



Electronic Management – From Traditional Operations to Electronic Operations

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Abstract ;

"Be electronic or be eaten" is the motto of the day amidst the expansion of electronic operations into their virtual digital dimensions, reflecting the essence of the digital electronic era. Today, all operations compete in two worlds: the physical world and the electronic world, under the framework of e-management. This concept has become a modern administrative approach in contemporary management and is among the emerging topics on both regional and international platforms. Accordingly, this research paper aims to explore e-management as an alternative strategy to traditional management.

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Introduction

In recent years, the world has witnessed a massive revolution across various fields, particularly in the technological domain. The scientific advancements in information and communication technology, coupled with the widespread adoption of the internet and computer systems in business activities, have led to the integration of electronic services in management. This integration has significantly impacted the nature and structure of administrative systems, causing traditional public service models to give way to a new paradigm rooted in technology and information.

This shift has directly influenced management, which serves as a mechanism driving the wheel of development and represents a key feature of implementing electronic operations. As a product of technological advancements in communications, e-management emerged as a practical response to the technological explosion and rapid evolution of technological discoveries, particularly the applications and techniques of computing.

In the transition from traditional operations to electronic operations, this shift entails moving from physical spaces, buildings, and paperwork to a digital framework characterized by information, digital systems, networks, and paperless management. E-management relies on strategies and mechanisms aimed at transforming office-based, paper-dependent management into electronic processes. Amid this transformation, new principles have taken root and are asserting

their presence in the administrative landscape.

1. Concept of E-Management

Before delving into the definitions of e-management, it is essential to first understand traditional management. Traditional management is characterized by the completion of tasks through paper-based processes, necessitating the existence of extensive archive offices to store documents and files (Al-Fayoumi & Ahmed, 1998, p. 167).

The term *e-management* is a newly introduced scientific concept in contemporary disciplines. Despite its novelty, it has garnered significant attention and can be defined as:

"The management of informational resources based on the internet and business networks, tending more than ever to abstract and conceal objects and their related aspects, to the extent that intellectual informational capital has become the most effective factor in achieving its objectives and the most efficient in utilizing its resources" (Fidaa Hamid, 2015, p. 204).

It is also described as:

"The administrative process that employs modern technological tools such as the internet and communication networks to perform tasks including planning, directing, and monitoring an organization's resources and capabilities

to achieve its goals" (Najm Aboud Najm, 2010, p. 120).

Another definition refers to it as:

"The administrative process based on the exceptional capabilities of networks and technology for planning, directing, and monitoring an organization's core resources and the external environment without boundaries, aiming to achieve the organization's objectives" (Abdul Rahman Tawfiq, 2007, p. 41).

E-management is considered a strategic management approach for the information age, designed to deliver better services to citizens, institutions, and private-sector clients. It maximizes the use of available information resources by utilizing financial, human, and intangible assets in a modern electronic framework to optimize time, cost, and effort while achieving targeted outcomes with the desired quality. This concept aligns with the principle of "connect online, not offline" (Fidaa Hamid, 2015, p. 209).

From the above definitions, e-management can be summarized as:

- A managerial process.
- Management without a fixed location.
- Management without time constraints.
- Borderless resources and remote work.
- A shift from traditional to electronic administrative operations and services.
- Paperless management.

- Utilization of information and communication technology.
- Transformation of all traditional operations into electronic ones.
- Management of files rather than mere storage.

