American Journal of Advanced Multidisciplinary Research and Innovation (AJAMRI)

E-ISSN: XXXX-XXXX ● Website: www.ajamri.com ● Email: editor@ajamri.com

AI-Enabled Knowledge Management: Transforming Organizational Learning and Innovation Capabilities

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Abstract

Artificial Intelligence (AI) is reshaping organisational knowledge management by enabling organisations to capture, process, analyse, share, and apply knowledge more efficiently. Traditional knowledge management systems largely depend on manually maintained repositories, databases, documents, and employee participation, whereas AI-enabled systems can analyse structured and unstructured information, identify relationships, provide semantic search, generate summaries, and personalise knowledge access. This paper examines the role of AI-enabled knowledge management in transforming organisational learning and innovation capabilities. A conceptual research methodology is adopted based on an integrated review of literature concerning knowledge management, organisational learning, artificial intelligence, digital transformation, and innovation management. The study identifies intelligent knowledge discovery, automated knowledge capture, semantic search, knowledge graphs, generative AI, personalised recommendations, and AI-assisted decision support as major mechanisms through which AI can strengthen organisational knowledge processes. The paper proposes an AI-Enabled Knowledge Management Framework connecting knowledge acquisition, AI processing, knowledge sharing, organisational learning, knowledge recombination, and innovation. The analysis also highlights challenges related to data quality, privacy, cybersecurity, algorithmic bias, employee trust, knowledge validation, intellectual property, and overdependence on AI-generated information. The study argues that AI should augment rather than replace human expertise. Successful implementation requires technological infrastructure, employee participation, organisational culture, AI literacy, and responsible governance. The paper concludes that organisations capable of combining AI-based knowledge capabilities with human judgement and creativity can develop stronger learning mechanisms and more sustainable innovation capabilities.

Keywords: Artificial Intelligence, Knowledge Management, Organisational Learning, Innovation Capability, Generative AI, Knowledge Sharing, Knowledge Discovery, Digital Transformation, Knowledge Graphs, Organisational Intelligence.

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1. Introduction

Knowledge is increasingly recognised as a strategic resource for organisations operating in competitive and rapidly changing environments. Organisations generate knowledge through employee experience, customer interactions, research and development, operational activities, partnerships, market analysis, and organisational learning. However, the existence of large quantities of information does not automatically create organisational value. Organisations must be able to identify relevant knowledge, interpret it, share it, and apply it to decision-making and innovation.

Knowledge Management (KM) emerged as a strategic discipline concerned with the systematic creation, acquisition, organisation, sharing, retention, and application of organisational knowledge. Traditional KM systems have included document repositories, intranets, databases, expert directories, lessons-learned systems, and collaborative platforms. Although these systems remain important, the exponential growth of digital information has created new challenges. Employees increasingly face information overload, fragmented data sources, duplicated knowledge, and difficulty locating relevant expertise.

Artificial Intelligence provides new opportunities to address these challenges. Natural language processing can analyse large volumes of textual information, machine learning can identify patterns, knowledge graphs can map relationships among concepts and entities, recommendation systems can personalise knowledge delivery, and generative AI can synthesise information and interact with employees through natural language.

The emergence of AI therefore represents a shift from traditional knowledge repositories toward intelligent knowledge ecosystems.

The relationship can be conceptualised as:

Data → Information → Knowledge → Organisational Learning → Innovation

AI can potentially accelerate each stage of this process.

However, AI adoption also introduces important questions. How reliable is AI-generated organisational knowledge? Who is responsible for validating AI recommendations? How can confidential organisational knowledge be protected? Can AI capture tacit employee knowledge without reducing its contextual richness? How should organisations balance automation with human expertise?

This study examines these questions and develops a conceptual framework for AI-enabled knowledge management.

2. Concept of Knowledge Management

Knowledge management refers to the processes through which organisations create, capture, organise, share, retain, and apply knowledge.

A useful distinction can be made between data, information, and knowledge.

Data
Data represents raw facts, observations, measurements, or transactions.

Information
Information is data organised in a meaningful context.

Knowledge
Knowledge incorporates information together with experience, interpretation, skills, and judgement.

Organisational Intelligence
Organisational intelligence refers to the collective capacity of an organisation to use knowledge to understand its environment and make effective decisions.
AI can strengthen the transition from information to knowledge by identifying patterns and relationships within large datasets.

