

***The requirements needed to the implementation of the
operations of knowledge management in Algerian
industrial complexes in light of the knowledge economy***

*متطلبات تطبيق عمليات إدارة المعرفة في المجمعات الصناعية الجزائرية في ظل إقتصاد
المعرفة*

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*Received: 13/05/2025 ; Accepted for reviewing: 26/12/2025
; Accepted for publishing: 31/12/2025*

Abstract

This study examines the requirements for implementing knowledge management operations in Algerian industrial complexes, with the aim of developing a solid theoretical framework and clarifying the implications of knowledge processes for strengthening workers' capacities and improving organizational performance. Using an analytical-theoretical approach, the research analyzes the relationships between knowledge management requirements and processes, focusing on organizational culture, structure, administrative leadership, technology, and human resources. The findings result in practical recommendations aimed at promoting continuous development and improving performance in Algerian industrial complexes.

Keywords: requirements of the knowledge management industrial complexes; knowledge economy; organizational performance.

JEL classification code : XN1, XN2

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1. Introduction

The findings lead to a set of recommendations and proposals intended to support continuous development and improvement within Algerian industrial complexes.

The end of the twentieth century witnessed the emergence of a range of new concepts, approaches, and systems in the field of public administration, such as total quality management, re-engineering, and restructuring. At the beginning of the 1990s, Western governments began to pay significant attention to companies and organizations with a higher level of knowledge, meaning those that possess a distinct and superior ability to obtain, manage, apply, and benefit from knowledge. In this context, the concept of “knowledge management” emerged, which involves placing acquired knowledge and skills in the hands of workers at the appropriate time and in the most accessible form to achieve higher levels of performance.

Hence, knowledge management plays a role in discovering, capturing, and documenting knowledge embedded in the minds and actions of individuals, in order to share and apply it to achieve the organization’s desired goals. Knowledge management represents one of the contemporary intellectual developments, focusing on employees engaged in cognitive activities and individuals with specialized skills and abilities performing mental work within the organization.

Management also benefits from its relationships with current and new customers who possess ideas, experiences, and knowledge that are not available to the organization or are difficult to obtain through its own efforts. Therefore, acquiring this knowledge, in addition to the knowledge already available, provides the organization with the capacity to develop its relationships and achieve its desired objectives.

On the other hand, the application of knowledge management requires a set of essential elements, such as an organizational structure suitable for knowledge management, which promotes greater independence in decision-making and fosters teamwork, and an organizational culture that encompasses the multiple aspects of

knowledge management. In addition, there must be leadership that encourages the adoption of knowledge management, capable of communicating the vision and serving as a role model. Modern information technology provides many capabilities for knowledge management, including information networks, internal networks, browsers, data warehouses, data filters, and software programs, which facilitate and accelerate knowledge management within organizations. Consequently, the flow of knowledge can be considered the beating heart of modern business organizations. This highlights the importance of proper use of advanced information technology in knowledge management, contributing to the enhancement of competitive advantage in business organizations.

Based on the above, the field of knowledge management, with its modern concept and global challenges, requires Algerian industrial complexes, among the most important organizations, to exert greater effort in this area. Knowledge management and intellectual capital have become foundational to the development of nations and a primary concern for experts. In today's world, this represents the greatest challenge for industrial complexes, requiring them to make a qualitative shift in knowledge management and to build their strategies on this basis.

2. First axis: Study methodology

2.1. The problem of the study

The changes occurring in institutions due to shifts in the external environment, full of competitive challenges, make it difficult for these institutions to gain a competitive advantage by managing only their tangible resources. To confront this situation, attention has turned to knowledge management as an activity through which an organization can excel over its competitors. Since Algeria does not have abundant industrial wealth, its institutions are in dire need of adopting knowledge management to achieve excellence.

It has become clear that knowledge plays a major role in building and achieving outstanding performance, as it is embodied in processes

and requirements related to high performance. Therefore, cognitive ability can be derived from knowledge and its methods in creating distinction over competitors, as follows:

1. Knowledge is the basic source of organizational excellence.
2. Knowledge leads to the production of distinguished products and services.
3. The organization's knowledge-based ability has an internal nature that makes it non-reproducible, providing the organization with superior performance.

From this standpoint, the problem of the study can be formulated as the following question:

What are the requirements for applying knowledge management processes in Algerian industrial complexes?

Answering the main question requires addressing the following sub-questions:

1. What is the organizational culture required to apply knowledge management in industrial complexes?
2. What are the regulatory requirements for applying knowledge management in industrial complexes?
3. What are the technological requirements for applying knowledge management in industrial complexes?
4. What are the leadership requirements for applying knowledge management in industrial complexes?
5. What are the human resources requirements for applying knowledge management in industrial complexes?

2.2. Objectives of the study

1. To prepare a theoretical framework for knowledge management, representing a source of competitive advantage for Algerian industrial complexes.
2. Determine the theoretical and analytical implications and implications of knowledge management requirements and processes that are essential to work for the purpose of enhancing employees'

creative capabilities towards achieving better performance for the industrial complex.

3. Identify the most important requirements of organizational culture that affect the application of knowledge management.