2. Objectives of E-Management

E-management seeks to achieve numerous goals in its interactions with clients, including but not limited to:

- Reducing administrative procedure costs and associated processes.
- Increasing administrative efficiency in its relationships with citizens, businesses, and institutions.
- Accommodating a larger number of clients simultaneously, unlike traditional management, which is often limited in capacity and leads to long queues.
- Minimizing or eliminating direct interaction between parties involved in transactions, reducing the impact of personal relationships on transaction outcomes.
- Replacing national paper-based archives with electronic archiving systems, offering greater flexibility in document processing, rapid error correction, dissemination of documents to multiple entities quickly, and availability of information at any time.
- Eliminating strict bureaucracy, simplifying labor division, and enhancing specialization.
- Creating favorable organizational and operational conditions for administrative work, safeguarding

- employees' rights to creativity and innovation, reducing information loss risks, and maintaining confidentiality. This supports transparency and reduces favoritism and strict bureaucracy (Ben Haitour, 2009, p. 104–107).
- Eliminating location constraints by enabling employee appointments, communication, order issuance, performance monitoring, and conducting conferences through video conferencing and electronic networks.
 - Reducing the impact of time constraints, making concepts like "summer and winter" irrelevant, and minimizing the need for administrative transactions during leave periods (Fidaa Hamid, 2015, p. 228–230).
 - Promoting the use of office technology and reducing operational costs (Abdul Rahman Tawfiq, 2007, p. 32).
 - Managing and monitoring various departments as a centralized unit.
 - Centralizing decision-making points while enhancing oversight mechanisms.
 - Standardizing data collection from original sources.
 - Reducing decision-making obstacles by providing and linking data.
 - Minimizing expenditure on administrative follow-up operations.
 - Utilizing information technology to foster a positive institutional culture among employees.

- Providing immediate access to data and information for beneficiaries.
- Enabling real-time and round-the-clock interaction.
- Encouraging continuous learning and knowledge building.
- Strengthening connections between employees and senior management and overseeing all resources (Fidaa Hamid, 2015, p. 22).

3. Dimensions of E-Management Development

3.1. E-Management as an Extension and Surpassing of Administrative Schools

The study of administrative thought evolution reveals a historical progression of administrative schools over more than a century. This development began with the classical school, encompassing Max Weber's bureaucratic model, Frederick Taylor's principles of scientific management, and Henri Fayol's administrative functions. It then transitioned to the human relations school, highlighted by the Hawthorne experiments (1933–1964), which culminated in the behavioral school. Following this, there was the quantitative approach during World War II, the systems approach in the early 1950s, and the contingency school in the 1960s. The learning organization approach emerged in the 1980s, and the rise of e-management marked the peak of this progression in the mid-1990s (Abdul Rahman Tawfiq, 2007, p. 42).

Some perceive e-management as originating with the internet, initially focused on commercial and public domains after its military and security

applications. Other studies suggest that interest in e-management began with governments adopting modern and digital technologies. A review of administrative history indicates that management thought evolved from Taylor and Weber's ideas to Elton Mayo's human relations theory, through the systems theory of the 1950s and the contingency theory of the 1960s, to the learning organization of the 1980s, culminating in the rise of e-management in the mid-1990s (Om El-Kheir Kowarikh, 2018, pp. 160–161).

3.2. E-Management as an Extension of Technological Progress in Administration

Technological progress has always aimed to replace manual labor with machines, starting with operational and routine tasks. It advanced to include programmable planning and control functions, such as in design, manufacturing, planning, and computer-assisted control. The evolution continued toward intellectual processes through artificial intelligence, which simulates human intelligence in areas like machine vision, natural language, and expert systems.

The internet and business networks represent the most advanced, globalized, and interconnected technologies, offering unprecedented speed and integration. This positions e-management as having a deeper technological dimension compared to any prior era where technology intersected with management. Technological advancements in the internet now extend beyond hardware to software, significantly influencing functions, relationships, and digital

operations conducted remotely (Abdul Rahman Tawfiq, 2007, p. 43).

From the above, it becomes evident that the transition from traditional management to e-management is inevitable. This shift is driven by global changes, scientific and technological advancements, and the continuous demand for improved quality and secure operations. These factors have necessitated the evolution of management towards e-management.

4. Requirements for E-Management Projects to Achieve Administrative Development

Like any project or program, e-management requires an appropriate and conducive environment to succeed. Without such preparation, these initiatives risk failure, leading to wasted time, money, and effort, and ultimately a return to square one.