3. Evolution of Knowledge Management

Knowledge management has evolved considerably over the past several decades.

Stage 1: Document Management
The initial emphasis was on storing and retrieving electronic documents.

Stage 2: Knowledge Sharing
Organisations introduced intranets, collaborative platforms, expert databases, and communities of practice.

Stage 3: Data-Driven Knowledge Management
Business intelligence and analytics enabled organisations to extract insights from increasingly large datasets.

Stage 4: Intelligent Knowledge Management
AI technologies can now interpret natural language, identify semantic relationships, generate summaries, recommend information, and provide conversational access to organisational knowledge.
This evolution can be represented as:

Storage → Sharing → Analysis → Intelligence
The transition is significant because modern KM systems can increasingly participate in knowledge discovery rather than simply store information.

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4. Artificial Intelligence and Knowledge Management

AI refers broadly to computational systems capable of performing tasks that traditionally require human intelligence.

Within KM, particularly relevant AI technologies include:

- Machine learning.
- Natural language processing.
- Generative AI.
- Knowledge graphs.
- Semantic search.
- Recommendation systems.
- Predictive analytics.
- Computer vision.
- Conversational AI.

These technologies can support different stages of the knowledge lifecycle.

Table 1. AI Technologies and Knowledge Management Applications

AI Technology	KM Application
Machine Learning	Pattern recognition and prediction
Natural Language Processing	Document and text analysis
Generative AI	Summarisation and knowledge synthesis
Knowledge Graphs	Relationship mapping
Semantic Search	Context-aware retrieval
Recommendation Systems	Personalised knowledge delivery
Predictive Analytics	Decision support
Computer Vision	Extraction of visual information
Conversational AI	Natural-language knowledge access

5. AI-Enabled Knowledge Capture

Knowledge capture is one of the most important KM activities.

Organisations possess both explicit and tacit knowledge.

Explicit knowledge

Explicit knowledge can be documented relatively easily.

Examples include:

- Manuals.
- Policies.
- Reports.
- Standard operating procedures.
- Technical documents.

Tacit knowledge

Tacit knowledge is embedded in individual experience.

Examples include:

- Practical expertise.
- Problem-solving strategies.
- Intuition.
- Customer-handling experience.
- Technical judgement.

AI can help capture elements of organisational knowledge from:

- Meeting transcripts.
- Emails.
- Project documents.
- Customer interactions.
- Training sessions.
- Internal communications.

Natural language processing can extract important concepts and classify them into knowledge categories.

Nevertheless, AI-based extraction should not be considered equivalent to complete capture of tacit knowledge because human experience frequently depends on context that is difficult to formalise.

6. Intelligent Knowledge Discovery

Traditional enterprise search systems often depend heavily on keywords.

AI-powered semantic search can instead analyse:

- Context.
- Meaning.
- Intent.
- Relationships.
- Similarity.

For example, an employee might ask:

“What approaches did we use to resolve the supply disruption last year?”

A traditional system may return documents containing the exact words "supply disruption."

An AI-enabled system could identify:

- Previous supply-chain projects.
- Related incident reports.
- Meeting records.
- Corrective actions.
- Relevant employees.
- Supplier information.
- Lessons learned.

This can substantially reduce the time required to locate useful knowledge.

7. Generative AI in Knowledge Management

Generative AI has introduced new possibilities for knowledge access and synthesis.

It can potentially:

- Summarise lengthy reports.
- Compare multiple documents.
- Generate project briefs.
- Explain internal procedures.
- Draft training materials.
- Answer employee questions.
- Identify key themes.
- Convert complex information into accessible formats.

An organisation could deploy a conversational knowledge assistant connected to authorised internal information sources.

Employees could then interact with organisational knowledge using natural language rather than navigating multiple databases.

However, generative AI can produce inaccurate or unsupported information. Consequently, important organisational knowledge should remain subject to validation and appropriate source attribution.

8. Knowledge Graphs

Knowledge graphs represent entities and relationships between entities.

For example:

Employee → Expertise → Project → Customer → Product → Problem → Solution

This structure can help organisations understand connections between information sources.

Knowledge graphs can support:

- Expert identification.
- Research collaboration.
- Product intelligence.
- Customer analysis.
- Organisational memory.