4. Detecting the specifications of the organizational structure appropriate for applying knowledge management.

5. Identify the qualities of administrative leadership that suit the application of knowledge management.

6. Identify the technological requirements necessary to apply knowledge management.

7. Revealing the characteristics of human resources necessary to apply knowledge management.

8. Providing a set of recommendations and proposals about knowledge management requirements in Algerian industrial complexes, which would serve the management of industrial complexes in continuous development and improvement.

2.3. The importance of the study

- It contributes to drawing attention to the requirements of knowledge management and its role in industrial complexes.

- The importance of the variables studied and their role in ensuring the success of organizations and ensuring their continuity in the market and confronting competitors.

- It contributes to determining the nature of the knowledge management requirements that organizations must ensure to provide in order to secure and create an environment that supports and encourages the achievement of organizational creativity.

- **Scientific importance**

- This study is an attempt to shed light on the requirements for applying knowledge management in industrial complexes, through the importance of the knowledge management approach as a method for

improving and developing the administrative system in industrial complexes.

- Identifying the relationship between industrial complexes and knowledge management, based on the intellectual and cognitive balance of industrial complexes, and their role in building the human element.

This study can be considered as a source for researchers and scholars who would like to learn about the requirements for applying knowledge management in Algerian industrial complexes. This study may constitute a starting point for researchers and those interested in conducting further research in this field.

- Explaining the importance of knowledge management for Algerian industrial complexes. Industrial complexes, with their qualified human resources, competencies, and research and service centers, are a source of knowledge formation, informatics, and idea generation. This necessitates them to adopt knowledge management programs as a basic approach in planning their future goals.

- **Practical importance**

The results of this study may contribute, by determining the reality of applying knowledge management requirements in Algerian industrial complexes, to developing the administrative system in industrial complexes, which leads to increasing the efficiency of the industrial complex in satisfying beneficiaries.

- The researcher hopes that this study will contribute to familiarizing administrative leaders in industrial complexes with knowledge management and the areas of its employment and benefit.

- This study seeks to improve administrative performance through optimal exploitation of knowledge and its management through generating, storing, sharing and applying knowledge, and

demonstrating the relationship of knowledge management to administrative processes and improving quality.

2.4. Study methodology

The study relied on the theoretical and analytical approach to describe the research variables. In this approach, the researcher used the approach of documentary studies by extrapolating and analyzing studies related to the subject of the study and benefiting from them in answering the study's questions and achieving its objectives, and as a result, the following plan was adopted:

- Theoretical framework for knowledge management.
- Requirements for applying knowledge management processes in Algerian industrial complexes.

3. The theoretical framework for knowledge management

3.1. Definition of knowledge management

Wick defines it as emerging in an organization capable of generating knowledge. It is a primary source of added value and a type of competitive advantage, a major market for the organization's business, and an important activity that permeates every aspect of it. Its users are highly qualified and have a sophisticated culture. They are knowledge makers (Wick, 2014).

As for Skyrme, he defines it as "the systematic and clear management of knowledge and the associated processes for creating, collecting, organizing, disseminating, using, and exploiting it. It requires transforming personal knowledge into collaborative knowledge that can be clearly shared across the organization" (Skyrme, 1997).

3.2. The importance of knowledge management

- Providing the opportunity to obtain a permanent competitive advantage for organizations, through its contribution to enabling these organizations to adopt more innovations represented in offering new goods and services.

Supporting efforts to benefit from all tangible and intangible assets, by providing a framework for enhancing organizational knowledge (Awad, 2012).

- At the organizational level, knowledge management helps in leading the strategy and achieving its goals, as well as quickly solving organizational problems and disseminating best practices within the organization, thus improving the integration of knowledge into the organization's products and services, as well as enriching ideas, increasing opportunities for innovation, and finally building organizational memory (Dalkir, 2005).

3.3. Knowledge management processes in industrial complexes

3.3.1. Knowledge diagnosis

Knowledge diagnosis is the main key to the knowledge management project and an important and fundamental process that contributes to launching and determining the form and depth of other processes. This process begins with defining and clarifying knowledge and searching for its whereabouts, whether it exists in the minds of workers, in systems, or in procedures, and identifying the gap between current knowledge assets and the required knowledge.

3.3.2. Creating knowledge

It is the creation, derivation and formation of knowledge within the organization. It is one of the most important knowledge management processes, through which the organization ensures that it possesses the knowledge necessary to achieve its goals.

Knowledge is created from internal sources: such as documents, records, and employees, or from external sources: such as purchasing, renting, merging, or the Internet (Al-Maani, 2009).

3.3.3. Acquiring knowledge

It means all activities through which the organization seeks to obtain and acquire knowledge from its multiple sources, such as those containing explicit knowledge such as databases. At this stage, the organization seeks to adopt a relatively different method, which is to acquire available knowledge, whether from internal or external sources such as experts, specialists, competitors, customers, suppliers, databases, the organization's archive and memory, etc.

3.3.4. Organizing knowledge

It refers to preserving knowledge from loss. It includes preserving the information that employees possess, by preserving the distinguished knowledge workers in the organization, and transforming this knowledge into an internal structure that includes removing the tacit knowledge from their minds through training and dialogue and organizing it in a way that is accessible to the organization's members.

