

Decision-Making in the Digital Age: A Sociological Reading of Power and Information Relations

Bouaffane Amina *

¹ Martyr Sheikh Larbi Tebessi University, Tebessa (Algeria), amina.bouaffane@univ-tebessa.dz

Received: 17 / 10 /2026

Accepted: 10 / 12 /2026

Published: 05 /05 /2026

Abstract:

The digital era has transformed decision-making from its traditional administrative role which relied on experience and hierarchical structures into a sophisticated process that operates within a digital information network and power system. The transformation has established new relationships between knowledge and power within organizations because data algorithms and artificial intelligence systems now perform essential roles in decision-making processes and behavioral control systems for people and groups. Organizations and groups in society have established new power structures which control information flow and interpretation for their strategic benefit. The ability to control information flow and interpret it has become a crucial factor for people and organizations to achieve higher power status because information functions as a strategic resource which creates and maintains power relationships .

This research paper analyzes the core changes which digital advancements have brought to institutional and societal decision-making systems. The research aims to understand sociological aspects of these changes by investigating how digital transformation affects organizational decision-making and what new power structures arise from digital information control.

Keywords: Digitalization; Decision-Making; Power Structures; Digital era.

I- Introduction:

Modern management faces major obstacles because of the scientific and technological revolution which has transformed all areas of work. The revolution has brought about complex managerial duties because decision-making functions as the core of administrative operations which generate organizational performance and employee contentment and institutional targets. The digital revolution has become a core power which drives economic and social system changes because work environments now serve as primary locations for major organizational shifts. Organizations face a new decision-making system because intelligent technologies and algorithms and big data analytics have become essential for operational management. The selection of decisions which previously depended on human experience and intuition and organizational ranking systems now depends heavily on artificial intelligence suggestions and automated performance metrics from advanced digital systems.

The core research question of this study reveals multiple sociological problems which extend past technical aspects to address core social connections between workers at their workplace. They prompt reflection on questions such as:

- The growing use of machines for decision-making has transformed the responsibilities of human employees and their leaders in the workplace.
- Digital objectivity creates barriers which restrict human beings from exercising their full level of autonomy.
- The digital transformation has created decision-making equality for people, but it established new surveillance methods which produce a modern form of authoritarian rule.

The examination of decision-making in the digital age offers two primary advantages: it elucidates the transformative processes within organizations and highlights the symbolic and ethical dimensions that arise during these transitions. The study will employ descriptive-analytical methodologies to examine the effects of digital transformation on professional identities, leadership paradigms, and power dynamics within contemporary organizations.

The research will study how digital transformation and artificial intelligence affect leadership roles and human labor within institutions by studying the shift in leadership behavior and accountability in organizations that rely on algorithms. The research will investigate human decision freedom in a society which bases all choices on data and algorithmic systems. The research will assess digital systems for their ability to enable wide participation in decision-making through their transparency levels and inclusion mechanisms and fairness standards. The study will examine how digitization creates new systems of control through concealed monitoring systems and data-based behavioral control techniques. The research will establish methods to achieve technological growth which protects human moral principles.

II- Fundamental Concepts of Research:

1. Decision-Making:

A decision is defined as “a choice made in light of the available alternatives” (Abuway, 2006); it is therefore the process of selecting among two or more options.

Landberg describes administrative decision-making as a process which allows one person to make decisions that affect the actions of organizational members who work together to reach organizational goals (Ahmed & Adel, 2009).

According to Al-Sabbab, the decision-making process is “a method of conduct,” adding that it is “a selection among a number of alternatives to produce an effect and achieve a result” (Ahmed & al., 2005).

The decision-making process extends past basic selection by leaders because it requires them to identify problems and develop potential solutions and evaluate options and pick the best solution and monitor its implementation. Thus, it is an active process that requires engagement both before and after the choice itself.

According to (Ahmed & Adel, 2009) decision-making involves individual or group actions which lead to choosing the best option for a given situation (Modern Management: Theories, Strategies, and Contemporary Models). The decision-making process constitutes a fundamental stage in the decision process.

The digital era requires decision-makers to follow a structured approach which involves collecting large amounts of data and analyzing it through artificial intelligence systems and cloud computing technology and analytical tools by either single decision-makers or group-based decision teams. Organizations need to select the best course of action in a changing environment through transparent processes which meet ethical standards and remain adaptable to change.

