

## ***ERP and Modernization of Business Models in Algeria : Case study of Algérienne des Eaux (ADE)***

*BENMANSOUR AHMED HICHEM\**

University of Oran 2  
(Algeria)

Benmansour.ahmed@univ-oran2.dz

Reguig Issaad Driss

University of Oran 2,  
(Algeria)

reguiegissaad@yahoo.fr

### ***Abstract***

*In a context of increasing digital transformation, Enterprise Resource Planning (ERP) systems represent a strategic lever for the modernization of business models, particularly in public enterprises. This article focuses on the case of Algérienne des Eaux (ADE), through a qualitative case study approach, this research aims to identify the obstacles to the full integration of the system and assess the organizational impacts of this fragmented software usage. Semi-structured interviews were conducted with key actors within ADE to gather their perceptions, practices, and representations. The findings reveal technical, institutional, and human barriers to comprehensive adoption, as well as a significant underutilization of the ERP's potential in strategic management and operational performance.*

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\* Corresponding author

## 1. Introduction:

Digital transformation has become an essential lever for modernization for public organizations around the world nowadays (Zineb & Anouar, 2025; Diarra, Coulibaly, & Doumbia, 2024; Mbala Nseka, 2024). Among the most emblematic technological tools of this transformation are ERP (Enterprise Resource Planning) systems, which enable the integration and centralization of management processes through a single database. In developing countries, particularly in North Africa, the adoption of ERP systems raises specific issues related to organizational structure, human resources, corporate culture, and institutional governance.

In Algeria, several public enterprises have undertaken digitalization efforts, but often in a fragmented and incomplete manner. The Algérienne Des Eaux (ADE), a strategic player in the distribution of drinking water, uses the national software BIG Informatique, a local ERP, but only uses the accounting module. This partial choice limits the company's ability to fully benefit from the functional integration offered by a complete ERP system. This situation raises an essential question: **to what extent does the partial use of an ERP hinder the modernization of the economic model of a public enterprise like ADE?**

This article is part of a qualitative approach aimed at exploring the human, technical, and institutional factors that explain this partial adoption and at understanding its consequences on internal organization and modernization prospects. Through a case study and semi-structured interviews with various ADE stakeholders, this research aims to uncover internal perceptions, encountered obstacles, and untapped opportunities.

The article is structured into six parts. After this introduction, the second section presents the theoretical framework and previous works on ERP and the transformation of business models. The third describes the adopted methodology. The fourth presents the results of the case study. The fifth section offers a critical discussion of the results obtained in light of the literature. Finally, the last section presents the conclusions.

## 2. Literature Review

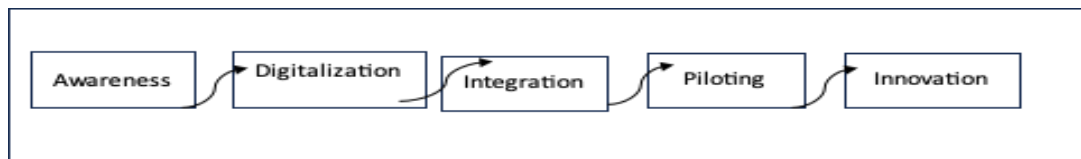
### 2.1. ERPs: Integrated Tools and Drivers of Transformation

ERP systems (Enterprise Resource Planning) can be described as integrated software solutions that centralize and synchronize an organization's business processes (Davenport, 1998). They provide a cross-sectional view of operations, facilitate decision-making, reduce redundancies, and allow for increased traceability as they also offer reporting tools that enable management to make decisions based on real data. In the public sector, ERPs are seen as strategic levers to improve efficiency, transparency, data traceability, and service quality (Mansour & Vadell, 2024). Beyond automation, ERPs are true catalysts for organizational transformation, as they involve a redesign of management practices, processes, and often roles within companies (Holland & Light, 1999). However, their implementation require a profound transformation of the organization: restructuring processes,

reallocating responsibilities, and changing management culture (Davenport, 1998; Holland & Light, 1999). This contrasts with private companies that have widely adopted these tools in public institutions, particularly in developing countries, often show a delay in integration or partial use, compromising the transformational potential of these systems (Mugigayi & Kasadha, 2024).

Digital maturation cycle in the public sector: This diagram below, adapted from the African Development Bank (2023), outlines the progressive phases of digital transformation in the public sector—from basic digitization to data-driven governance. It highlights the critical role of system interoperability, regulatory frameworks, and institutional readiness.