- Innovation discovery.

They are particularly useful when knowledge exists across multiple databases and documents.

9. Personalised Knowledge Management

Employees have different roles and information requirements.

A finance manager, engineer, researcher, and marketing executive may need completely different knowledge.

AI can analyse:

- Employee roles.
- Current projects.
- Skills.
- Search behaviour.
- Knowledge requirements.

It can then recommend:

- Relevant documents.
- Experts.
- Training materials.
- Research findings.
- Internal procedures.

Personalisation can reduce information overload and increase knowledge relevance.

10. Organisational Learning

Organisational learning occurs when organisations acquire knowledge and use it to modify behaviour, processes, and strategies.

AI can accelerate organisational learning by analysing:

- Previous projects.
- Operational performance.
- Customer feedback.
- Failed initiatives.
- Successful practices.
- Market developments.

The organisational learning cycle can be expressed as:

Experience → Data → AI Analysis → Knowledge → Learning → Action → New Experience

This creates the possibility of a continuous learning organisation.

11. AI and Organisational Memory

Organisational memory refers to knowledge retained from previous organisational experiences.

A major challenge is that valuable knowledge may disappear when experienced employees:

- Retire.
- Resign.
- Change departments.
- Move to another organisation.

AI-enabled KM can help preserve elements of organisational memory by systematically organising historical:

- Project records.
- Lessons learned.
- Decisions.
- Procedures.
- Technical knowledge.

This can reduce dependence on individual employees as the sole holders of organisational knowledge.

12. Learning from Failure

Organisations often document successful projects more thoroughly than unsuccessful ones.
However, failed projects can provide significant learning opportunities.
AI can analyse historical project information to identify:

- Recurring problems.
- Root causes.
- Delayed decisions.
- Resource constraints.
- Successful corrective measures.

This can help organisations avoid repeating similar mistakes.

13. AI-Enabled Decision Support

Knowledge management creates value when knowledge can be applied.
AI can integrate information from multiple organisational sources and provide decision-support insights.
For example, a manager considering a new product might need:

- Historical sales.
- Customer feedback.
- Competitor information.
- Previous product-development experience.
- Market trends.
- Internal technical capabilities.

AI can synthesise these sources and provide a structured overview.
However, strategic decisions should remain subject to human judgement and accountability.

14. Knowledge Sharing Across Organisational Boundaries

Knowledge frequently becomes fragmented across departments.

For example:

Marketing may understand customer preferences.

Engineering may understand technical limitations.

Finance may understand cost structures.

Operations may understand implementation constraints.

If these knowledge domains remain isolated, innovation opportunities can be missed.

AI-enabled KM can create a shared knowledge layer connecting information across organisational boundaries.

15. Reducing Knowledge Silos

A knowledge silo exists when knowledge remains concentrated within a department, team, or individual.

AI can help reduce knowledge silos through:

- Unified search.
- Semantic indexing.
- Knowledge graphs.
- Automated recommendations.
- Cross-departmental knowledge discovery.

The objective is not necessarily to make all information accessible to everyone.

Instead, organisations should provide appropriate access to relevant knowledge based on roles, permissions, and security requirements.

16. AI and Innovation Capability

Innovation requires organisations to identify opportunities, combine knowledge, generate ideas, experiment, and implement new solutions.

AI-enabled KM can support these processes.

The relationship can be conceptualised as:

Knowledge Availability → Knowledge Combination → Insight → Idea → Experimentation → Innovation

AI can contribute by identifying connections among:

- Technologies.
- Customer needs.
- Scientific research.
- Market trends.
- Organisational capabilities.

17. AI-Supported Idea Generation

Generative AI can assist innovation teams by producing alternative ideas.

For example, an innovation team may ask an AI system to:

- Identify alternative product concepts.
- Explore new market segments.
- Suggest alternative business models.
- Identify potential applications of existing technologies.
- Compare competing approaches.

AI-generated ideas should be treated as inputs to human innovation rather than final solutions.

Human experts remain responsible for evaluating:

- Feasibility.
- Cost.
- Ethics.
- Market suitability.
- Technical viability.

18. Knowledge Recombination

Many innovations emerge from combining existing knowledge in new ways.

AI can support knowledge recombination by identifying relationships among apparently unrelated information.

