:

- The AI capabilities demonstrated included:
  1. Semantic searches in the knowledge bases using natural language processing
  2. Content categorization and tagging
  3. Text summarization
  4. Question/answer (chatbot or virtual assistant)
  5. Knowledge duplicate detection and deduplication
  6. Content creation and publication workflow
  7. Feedback to authors on readability, categorization, related content and feedback from consumers on content and value
- Additionally, redundancy, duplication and different structures across knowledge bases have been identified, which may lead to inconsistent client interactions and outcomes across channels.
- Furthermore, missing categorization has been observed, which is critical when consumer tools often rely on categories for effective searching.

By unifying the knowledge through a consistent and structured approach, we will enhance efficiency for authors and ensure greater consistency, quality, and speed in delivering answers and context to consumers. Additionally, AI can assist across the entire lifecycle to further streamline this process.

We recommend:

- Establishing standards and developing AI-assistant for authoring content in both official languages
- Developing AI-assisted conversion (content unification and re-writing)
- Procuring automated content publishing
- Developing or procuring AI-assistant for consuming content.

AI capabilities demonstrated in PoCs

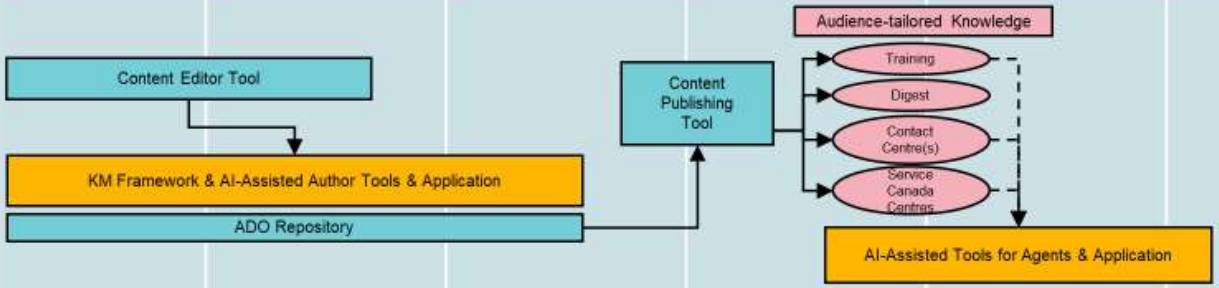
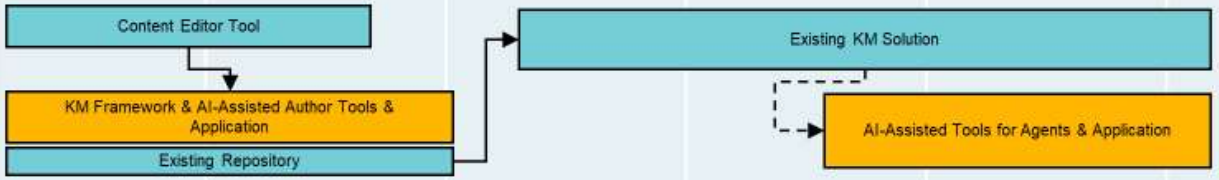
Capability	Description	Author	Agents
Semantic Search & Natural Language Processing	AI can enhance search capabilities within knowledge management systems by understanding the context and semantics of user queries. This leads to more accurate and relevant search results, even when the query uses natural language or is phrased differently from the stored documents.		
Content Categorization & Tagging	AI algorithms can automatically categorize and tag content, making it easier to organize and retrieve. This can be particularly useful for large repositories of unstructured data, where manual categorization is impractical.		
Content Creation & Publication Workflow	Knowledge may need collaboration to create and needs review/approval before publication.		
Text Summarization	AI-powered text summarization can provide concise summaries of lengthy documents, making it easier for users to quickly grasp the key points without reading the entire text.		
Question Answering Systems	AI can be used to develop advanced question-answering systems that can provide direct answers to user queries, rather than just returning a list of relevant documents.		
Duplicate Detection & Content Deduplication	AI algorithms can identify duplicate content within the knowledge base, ensuring that the system remains organized and free of redundant information.		
Automated Knowledge Extraction	AI can be used to automatically extract knowledge from unstructured data sources, such as text documents, emails, and social media posts, and integrate this information into the knowledge management system.		
Feedback to Authors	Any user should be able to provide feedback to authors and this feedback is used in curating the content.		
Content Storage	Information is stored in repositories, databases, or other systems. Proper storage prevents loss and facilitates sharing.		