**Fig.1.** Phases of digital transformation in the public sector<sup>1</sup>.



**Source:** (Adapted from African Bank Report (2023))

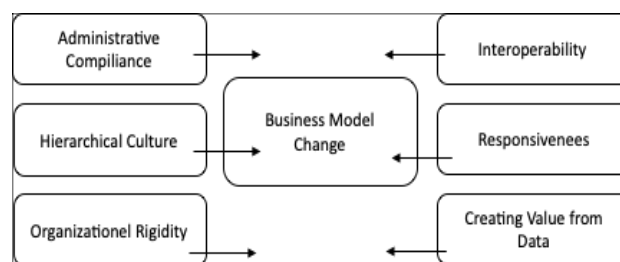
## 2.2 Digitalization and Transformation of Business Models in the Public Sector

Digital transformation rethinks business models by introducing value creation dynamics centered on data, interoperability, and responsiveness (Zott & Amit, 2010). In public company, this transformation is often limited by management models focused on administrative compliance rather than innovation or performance (Pollitt & Bouckaert, 2011).

Originally designed for commercial enterprises, ERPs can serve as a technical backbone to support the transformation of public business models towards a more service-oriented, performance-driven, and strategically guided approach. However, this requires a complete integration of the modules and a reengineering of internal processes, which is often lacking in the context of public enterprises in the Maghreb (Ghobakhloo & Tang, 2013; Benamghar, 2017).

In public enterprises, the introduction of an ERP constitutes a strategic change aimed at improving governance, transparency, and efficiency. However, this transformation requires significant structural and cultural adaptation, especially in contexts where practices are still heavily bureaucratic.

**Fig.2.** Value model shifts in public sector companies in the face of digital transformation.



**Source:** Diagram created by the author based on Zott & Amit (2010) and Pollitt & Bouckaert (2011).

<sup>1</sup> In Algeria, most public entities remain in early stages of this trajectory.

Figure 2 highlights a structural tension between two management logics within public enterprises in the context of digital transformation. It articulates this transformation around a central node of business model recomposition (value model), influenced by digital dynamics.

On the left side of the figure, we find the traditional constraints thus, public enterprises have historically been governed by a bureaucratic logic, where administrative compliance, vertical hierarchy, and standardization of procedures constitute the foundations of organizational action (Pollitt & Bouckaert, 2011)<sup>2</sup>. This model, based on stability and regulation, tends to slow the natural adoption of information and communication technologies, perceived as bearers of instability and questioning of established routines.

The prevailing managerial culture in such companies prioritizes control over experimentation, which complicates the adoption of innovative systems like ERPs or interoperable platforms. These obstacles slow down modernization, particularly when it requires decentralization of decision-making or increased agility.

At the center of the figure, digital transformation acts as a catalyst for the mutation of the business model of public organizations. According to Zott & Amit (2010), this transformation involves not only the introduction of new tools but also the reconfiguration of mechanisms for value creation and capture. In a digital environment, public enterprises must learn to manage data flows as strategic resources, not just as simple recording variables.

It is this tipping point, depicted at the center of the diagram, that represents the transition towards an integrated digital logic, capable of harmonizing performance, innovation, and user-oriented public services.

The dimensions located on the right side of the figure illustrate the opportunities offered by digital transformation. Three axes in particular can be highlighted:

- **Interoperability**, which enables the networking of heterogeneous systems and the streamlining of processes (OECD, 2020).
- **Reactivity**, that is, the ability to quickly adapt to citizens' needs and political priorities, thanks to real-time technologies.
- **The creation of value through data**, which involves the strategic exploitation of available information to improve public decisions, optimize resources, and personalize services.

This reconfiguration aligns public organizations with standards inspired by the private sector, while adapting them to the specificities of the public mission.

<sup>2</sup> In the Algerian public sector, value creation remains predominantly driven by compliance and hierarchical control

## **2.3. Challenges of ERP Implementation in Africa and the Maghreb**

Several recent studies identify major structural and cultural obstacles to the implementation of ERPs in African and Maghreb countries. Mansour & Vadell (2024) emphasize that ERP projects often fail due to the absence of a comprehensive integration strategy, lack of training, and governance that is poorly suited to change management.