For example:

Technology A + Customer Problem B + Organisational Capability C

may reveal a potential innovation opportunity.

Knowledge graphs and semantic AI systems are particularly valuable for this purpose.

19. Customer Knowledge and Innovation

Customers are an important source of organisational knowledge.

Customer knowledge can originate from:

- Reviews.
- Complaints.
- Support tickets.
- Surveys.
- Social media.
- Purchase behaviour.

AI can analyse these sources to identify:

- Unmet needs.
- Product weaknesses.

- Emerging preferences.
- Service problems.

The findings can then inform product and service innovation.

20. Competitive Intelligence

AI can support organisations in monitoring external knowledge.

Potential applications include:

- Competitor analysis.
- Industry trend monitoring.
- Patent analysis.
- Technology scanning.
- Market research.

This enables organisations to integrate external information with internal knowledge.

The result is a more comprehensive strategic knowledge environment.

21. Proposed AI-Enabled Knowledge Management Framework

The framework proposed in this study consists of seven interconnected layers.

Layer 1: Knowledge Sources

Internal and external data and information.

Layer 2: Knowledge Capture

Automated and human-assisted extraction.

Layer 3: AI Processing

NLP, machine learning, generative AI, and knowledge graphs.

Layer 4: Knowledge Repository

Structured and searchable knowledge assets.

Layer 5: Intelligent Access

Semantic search, recommendation systems, and conversational interfaces.

Layer 6: Organisational Learning

Application of knowledge to organisational processes.

Layer 7: Innovation

Knowledge recombination, experimentation, and new-value creation.

The resulting cycle is:

Knowledge Creation
↓
Knowledge Capture
↓
AI Processing
↓
Knowledge Discovery
↓
Knowledge Sharing
↓
Organisational Learning
↓
Innovation
↓
New Knowledge

22. Research Objectives

This study aims to:

1. Examine the role of AI in knowledge management.
2. Analyse how AI-enabled KM supports organisational learning.
3. Investigate the relationship between AI-enabled KM and innovation capability.
4. Identify major AI technologies used in KM.
5. Examine organisational and technological barriers to AI-enabled KM.
6. Develop a conceptual framework for AI-enabled KM.

23. Research Questions

RQ1: How can AI improve organisational knowledge management?
RQ2: How does AI-enabled KM influence organisational learning?
RQ3: How can AI-enabled KM strengthen innovation capability?
RQ4: What challenges affect successful AI-enabled KM implementation?
RQ5: What governance mechanisms are necessary for responsible AI-enabled KM?

24. Research Methodology

The study adopts a qualitative conceptual research methodology.
The analysis is based on secondary literature concerning:

- Knowledge management.
- Artificial intelligence.
- Organisational learning.
- Innovation management.

- Digital transformation.
- Generative AI.
- Knowledge graphs.
- Intelligent information systems.

The literature is synthesised to develop relationships between AI capabilities, knowledge-management processes, organisational learning, and innovation.

The study is conceptual rather than an empirical statistical investigation; therefore, the performance indices presented later are illustrative rather than observed measurements.

25. AI-Enabled Knowledge Management Process

Table 2. Traditional and AI-Enabled Knowledge Management

KM Activity	Traditional Approach	AI-Enabled Approach
Knowledge capture	Manual documentation	Automated extraction
Knowledge storage	Static repositories	Intelligent knowledge bases
Information retrieval	Keyword search	Semantic search
Knowledge sharing	Employee-driven	AI recommendations
Knowledge analysis	Manual review	AI-supported analytics
Learning	Periodic review	Continuous learning
Decision support	Reports	AI-assisted insights
Innovation	Conventional brainstorming	AI-supported ideation

26. Impact on Organisational Learning

AI-enabled KM can strengthen organisational learning through:

- Faster knowledge retrieval.
- Improved lessons-learned systems.
- Better organisational memory.
- Cross-functional learning.
- Personalised employee development.
- Continuous feedback.

However, technology alone does not create organisational learning.

A learning culture must encourage employees to:

- Share knowledge.
- Ask questions.
- Experiment.
- Discuss failures.

- Learn from experience.

27. Impact on Innovation Capability

AI-enabled KM can strengthen innovation through four major mechanisms.

1. Knowledge Accessibility

Employees can locate relevant knowledge more quickly.

2. Knowledge Diversity

Employees can access knowledge beyond their immediate departments.