3.3.5. Availability of knowledge

It means exchanging ideas, experiences and skills among employees. It requires workers to communicate with each other and use what they know to solve problems creatively. Knowledge truly grows when it is shared and used. Distributing knowledge has become easier using advanced technologies such as the Internet and advanced communication networks.

3.3.6. Use of knowledge

The application of knowledge means the actual benefit of knowledge in an effective manner that ensures the achievement of the organization’s objectives efficiently and effectively. This requires delegating broad powers to employees, and giving them sufficient freedom to apply their knowledge (Al-Maani, 2009, p. 377).

4. Requirements for applying knowledge management processes in industrial complexes

Knowledge management does not operate in a vacuum, but rather operates within the framework of an organizational environment that includes many elements and variables. However, there are four variables that interact with each other and affect the knowledge management process, meaning that they may be supportive of knowledge management in order to achieve greater organizational effectiveness, and they may also be disabling, these four variables are organizational culture, organizational structure, information technology, and organizational leadership.

Table 1: Requirements and Challenges for Implementing Knowledge Management

item	Knowledge management requirements	Obstacles to knowledge management
Technological and software capabilities	Providing computers and work-related software, such as software, electronic search engines, and all related matters, and refers to information technology and systems.	The transfer and sharing of knowledge depends on the existence of effective mechanisms that allow this. The lack of the necessary technology hinders the transfer, sharing and sharing of knowledge.
Human	Availability of workers and	Leadership’s inability to

resources and leadership	leadership who are responsible for carrying out the activities necessary to generate, preserve, distribute and apply knowledge.	innovate, not involving employees, and not taking their opinions into account.
Organizational structure	Provides a flexible organizational structure so that employees can unleash their creativity and work freely to discover and generate knowledge.	The hierarchical organizational structure based on bureaucratic foundations is characterized by inflexibility in transferring and sharing knowledge.
Culture	Creating a positive culture that supports knowledge, knowledge production and sharing, establishing society on the basis of sharing knowledge and personal experiences, building effective networks in relationships between individuals, and establishing a societal and organizational culture that supports knowledge.	An organization that relies on traditional relationships of control and authority finds it difficult to transfer knowledge, because the managerial mentality limits the opportunities to form groups.
Other components	There are three integrated components: people, technology, and processes.	It requires a complete and adequate understanding of knowledge management before application.
Other components	Individuals share available knowledge, information technology, intellectual assets and intellectual capital, in addition to improving operational and organizational effectiveness.	Ambiguity in the boundaries between apparent knowledge and implicit knowledge

Source: (Abu Muammar, 2017, p. 33).

5. Conclusions and recommendations

1. Develop a knowledge management strategy within the general strategy of the industrial complex, where the senior management is responsible for implementation, while the implementation mechanisms are as follows:

- The organizational structure of the industrial complex should include a specialized knowledge management department, which is responsible for identifying the knowledge gap and how to fill this gap through knowledge management processes.
- Providing appropriate financial support that ensures the success of this administration within the industrial complex.
- Creating a new job title (Knowledge Manager), to assume the duties and leadership of this department.

2. Increasing the cognitive capabilities of employees, where the training department and the public relations department are responsible for implementation. The implementation mechanisms are as follows:

- Preparing training programs to introduce knowledge management, its importance, and how to apply it.
- Holding conferences and seminars for workers to introduce them to everything new in the field of work.

3. Motivating employees and encouraging them to exchange and share knowledge. The responsible for implementation is senior management. The mechanisms for implementing this are represented by:

- Work teams
- Communities of practice.
- Strategic groups.
- Promotions and rewards.

4. Providing administrative leadership that supports the application of knowledge management. The person responsible for implementation is senior management and the training department. The mechanisms for implementing this are as follows:

- Preparing training programs for administrative leaders on knowledge management and how to apply and benefit from it.
- Linking the selection and appointment of administrative leaders to the possession of knowledge.
- Urging administrative leaders in industrial complexes to document the creative ideas presented by employees and work to develop and benefit from them.

5. Developing a flexible organizational structure that supports the application of knowledge management, where the person responsible for implementation is senior management, while the implementation mechanisms are as follows:

- Relying on horizontal structures in which the number of administrative levels is reduced, which helps facilitate the communication of workers with each other and with their manager and vice versa.
- Relying on decentralized structures, in which decision-making authority is less concentrated at higher administrative levels, which facilitates the exchange of knowledge among employees.
- Removing all obstacles that prevent knowledge from reaching individuals and various administrative units.

6. The need to pay attention to the information technology necessary to implement knowledge management processes, so that the person responsible for implementation is the senior management and the communications and information technology hub or department in the industrial complex. The implementation mechanisms are as follows:

- Connecting workers in the industrial complex to one network at all levels.
- Documenting all experiences, knowledge and ideas, and storing them in databases in a way that is easy to refer to.
- Designing a knowledge base for distinctive solutions to the problems facing the industrial complex, analyzing their causes and suggested ways to avoid them later.

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