For their part, Mugigayi & Kasadha (2024) highlight institutional resistance to digitalization, particularly in public institutions where processes remain manual, siloed, and not very open to automation. The lack of internal digital skills also constitutes a persistent barrier to the full utilization of ERP systems.

## **2.4. Risks associated with partial use of an ERP**

Software fragmentation is a concerning phenomenon in the context of Algerian companies, particularly for organizations like Algérienne des Eaux. This phenomenon results from the use of multiple software systems that often do not communicate effectively with each other because they do not use a unified database.

The different platforms can reinforce information silos, making it difficult for data to flow between departments, which limits informed decision-making and slows down responsiveness to market needs. The fragmented adoption of an ERP, as is the case at ADE, can lead to significant organizational inefficiencies: double data entry, lack of interoperability, low reliability of indicators, and difficulties in overall management (Mabert et al., 2003). By only using the accounting module, a company loses the strategic advantage of functional cross-functionality.

According to Bingi et al. (1999), a partial implementation of an ERP not only leads to underutilization of its functionalities but also results in a loss of user trust in the system, which can lead to latent rejection or digital inertia.

Moreover, in terms of data management, software fragmentation poses significant challenges in terms of compliance and security. Data scattered across different platforms makes it more difficult to comply with regulations regarding personal data protection and reporting. In summary, for Algérienne des Eaux, the need to centralize and harmonize its software systems appears crucial to overcome these obstacles and maximize its modernization potential. The strategic approach of integrating an ERP could prove not only beneficial for remedying the existing fragmentation but also for paving the way for a digital transformation that would support the shift towards renewed and more efficient business models.

## **3. Methodology**

### **3.1. Research Approach:**

This research adopts an interpretative qualitative approach, particularly suited for exploring complex organizational phenomena, such as the partial adoption of an ERP in a public enterprise. The objective is not to measure but to deeply understand the perceptions, barriers, uses, and stakes related to the

integration of an ERP in a specific context. This approach takes into account the human, social, and institutional dimensions that determine the success or failure of a digital transformation.

### **3.2. Data Collection**

The data collection began with a phase of document analysis. We thus consulted various internal documents, such as activity reports, audit reports, management procedures, and organizational charts, as well as the specifications of the BIG Informatique software, to contextualize the analysis. These elements laid the groundwork for a structured understanding of the organization's functioning, its strategic orientations, and the challenges related to digitalization.

In parallel, we conducted a series of semi-structured interviews with about ten managers, each lasting an average of 30 to 45 minutes. The interviews were designed to encourage free speech while ensuring coherence in the topics discussed. The participants hold various positions, which allows for the cross-pollination of perspectives and access to a multifaceted understanding of the digital experience within the company. The discussions mainly focused on the practical uses of the system, perceptions of its usefulness, daily obstacles encountered, as well as expectations regarding its evolution and integration.

### **3.3. Analysis Method**

The data analysis was conducted using an inductive thematic analysis, inspired by the method of Braun & Clarke (2006).

This method allows for the identification, coding, organization, and interpretation of recurring themes emerging from the interviews.

The steps of the analysis:

- a) Full transcription of the interviews.
- b) Initial coding of units of meaning using a grid.
- c) Grouping into themes: technical obstacles, human resistance, perceived benefits, etc.
- d) Cross-sectional interpretation in relation to the theoretical framework.

The analysis was conducted manually, due to the limited volume of data, with cross-validation between two readers to ensure rigor.

### **3.4. Methodological Limitations**

Like any research rooted in a specific context, this study has limitations. It is based on a single case, which does not allow for generalizing the results to the entire Algerian entrepreneurial fabric. Moreover, the interpretative dimension of the analysis may be influenced by the researcher's subjectivity, despite efforts for cross-validation and methodological transparency. Finally, the institutional context in which the observed company operates cannot be representative of all sectoral or territorial realities.

However, this approach provides a rich and nuanced insight into the real conditions of digital technology adoption in an Algerian public organization.

It highlights the tensions, sometimes invisible, that permeate digital transformation projects and emphasizes the importance of placing technological tools within a broader understanding of human relations, power dynamics, and organizational trajectories.