Other KM required capabilities not demonstrated in PoCs

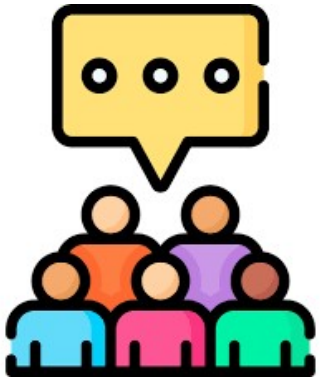
Capability	Description	Author	Agents
Monitor Content Use	Monitor use of content and use metrics to curate or prune content.		
Cyclic Content Reviews	Using last reviewed date to schedule cyclic review of content.		
Version Control	Knowledge will be curated over time, proper version control can manage the changes and maintain the history.		
Recommendation Systems	AI can be used to develop recommendation systems that suggest relevant content to users based on their search history, preferences, and behavior. This can improve user engagement and ensure that valuable knowledge is utilized effectively.		
Sentiment Analysis	For knowledge management systems that incorporate social media or other user-generated content, AI can be used to analyze sentiment and extract insights from customer feedback, reviews, and discussions.		
Trend Analysis & Forecasting	AI can be used to analyze patterns and trends in the data, helping organizations to identify emerging topics and areas of interest.		

AI
Web
KM

Options

Options	Creation	Organization	Storage	Dissemination	Application	Continuous Improvement
Option 1: Unify content using KM framework into one knowledge base, content publisher tools and augment with AI capabilities • Design KM Framework • Convert existing content to standard format • Procure Content Editor Tool • Procure Content Publishing Tool • Develop AI-Assisted Author Tools • Develop AI-Assisted Consumer Tools					
Option 2: Unify content into existing solution and augment with KM Framework and AI capabilities • Design KM Framework around one of existing solutions • Convert existing content to standard format • Develop AI-Assisted Author Tools • Develop AI-Assisted Consumer Tools						
Option 3: Procure KM solution, unify content using KM Framework and augment with AI authoring tools • Design KM Framework • Convert existing content to standard format • Procure KM Solution with AI Tools • Develop AI-Assisted Author Tools						

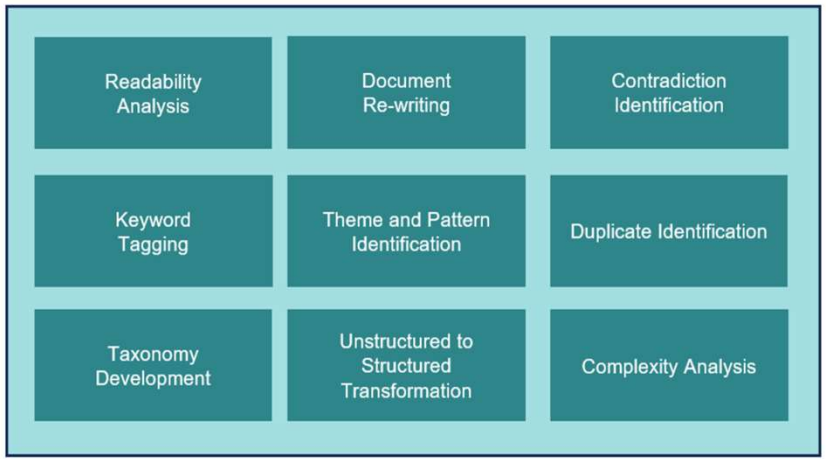
GROUP DISCUSSION



What KM use-cases that would bring value to BDM and Service Canada?