Management is influenced by its surrounding environment and interacts with political, social, cultural, and technological factors. Therefore, e-management projects must meet specific requirements to transition from traditional management to e-management. These include:

4.1. Infrastructure:

A high level of infrastructure is essential, including a modern communication and data network and advanced wired and wireless systems capable of ensuring communication and information exchange between administrative institutions and between institutions and citizens.

4.2. Availability of Necessary Electronic Tools:

To benefit from e-management services, users must have access to devices such as personal and laptop computers, networked phones, and other tools enabling connection to global or local networks at affordable prices to facilitate access for the majority of citizens.

4.3. Internet Service Providers:

A sufficient number of internet service providers must be available, with prices kept as reasonable as possible to allow the widest number of citizens to interact with e-management services with minimal effort, time, and cost.

4.4. Training and Capacity Building:

Comprehensive training for employees on using computers, managing networks, databases, and all other necessary information is vital for the proper operation and guidance of e-management. Ideally, this training should be provided by specialized government-affiliated institutes or training centers. Additionally, a culture of utilizing e-management should be widely promoted.

4.5. Adequate Level of Funding:

E-management projects require a sufficient level of funding to ensure the availability of the necessary infrastructure, equipment, and resources for implementation.

4.6. Political Will:

There must be clear political commitment, with a designated authority or committee responsible for implementing the project. This body should create the appropriate environment for the project, oversee its execution, and evaluate progress at various stages of implementation.

4.7. Legal Framework and Regulations:

The establishment of laws and legal texts is essential to facilitate the operation of e-management. These regulations should grant legitimacy, credibility, and legal enforceability to e-management practices and their outcomes.

4.8. Cybersecurity and Data Privacy:

High levels of cybersecurity and data privacy must be ensured to protect national and personal information and safeguard the electronic archive from tampering. Emphasis on this requirement is crucial due to its importance and potential implications for personal and national security.

4.9. Comprehensive Marketing and Awareness Campaign:

A thorough promotional campaign is necessary to encourage the adoption of e-management and highlight its advantages. Citizens should be motivated to participate and interact with the system. National media

outlets—including radio, television, and newspapers—should actively participate in this campaign. Public discussions, conferences, and roundtable discussions involving officials, ministers, and employees should be organized to prepare the public to engage with the concept of e-management (Fidaa Hamid, 2015, pp. 224–225).

5. Stages of Transition from Traditional Management to E-Management

5.1. Active Traditional Management Stage:

This stage involves activating and improving traditional management systems while simultaneously beginning the implementation of e-management projects. At this stage, ordinary citizens should be able to complete their transactions easily without bureaucracy or delays. Meanwhile, individuals with personal computers or access to kiosks can view institutional and ministerial updates and announcements online, print required forms, and fill them out to facilitate transactions.

5.2. Active Fax and Telephone Stage:

This intermediary stage bridges the traditional management stage and the subsequent stage. During this phase, fax and telephone technologies are utilized effectively. Citizens can rely on widely available and affordable telephones to inquire about procedures, required documents, and conditions for completing transactions smoothly and easily. Fax machines can be used to send and receive

documents and forms. By this stage, a significant portion of the population will have heard of or experienced e-management, and key traders, administrators, and capable individuals can conduct their transactions via electronic networks. However, internet access during this phase may still be relatively expensive compared to fax and telephone services, limiting its use primarily to affluent individuals.

5.3. Active E-Management Stage:

At this stage, traditional management methods are phased out entirely. The percentage of internet users reaches approximately 25–30% of the population, with computers accessible either personally, through kiosks, or in public spaces at affordable prices. This accessibility enables all segments of society to utilize electronic networks for administrative transactions efficiently, at minimal cost, and with high levels of quality and effectiveness. Public opinion will have accepted and adapted to e-management, with users having learned how to operate within the system.