## **4. Results**

### **4.1 Presentation and Organization of the Algerienne Des Eaux**

The Algerienne des Eaux (ADE), as a public establishment with an industrial and commercial character, plays a fundamental role in the management of drinking water distribution in Algeria. Created in 2001 by decree no. 01-101 of 27 Moharrem 1422 corresponding to April 21, 2011, establishing the ADE. This company is responsible for the operation and management of water supply networks throughout the national territory. With a population exceeding 43 million inhabitants, the ADE company faces considerable challenges to ensure equitable and sustainable access to water, a vital resource whose availability varies depending on regions and seasons. This challenge is amplified by complex climatic and demographic realities, requiring constant resource mobilization and optimization of operational processes.

As part of its missions, Algérienne des Eaux manages over 10,000 kilometers of pipelines and serves millions of subscribers across 58 Wilayas, with an infrastructure that requires regular modernization and maintenance. The company is working to implement efficient management systems to ensure quality service while also ensuring the sustainability of water resources. The modernization of its business models is essential to meet the growing expectations of consumers but also to adapt to technological advancements. In this sense, the integration of an ERP (Enterprise Resource Planning) system represents a strategic opportunity for ADE, allowing for data centralization, operational streamlining, and improved decision-making. The update of these IT solutions could significantly enhance the company's operational efficiency and its ability to anticipate future water supply needs.

### **4.2 Organization and Strategic Role of the DCSI within the Algérienne des Eaux**

As part of its digital transformation, Algérienne des Eaux (ADE) has established a Central Directorate of Information Systems (DCSI), a key structure responsible for driving the establishment's digital strategy. This department plays a structuring role in the integration of information technologies to enhance operational performance and improve internal processes.

The main mission of the DCSI is to develop and deploy the IT master plan, in line with the company's strategic objectives. It ensures the implementation of structuring digital projects, the standardization of systems, and the management of technological evolution at the national level. She also acts as a functional authority with regional IT entities, ensuring the uniformity and reliability of digital environments.

In accordance with the ministerial decree of June 20, 2013, the DCSI is organized around two specialized departments:

- The Department of Material and Immaterial Infrastructures is responsible for the design and management of network and system architectures, the implementation of hosting solutions (Data-Center), and the maintenance of IT infrastructures
- The Department of Operations and User Services is responsible for technical support, functional assistance, and the operation of tools and applications deployed within the ADE.

These departments are supported by a unit dedicated to the development and integration of application solutions, which assists the business sectors in implementing specific software packages, including the internally used ERP. This system, although partially deployed, serves as a lever for streamlining administrative and financial processes.

Furthermore, the DCSI is implementing continuous technological monitoring to anticipate sector developments and accordingly adapt ADE's technological choices. It thus positions itself as a cross-functional player, capable of ensuring technical coherence, cybersecurity, and the gradual deployment of an integrated information system, aligned with modern public management standards.

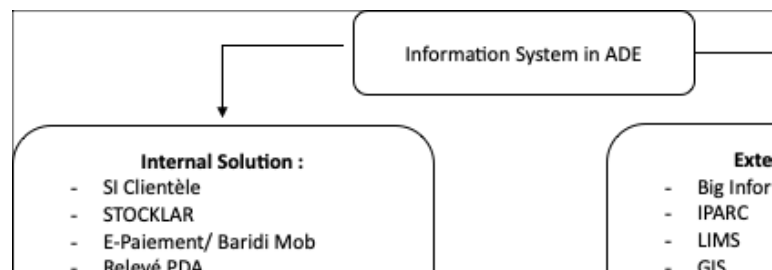
#### 4.3 Information Systems within the Algérienne Des Eaux

L'Algérienne des Eaux relies on an application portfolio structured around a dual development model, on one hand, a set of solutions developed internally, supported by the Information Systems Department (DCSI), and on the other hand, applications acquired from external vendors to meet specialized needs.

The internal solutions cover key areas such as customer management, budget monitoring, index reading, online payments, human resources, and operational reporting. This dynamic allows for a high level of customization of the tools and local functional control.

At the same time, the ADE resorts to acquired solutions, particularly for accounting (BIG FINANCES, which is a module of BIG Informatique), fleet management (IPARC), or geomatics (ARC GIS, AutoCAD), reflecting the necessity to integrate proven and standardized technologies. This hybrid model reflects a strategy of progressive digitalization, combining internal innovation and the provision of external solutions to optimize the overall performance of the information system.

**Fig.3.** Application Architecture of ADE<sup>3</sup>



**Source:** Created by the author based on internal documents

<sup>3</sup> The application landscape of ADE is characterized by a hybrid and evolving architecture combining internally developed solutions with external software modules

The analysis of the interviews conducted within the Algérienne des Eaux (ADE) has revealed several themes illustrating the technical, structural, and organizational barriers to the full adoption of an integrated ERP solution. These results highlight a transitioning infrastructure, system silos, low data interoperability, and information overload due to the non-automation of processes.