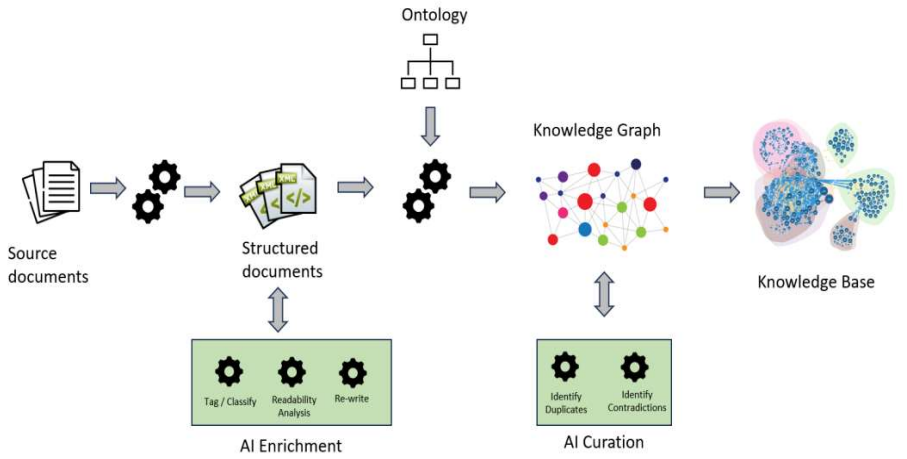
From Generation 1….

Core Capabilities Required for AI-Based Knowledge Base Transformation



Basic Approach to document identification, categorization, rewriting and publishing (diagram)

Process Flow for AI-Based Knowledge Base Transformation



… To Generation 2 (Options for Use-cases)

Scope: EI ORT, EI CRT, EI IMPACT
- Business processes included: self-employed; fishing
- Timelines: December 20, 2024

Automated Content Generation and Update: AI can assist in automating the generation and updating of content based on new procedures or changes in existing ones, or following policy changes. For instance, when procedures related to EI for self-employed and fishers are updated, the AI can automatically reflect these changes in the KM tool.

Procedure Optimization: AI can analyze the procedures used by the call centre and processing centre for self-employed and fishers EI cases to suggest optimization in the steps, elimination of redundancies and improve efficiency (also using policy

Training and Support: AI can help in creating dynamic training material that adapts to the latest changes in procedures. It can also provide real-time support to employees by providing step-by-step guidance for tasks related to EI procedures for self-employed and fishers