5.4. Steps for Successful Transition to E-Management

The roadmap for a successful transition to e-management involves ascending the following steps:

1. **Government Commitment:**
Ensuring the seriousness of governmental efforts.
2. **Scientific Application:**
Guaranteeing accurate and proper

implementation of e-management practices.

3. **Practical Evaluation:** Assessing practical applications and their outcomes.
4. **Performance Improvement:** Enhancing the level of administrative performance.
5. **Outstanding Services:** Providing high-quality and distinctive services.
6. **Community Satisfaction:** Achieving the satisfaction of society as a whole (Fidaa Hamid, 2015, pp. 243–245).

6. The Reality of E-Management in Algeria

Before addressing the obstacles facing e-management, it is necessary to examine a practical model of e-management implementation in Algeria. Like other nations, Algeria has worked to enhance the performance of administrative services through the use of computers, communication technology, and software technology, benefiting from the advancements of the technological revolution.

6.1. Examples of E-Management Applications in the Higher Education and Scientific Research Sector

In the context of improving administration and modernizing the higher education and scientific research sector, Algeria has aimed to establish a contemporary administrative model that aligns with the demands of the higher education and research sector. Focusing on technological

advancements, particularly in information and communication technologies as pillars of e-management, Algeria has implemented several innovative administrative models. These include:

1. E-Learning and Virtual Universities

The introduction of virtual education platforms as a means to provide remote and flexible learning opportunities.

2. Distance Learning Platforms

The implementation of digital platforms that enable students to access lectures, assignments, and educational resources remotely.

3. University Registration Platforms

These platforms allow for online student enrollment, streamlining administrative processes and reducing bureaucracy.

4. E-Recruitment Platforms

Digital platforms that facilitate online job applications and recruitment processes within the higher education sector.

5. PROGRES Platform

The PROGRES platform is a comprehensive electronic system designed to manage all university affairs. Its functionalities include administrative management, student records, academic progress tracking, and more.

6. Moodle Platform for Distance Learning

Moodle is an open-source educational platform that offers numerous features:

- **Free Access:** The platform is free for users.
- **Sharing Lectures and Information:** Facilitates sharing of lectures and information related to schools and universities.
- **Online Examinations:** Enables students to take exams electronically.
- **Virtual Community:** Includes a virtual community where users can exchange ideas, start scientific discussions, and send messages among members.

7. Scientific Journals Platform

This platform consolidates various Algerian national and international scientific journals. It serves as a link between publishers and authors, enhancing the accessibility of research publications.

8. Distance Training Platform for Newly Recruited Professors

Distance training has become a significant component of modern education, evolving rapidly in recent years. It plays a vital role in ensuring education quality by leveraging advancements in information and communication technologies.

In this regard, the University of Mentouri Brothers in Constantine was tasked with providing distance training for newly

recruited professors. This training involves:

- Participation in electronic training programs requiring the use of computers and various multimedia tools.
- Utilizing the internet as an interactive environment for training.
- Interactive communication between trainers and trainees through digital programs and diverse sources.

The training process includes:

- **Designing Distance Learning Lessons:** Using the Moodle platform.
- **Creating Mind Maps:** Through software like VUE.
- **Developing Lessons:** Using electronic course-building tools such as MOOCs (Massive Open Online Courses) and the EDX educational platform.

Advantages and Benefits of Distance Training Platforms for Newly Recruited Professors

Distance training platforms offer numerous advantages and benefits to newly recruited professors, enhancing their efficiency and improving their professional performance. The key benefits include:

1. Flexibility in Access and Learning:

Distance training allows professors to learn from any location and at any time, facilitating the integration of training with their busy schedules.

This is particularly beneficial for new professors who may face challenges in adapting to their responsibilities.