3. Knowledge Recombination

AI can identify relationships among different knowledge domains.

4. Experimentation

AI can accelerate idea development and evaluation.

28. Illustrative Performance Indicators

Table 3. Conceptual AI-Enabled KM Performance Indicators

Indicator	Baseline Index	Illustrative AI-Enabled Index
Knowledge retrieval speed	100	140
Cross-department knowledge sharing	100	130
Reuse of existing knowledge	100	135
Access to internal expertise	100	145
Organisational learning speed	100	130
Idea-generation capability	100	125
Innovation project efficiency	100	120
Lessons-learned utilisation	100	140

Note: These values are hypothetical index values designed to illustrate potential relationships. They are not empirical findings.

29. Benefits of AI-Enabled Knowledge Management

Operational Benefits

- Faster information retrieval.

- Reduced duplication.
- Automated knowledge classification.
- Improved workflow efficiency.

Strategic Benefits

- Better decision support.
- Stronger organisational intelligence.
- Improved innovation capability.
- Faster adaptation to market changes.

Employee Benefits

- Personalised learning.
- Easier access to expertise.
- Reduced information overload.
- Improved collaboration.

30. Challenges

30.1 Data Quality

AI systems depend heavily on the quality of organisational information.

Incomplete, outdated, duplicated, or contradictory data can reduce the reliability of AI-generated knowledge.

30.2 Knowledge Validation

AI-generated summaries and recommendations may contain inaccuracies.

Critical information should therefore be traceable to reliable sources and reviewed where appropriate.

30.3 Employee Trust

Employees may resist AI-enabled KM if they believe the technology is primarily designed for surveillance or workforce reduction.

Organisations should communicate clearly about:

- Purpose.
- Data usage.
- Access.
- Governance.
- Employee rights.

30.4 Privacy

KM systems can contain sensitive information concerning:

- Employees.
- Customers.
- Suppliers.
- Business strategies.
- Intellectual property.

Strong access controls and privacy mechanisms are therefore essential.

30.5 Cybersecurity

A centralised organisational knowledge system can become an attractive target for cyberattacks.

Organisations should implement:

- Authentication.
- Authorisation.
- Encryption.
- Monitoring.
- Access logging.

30.6 Intellectual Property

AI systems trained or connected to proprietary organisational information can create intellectual-property risks.

Clear policies should define:

- What information can enter AI systems.
- Who can access generated outputs.
- How proprietary information is protected.

31. Human–AI Collaboration

AI should generally function as an augmentation mechanism rather than a replacement for organisational expertise.

AI contributes:

Speed + Scale + Search + Pattern Recognition + Synthesis

Humans contribute:

Experience + Context + Creativity + Judgement + Accountability

Therefore:

Human Expertise + AI Capability = Augmented Organisational Intelligence

This approach is particularly important for strategic decisions and knowledge-intensive tasks.

32. Organisational Culture

Technology is only one component of successful knowledge management.

An organisation should develop a culture that encourages:

- Knowledge sharing.
- Collaboration.
- Experimentation.
- Continuous learning.
- Constructive discussion of failures.
- Cross-functional communication.

If employees intentionally withhold knowledge, even a sophisticated AI platform will have limited value.

33. AI Governance for Knowledge Management

AI-enabled KM should operate under a formal governance framework covering:

1. Data ownership.
2. Data quality.
3. Access control.
4. Privacy.
5. Cybersecurity.
6. AI transparency.
7. Knowledge validation.
8. Intellectual property.
9. Human oversight.
10. Accountability.

Governance should also define who is responsible when AI-generated information is incorrect.

34. Implementation Strategy

Phase 1: Knowledge Audit

Identify:

- Existing knowledge assets.
- Knowledge gaps.
- Duplicate repositories.
- Critical expertise.

Phase 2: Data Integration

Connect authorised organisational information sources.

Phase 3: AI Deployment

Introduce appropriate technologies such as:

- Semantic search.
- NLP.
- Recommendation systems.
- Knowledge graphs.
- Generative AI.

Phase 4: Employee Integration

Provide employees with training and AI literacy.

Phase 5: Governance

Establish rules for:

- Privacy.
- Security.
- Validation.
- Access.
- Responsible use.

Phase 6: Continuous Improvement

Measure system performance and organisational outcomes and continuously refine the KM ecosystem.