#### **4.4. Underutilized and Non-Integrated Data Centers**

For the past three years, the ADE has initiated three pilot data center projects in the wilayas of Sidi Bel Abbès, Sétif, and Bouira. These infrastructures are primarily intended for data backup, which constitutes a significant advancement in information security. However, no software integration function is currently operational in these data centers. Their use remains passive, limiting their contribution to system interoperability or the consolidation of data on a national scale. This observation reveals an underutilization of the technological potential already in place.

#### **4.5. An obsolete and decentralized commercial system**

The commercial department of ADE continues to rely, in the majority of sites, on software developed internally several years prior to the company's creation. Today considered obsolete, inflexible, and difficult to interoperate. This system, still widely in use, requires the manual addition of new subscribers at the level of each wilaya, which causes significant delays in the processing and consolidation of customer data.

The processes for backing up commercial information also remain manual, increasing the risks of data loss, entry errors, and delays in updating databases. This situation hinders any attempt at automation or advanced analytics on customer data.

Aware of these limitations, ADE has initiated the development of a new customer information system (Customer SI), designed to centralize, secure, and streamline commercial operations on a national scale. This new tool, entirely designed in-house by the DCSI, is currently in the testing phase and is being progressively experimented with at certain pilot sites. Its large-scale deployment represents a strategic challenge for the modernization of services and the unification of customer relationship management practices across the territory, but its integration into an ERP is not on the agenda.

#### **4.6. A fragmented management of customer and financial data**

Even though partial digitization efforts have been made, particularly with the introduction of electronic payment solutions in partnership with Algérie Poste and SATIM, the integration of data flows remains limited. Updating customer data requires manual coordination between the IT department and the sales department. Similarly, the alignment of customer receivables with accounting depends on constant collaboration between the commercial and financial departments. This operation involves extended delays in information processing and prevents any automation of collection and financial reporting processes.

#### 4.7. A non-computerized purchasing management

The purchasing function does not have any digital management system. Operations are still carried out using manual notebooks for purchase orders and delivery notes. These documents are then sent to accounting for recording, which creates a significant time lag, exacerbated by the high volume of data to be processed. This lack of digitalization not only results in a significant administrative burden but also creates opacity in the traceability of logistical flows.

#### 4.8. A non-integrated ERP not accessible in the SaaS version

The ERP system BIG Informatique, currently used by ADE, is limited to its local version and does not have a web interface. This configuration significantly hinders remote access possibilities, interconnection between regional sites, and modular integration. The transition to a web version would be technically possible, but it requires a significant investment that is difficult to mobilize at the scale of a public company operating nationwide. This illustrates a classic tension in the public sector between budget constraints and the need for technological advancement.

**Table 1.** Functional assessment of the digital tools used at ADE

| Theme                 | Main finding                | Consequence                                             |
|-----------------------|-----------------------------|---------------------------------------------------------|
| Data centers          | Used only for backup        | No impact on software integration                       |
| Commercial System     | Outdated                    | Manual entry, slowness, frequent errors                 |
| Electronic payment    | Developed but not connected | Manual processing of receivables purchasing             |
| Purchasing management | 100% manual                 | Reduced traceability, administrative overload,          |
| ERP BIG Informatique  | non-SaaS version            | Partially used, low functional coverage, limited access |

**Source:** Created by the author based on Interview

These findings confirm that the partial and non-integrated adoption of an ERP within the ADE significantly hinders the modernization of its operational models and obstructs the overall digital transformation of the company. The technical infrastructure exists in part, but the organization and practices remain marked by fragmented and manual methods, incompatible with modern public service management.

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## **5. Discussion**

The results obtained through this qualitative case study confirm several findings already established in the literature on the implementation of ERPs in public organizations in developing countries. Nevertheless, the specific case of ADE highlights structural and contextual particularities that further complicate the process of integrating information systems.

### **5.1. A fragmented integration in line with trends observed in North Africa**

As highlighted by Mansour & Vadell (2024), many public organizations in the Maghreb countries are investing in digital infrastructures (such as data centers) without implementing a true logic of functional integration. The case of ADE illustrates this reality.