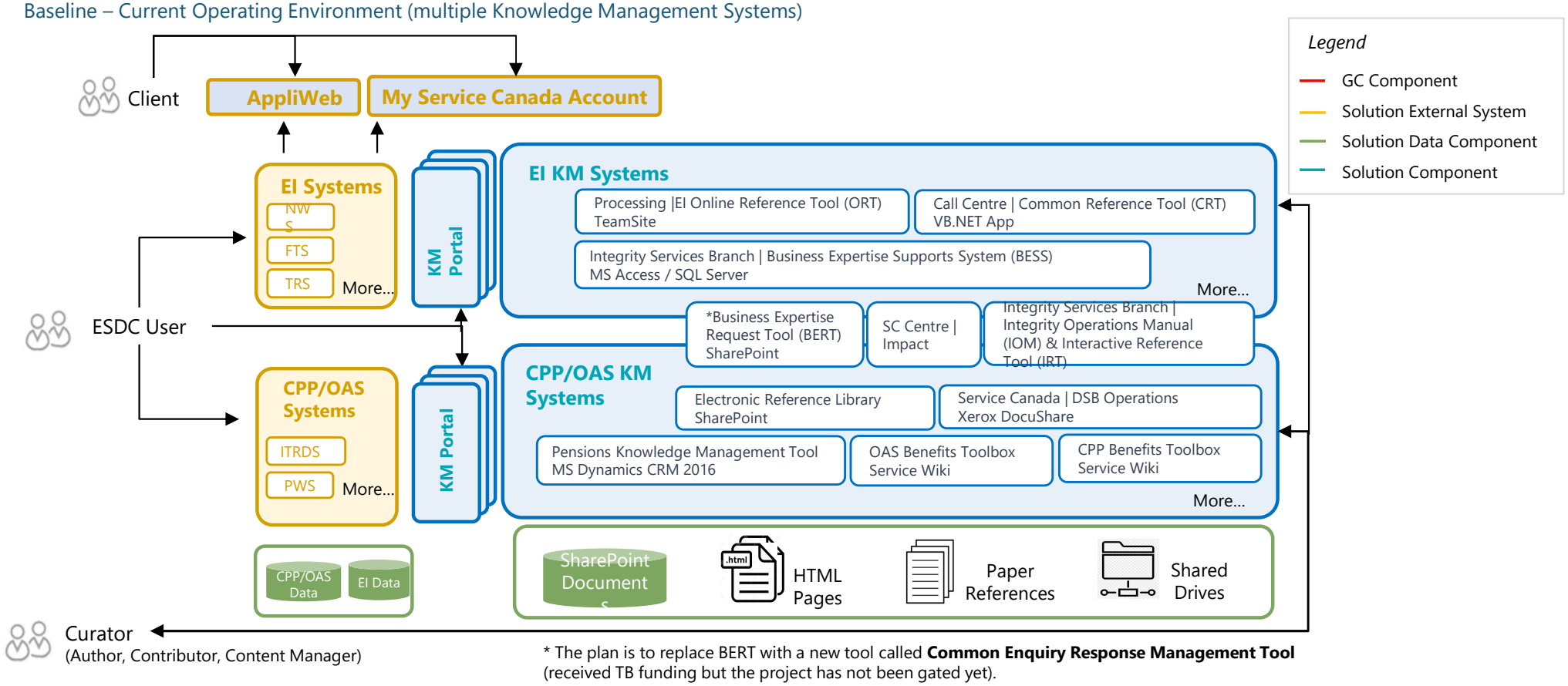
Pathways to resolution: the use of AI-driven systems to guide users through structured steps or decision paths toward resolving specific issues or inquiries. This approach leverages AI and machine learning to dynamically suggest solutions based on historical data, user inputs, and best practices, ultimately aiming to reduce the time and effort required to solve problems within an organization

Automated Content Translation: AI can automatically translate content into different languages, ensuring accessibility for all users .

Appendices

Current KM Architecture Diagram

Baseline – Current Operating Environment (multiple Knowledge Management Systems)



* The plan is to replace BERT with a new tool called **Common Enquiry Response Management Tool** (received TB funding but the project has not been gated yet).

Source: BDM Knowledge Management - EARB Presentation.pptx, slide 4

The table below summarizes the varying number of users, resources and documents across the different KM tools

Tool	SUMMARY			
	Channel	Total Number of End Users	Total Number of Support Resources	Total Number of Files & Folders
EI Online Reference Tool (ORT)	Processing Centre	End Users: 3,175	40	10,806
Common Reference Tool (CRT)	Specialized Call Centre	End Users: 6,227	31	3,264
IMPACT	In-Person	End Users: 3,258	41	3,663
Integrity Operations Manual (IOM) & Interactive Reference Tool (IRT)	Integrity	IOM End Users (EN): 1,731 IOM End Users (FR): 127 IRT End Users: 137	3	IOM: 419 IRT: 1 File (MS PowerPoint)
Knowledge Management Tool (KMT)	Processing Centre	End Users: 1,000+	26	5,000+

The slides that follow provide a summary of the current state KM tools.

The information captured in these slides was compiled from the following sources:

- PwC Current State Assessment Report (2020) & OAS Current State Report (2022)
- Inputs from the SDH KM Team
- KM Working Group responses to request for additional details

Where additional detail is limited, this is due to lack of information available from the above sources.