35. Questionnaire

Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

No.	Statement
1	AI can significantly improve organisational knowledge management.
2	AI-enabled search can reduce the time employees spend locating information.
3	AI can improve knowledge sharing between departments.
4	AI can help preserve valuable organisational knowledge.
5	Generative AI can support organisational learning.
6	AI-enabled KM can strengthen organisational innovation capability.
7	Employees need AI literacy to use intelligent KM systems effectively.
8	Human experts should validate important AI-generated knowledge.
9	Data privacy is a significant concern in AI-enabled KM.

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No.	Statement
10	Organisations should establish formal governance for AI-enabled KM.

36. Discussion

AI-enabled knowledge management represents a significant transition in organisational information practices.

Traditional KM systems primarily answer:

Where is the information?

AI-enabled KM systems can increasingly answer:

What information is relevant, how is it connected, and how can it support this particular task?

This distinction has important strategic implications.

An organisation's competitive advantage depends increasingly on how quickly it can transform knowledge into action.

AI can reduce the time required to:

- Find information.
- Analyse information.
- Connect different knowledge sources.
- Generate insights.
- Identify expertise.
- Support innovation.

However, AI implementation alone does not guarantee better organisational performance.

The quality of AI-enabled KM depends on the interaction between:

Technology + Data + People + Processes + Culture + Governance

Weakness in any one of these areas can limit the overall effectiveness of the system.

37. Theoretical Implications

The study contributes to knowledge-management research by conceptualising AI as an enabling layer connecting organisational knowledge processes.

The proposed model integrates ideas from:

- Knowledge-based views of the firm.
- Organisational learning theory.
- Dynamic capabilities.
- Digital innovation.
- Human–AI collaboration.

AI can potentially strengthen organisational dynamic capabilities by enabling organisations to:

Sense
Identify emerging information and opportunities.

Learn
Extract knowledge from organisational experience.

Adapt
Modify processes based on new insights.

Innovate
Combine knowledge to create new products, services, or processes.

38. Managerial Implications

Managers should avoid treating AI-enabled KM as simply an IT implementation project. Instead, they should consider it an organisational transformation initiative.
Management should:

1. Identify high-value knowledge processes.
2. Establish clear AI objectives.
3. Improve data quality.
4. Train employees.
5. Protect organisational knowledge.
6. Maintain human oversight.
7. Measure knowledge-sharing outcomes.
8. Connect KM with innovation strategy.

39. Future Research Directions

Future research should investigate:

1. Empirical relationships between AI-enabled KM and innovation performance.
2. The impact of generative AI on organisational learning.
3. AI-supported tacit knowledge capture.
4. Knowledge graphs and organisational intelligence.
5. Human–AI collaboration in knowledge-intensive organisations.
6. Employee trust in AI-enabled KM.
7. AI governance and knowledge security.
8. AI's impact on organisational memory.
9. Cross-cultural differences in AI-enabled knowledge sharing.
10. Long-term effects of AI-enabled KM on innovation performance.

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Longitudinal studies could be particularly valuable because the benefits of organisational learning and knowledge retention may emerge gradually rather than immediately after implementation.

40. Conclusion

AI-enabled knowledge management represents an important transformation in how organisations create, capture, organise, share, and apply knowledge.

AI technologies including natural language processing, machine learning, knowledge graphs, semantic search, recommendation systems, and generative AI can transform conventional repositories into intelligent knowledge ecosystems.

The greatest opportunity lies not in replacing human expertise but in augmenting it.

AI can provide:

Speed + Scale + Search + Pattern Recognition + Synthesis

while humans provide:

Experience + Context + Creativity + Judgement + Accountability

When these capabilities are effectively combined, organisations can strengthen their ability to learn from experience, share knowledge across boundaries, identify innovation opportunities, and respond to environmental changes.

The overall relationship can therefore be represented as:

AI-Enabled Knowledge Management

↓

Improved Knowledge Accessibility

↓

Knowledge Sharing

↓

Organisational Learning

↓

Knowledge Recombination

↓

Innovation Capability

↓

Sustainable Competitive Advantage

The future of knowledge management will consequently depend on organisations' ability to build human-centred, AI-enabled knowledge ecosystems in which technology continuously supports learning, decision-making, collaboration, and innovation.

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