The establishment of three data centers remains limited to data backup, without interconnection with business software. This observation validates the idea of technical modernization without organizational transformation.

### **5.2. The lack of a unified vision of the information system**

One of the major findings from the interviews concerns the fragmentation of the tools used:

Outdated commercial software, a local ERP used only for accounting, manual purchase management, and electronic payment systems not connected to internal databases. This coexistence of autonomous systems illustrates the absence of a unified strategic vision of the information system, a central element in the literature to ensure the success of ERPs (Davenport, 1998; Mabert et al., 2003).

### **5.3. Organizational Resistance and Control Culture**

The manual approach that still predominates in several departments of the ADE (notably in purchasing and customer management) reflects an organizational culture still attached to paper, direct control, and decision centralization. This culture constitutes a major obstacle to the logic of transversality promoted by ERPs, as shown by Bingi et al. (1999) and Benamghar (2017). In the absence of effective change management, digital tools risk being perceived as technical additions disconnected from business practices. The transition from a compliance-oriented business model to a service-oriented model requires replacing a culture of control with a culture of performance and data. This transformation cannot take place without a stable and shared digital framework.

### **5.4. Digitalization efforts not accompanied by appropriate IT governance**

The digitalization initiatives started by ADE, such as the partnerships with Algérie Poste and SATIM for the implementation of electronic payment solutions, demonstrate a clear commitment to modernization. However, these efforts remain isolated and disconnected from an integrated digital strategy. In the absence of a centralized information system, their effectiveness relies on time-consuming manual coordination between the commercial, accounting, and IT departments.

This fragmented operation reveals a lack of structured IT governance. It is not just a technical flaw but a lack of strategic vision on the management of digital flows and data valorization. This situation aligns with the analyses of Mugigayi & Kasadha (2024), who assert that IT governance is one of the blind spots of digital reforms in African public services.

But more fundamentally, this deficit in digital governance prevents any transformation of the organization's economic model. The traditional business model, based on linear, centralized, and

heavily manual processing chains, cannot evolve towards a data-driven, reactive, service-oriented, and performance-oriented model without integrated informational infrastructure or process automation.

In other words, without a coherent digital transformation, there can be no change in the business model. Isolated digital tools are not enough but a global architecture is needed, supported by transversal governance, capable of interconnecting flows, ensuring data reliability, and producing new value-added services.

This direct link between digitalization and the transformation of the business model must be at the heart of ADE's modernization strategy. Without this, the organization will remain trapped in a traditional management framework, inefficient and not scalable on a national level.

### 5.5. Specificities of the Algerian context: size, budget, and territorial scale

The specificity of ADE, as a public entity present in all the wilayas of the country, creates a complex logistical challenge in terms of digital management. The transition to a SaaS version of the BIG ERP, more suited to a multisite architecture, is regularly mentioned as an essential technical evolution.

However, this transition faces significant financial constraints, particularly in a context marked by resource scarcity, which aligns with the findings of Ghobakhloo and Tang (2013) regarding budgetary constraints in developing economies.

In addition, there is an institutional constraint specific to the status of a public establishment with industrial and commercial character (EPIC) any technological advancement of this magnitude requires the development of a specifications document in compliance with public procurement regulations. This regulatory requirement, although necessary to ensure the transparency of procedures, considerably lengthens the timelines and complicates the acquisition processes.

Under these conditions, the lack of investment in integrated tools only prolongs an inefficient operational model, marked by excessive delays, informational redundancies, and resource dispersion. However, in many cases, the cost of inaction proves to be higher than that of digital transition, both in economic terms and in terms of institutional performance.

### 5.6. Critical Synthesis

By cross-referencing empirical results with theoretical contributions, several insights emerge:

**Table 2.** Intersection between theoretical contributions and field observations at ADE

| Key theme              | Alignment with the literature                                    | Specificity ADE                       |
|------------------------|------------------------------------------------------------------|---------------------------------------|
| Software fragmentation | Confirms the limits of partial integration (Mabert et al., 2003) | Strong disconnection between services |
| Organizational Culture | Resistance to change (Bingi et al., 1999)                        | Paper Culture and manual control      |
| Digital Governance     | Critique in the global south (Mansour & Vadel, 2024)             | Absence of a unified IS Strategy      |
| Budget constraints     | Known blocking factor (Ghobakhloo, 2013)                         | Resistance to fund a web version      |

**Source:** Created by the author

## Conclusion of the discussion

This analysis shows that the obstacles to adopting a complete ERP at ADE are not only technical but also involve human, cultural, budgetary, and organizational factors. The current fragmented approach compromises the modernization of public business models, which requires a logic of cross-functionality, integration, and performance orientation. The adoption of an ERP can only succeed if it is accompanied by a structural reform of management practices and a strategic vision led by top management.