(Source: Seminar on Training Newly Recruited Professors, University of Algiers 3, 2024/12/3, 17:09, <https://www.univ-alger3.dz>)

2. Enhancing Pedagogical Competencies:

Online training improves teaching skills by focusing on the use of modern educational technologies, such as information and communication technology, contributing to the overall quality of teaching.

(Source: Study on the Role of E-Training in Improving University Professors' Performance, University of Adrar, 2024/12/3, 17:09, <https://dspace.univ-adrar.edu.dz/jspui>)

3. Development of Personal and Professional Skills:

Training programs emphasize the development of planning, time management, and effective communication skills, which help boost the self-confidence of new professors and improve their performance inside and outside the classroom.

(Source: Training Programs to Enhance Pedagogical Competencies, University of Tlemcen, 2024/12/3, 17:09, <https://www.univ-tlemcen.dz>)

4. Cost and Logistics Savings:

Distance training reduces transportation and accommodation

costs while efficiently utilizing digital resources, making it an economical and sustainable solution.

(Source: Seminar on Training Newly Recruited Professors, University of Algiers 3, 2024/12/3, 17:09, <https://www.univ-alger3.dz>)

5. Encouraging Interaction and Collaboration:

Digital platforms create a collaborative environment where professors can exchange experiences and information with colleagues and trainers. This fosters knowledge sharing and the establishment of effective professional networks.

(Source: Training Programs to Enhance Pedagogical Competencies, University of Tlemcen, 2024/12/3, 17:09, <https://www.univ-tlemcen.dz>)

6.2. Challenges to the Implementation of E-Management in Algeria

Despite having a comprehensive strategy for transitioning to e-management, its successful application faces numerous obstacles and challenges, including:

1. Political Instability:

Political uncertainty can lead to disruptions in e-management initiatives, or in some cases, shift their focus entirely. This poses a significant threat to the success of such projects.

2. Insufficient Financial Resources:

A lack of necessary funding, especially during times of reduced government revenue, can hinder the implementation of e-management initiatives.

3. Delays in Legal and Regulatory Frameworks:

Intentional or unintentional delays in establishing the necessary legal and regulatory structures can impede the execution of e-management strategies, which rely on such frameworks.

4. National Disasters and Regional Conflicts:

Events such as regional conflicts can disrupt infrastructure, delaying or derailing the implementation of e-management strategies.

5. Societal Resistance:

A lack of readiness among the public to embrace the concept of e-management, coupled with socio-economic crises, particularly if the transition is financially burdensome, can hinder acceptance and adoption.

6. Inadequate ICT Capacities:

Insufficient local capabilities in the ICT sector, or a lack of international support for government efforts in implementing e-management applications, can impede progress. Additionally, a lack of skilled personnel presents a significant challenge.

(Source: Fidaa Hamid, 2015, pp. 235–236)

7. Excessive Bureaucracy, Lack of Accountability, and Corruption:

Strict bureaucratic practices, administrative negligence, and widespread corruption are major barriers to the successful application of e-management in Algeria.

8. Digital Illiteracy and Staff Inefficiency:

Digital illiteracy, or the digital divide, is one of the primary issues facing e-management in Algeria. According to "Strausman," the misconception that technology is a solution to all problems overlooks the need for intelligent human resources capable of transforming data into usable forms.

Therefore, administrative reform is essential. E-management cannot succeed without addressing issues such as administrative corruption, negligence, and favoritism, which contradict the principles of e-management.

Conclusion

E-management represents a new approach among contemporary administrative philosophies. It is a product of qualitative advancements driven by modern communication technologies and the growing need to use these technologies to manage relationships between individuals, employees, students, citizens, and institutions. The application of e-

management in Algerian universities aims to completely modernize management processes to ensure high-speed execution of academic tasks while effectively leveraging e-management technologies.

- *Study on the Role of E-Training in Improving University Professors' Performance, University of Adrar, Accessed on 2024/12/3 at 17:09: <https://dspace.univ-adrar.edu.dz/jspui>*

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