## 6. Conclusion

The present study, based on a qualitative approach applied to the Algerienne Des Eaux (ADE), highlights a central issue, the partial adoption of an ERP, in the absence of an integrated digital strategy, significantly hinders the modernization of the company's management model. Empirical findings reveal a fragmented digitalization, characterized by isolated technical solutions, processes that are still largely manual, and a lack of interoperability between different departments.

More than just a management tool, the ERP should be seen as a structuring lever for transforming the business model, allowing a shift from a bureaucratic, linear, and siloed model to an agile model, driven by data and focused on service performance. In a public context like that of ADE, this transformation requires strong strategic choices, namely the modernization of infrastructures, the adoption of an interconnected web version of the ERP, and the redesign of business processes around integration logic.

This work confirms that without clear IT governance and fully embraced digital transformation, the potential of ERPs remains untapped, and the evolution towards a modern business model remains impossible. It is not enough to have digital tools they must also be integrated into a global vision, supported by skills, resources, and institutional will.

In short, the modernization of the economic model of Algerian public enterprises requires a paradigm shift to consider digitalization not as a mere technical project but as a corporate project, structuring, transversal, and transformative.

## Bibliography List :

### 1-Books :

- Mansour, N. & Vadell, L.M.B. (2024). *Artificial Intelligence, Digitalization and Regulation*. Springer.
- Pollitt, C. & Bouckaert, G. (2011). *Public Management Reform: A Comparative Analysis – New Public Management, Governance, and the Neo-Weberian State* (3e éd.). Oxford University Press.

- David, F. R. (2011). *Strategic Management: Concepts and Cases* (13e éd.). Pearson.
- Mazouz, B. (2014). *La stratégie des organisations de l'État : Contexte d'analyse, paramètres de décision et gestion du changement*. Éditions Yvon Blais.

## 2-Journal article

Davenport, T.H. (1998). Putting the enterprise into the enterprise system. *Harvard Business Review*.

- Holland, C. & Light, B. (1999). A critical success factors model for ERP implementation. *IEEE Software*.
- Ghobakhloo, M. & Tang, S.H. (2013). The role of organizational context in ERP success. *Journal of Enterprise Information Management*.
- Mabert, V.A., Soni, A., & Venkataramanan, M.A. (2003). Enterprise resource planning: Managing the implementation process. *European Journal of Operational Research*.
- Bingi, P., Sharma, M.K., & Godla, J.K. (1999). Critical issues affecting an ERP implementation. *Information Systems Management*.
- Zott, C. & Amit, R. (2010). Business Model Design: An Activity System Perspective. *Long Range Planning*, 43(2–3), 216–226. <https://doi.org/10.1016/j.lrp.2009.07.004>
- Benamghar, R. (2017). Modernisation de la gestion publique en Algérie : entre volonté politique et inertie institutionnelle. *Revue du CREAD*.
- Mugigayi, F. & Kasadha, J. (2024). Teaching as a Service: An Exploration of Educational Framework... In *IEEE IST-Africa Conference Proceedings*.
- Turton, J. W. (2010). A manager's view of critical success factors necessary for the successful implementation of ERP.
- Irakoze, G. (2016). ERP implementation success framework for developing countries: Case of South African SMEs.
- Harrison, J. L. (2004). Motivations for ERP System Implementation in Public Versus Private Sector Organizations.
- Adade-Boafo, A. (2018). Successful Strategies for Implementing an Enterprise Resource Planning System.
- Zhang, X. (2019). Drivers affecting cloud ERP deployment decisions: An Australian study.
- Djeflat, A. & Lundvall, B. Å. (2023). Transformation industrielle et gouvernance économique en Afrique du Nord. *ResearchGate*.

## 3-Internet websites:

- Banque Africaine de Développement. (2023). *Transformation numérique des services publics en Afrique : Rapport d'analyse et de recommandations stratégiques*.
- OCDE. (2020). *Digital Government Policy Framework: Six Dimensions of a Digital Government*. <https://www.oecd.org/gov/digital-government/policy-framework>