Digital decision-making in organizations operates through the integration of information technology tools with big data systems and algorithms and decision support systems to analyze fast-changing environments for selecting the best option while maintaining efficiency and ethical standards and transparency (Hrynychak & Horobets, 2024).

The definitions above demonstrate how decision-making has evolved through digital transformation because they show how modern technologies like big data and algorithms play essential roles. The definitions include both technical aspects of tools and methods and ethical considerations of transparency and moral principles which make them suitable for modern administrative settings. The systems demonstrate the need for human involvement to monitor automated decisions because they do not operate at full automation which makes people essential to prevent the false belief that machines handle all decision-making processes.

2. Concepts Related to the Notion of the Digital Age:

2.1 Digital Transformation:

According to Chalmo, Williams, and Boardman (2020), as well as Verhoef et al. (2021), digital transformation refers to the use of digital technologies to analyze and integrate large volumes of collected data into actionable information for evaluation, decision-making, and the development of new digital business models that enable firms to create value, enhance performance, and generate impact (Yongzhang & Changqi, 2022).

Digital transformation represents the complete or partial organizational shift which makes business operations dependent on digital tools and equipment and software systems. The main objective requires organizations to speed up service delivery while maintaining quality standards and building management systems which operate independently of location and time to enhance customer access and decrease operational expenses and procedures.

2.2 Cloud Computing:

Cloud computing offers users immediate access to networked computational resources which deliver integrated computing services that enhance user experience. The system provides data storage and backup functions along with self-synchronization capabilities and software processing features and task scheduling and email delivery and remote printing services. The user gains access to resource control through a basic programming interface which hides numerous technical details and operational processes of the system when networked.

2.3 Algorithms:

Algorithms serve as technological frameworks which operate as social systems that mirror the prejudices existing in social organizations while creating new ethical problems about technological fairness and moral conduct (Shaker, 2025). Algorithms function as sets of rules which process data through computational procedures to produce automated decisions that shape social conduct and human connections and power distribution and discriminatory patterns in communities .

Organizations and people must base their decisions on algorithms which process digital and human data through a series of logical and technical steps to produce results that shape social behaviors and human relationships (sociological perspective). The authors present how technology functions within social systems through its impact on power distribution and discriminatory elements and access to resources.

2.4 Automation:

Automation stands for the method which replaces human-operated tasks with automated systems and digital technologies to perform those functions (2.4 Automation). The transformation causes major shifts in how work gets done and how people interact within organizations and society at large (Braverman, 1974).

The process of automation involves using technical systems and machines to perform tasks which remove the need for human labor (according to the definition). When old systems are replaced by new ones, it changes how society is organized, which in turn changes how people work, how society works, how the economy works, and how culture works. To put it another way:

- Automation functions as a mechanical process to execute tasks through automation systems but it also operates as a social development which transforms workplace activities and organizational power distribution and human social relationships.
- Automation transforms the way people perform their work tasks. The process has the potential to eliminate certain job positions while creating new work arrangements that differ from current employment standards.

III- Theoretical Approaches Explaining the Decision-Making Process in the Digital Age:

The topic under investigation belongs to the sociology of knowledge and information because multiple scholars have studied this field through various intellectual methods. The research aims to study digital decision-making processes through sociological and philosophical theories which explain power-technology-knowledge relationships while studying social structure changes from algorithmic system implementation.

1. Michel Foucault: Algorithmic Power as an Extension of Social Control (Focault, 1977)

Through his studies Foucault demonstrated how power operates as an unseen system which runs through knowledge institutions and surveillance systems. Foucault's concepts can be applied to algorithms because they use indirect surveillance and automated categorization to control human behavior while people remain unaware of their power dynamics.

The digital systems establish a form of self-management which operates as an automated control system that governs human behavior.

2. Jürgen Habermas: The “Absence of Communicative Rationality” (Habermas, 1984)

Habermas argues that democratic systems base their core on rational dialogue and open participation which leads to decision-making processes. Digital systems operate through closed systems which prevent any form of discussion or breakdown thus denying genuine involvement of social participants in the process. Automation systems function to reduce public sphere activities which leads to a decrease in transparency levels.

Habermas developed a theoretical framework based on communicative rationality which establishes that valid decisions must include the following elements:

- Transparent dialogue,
- Participation of all stakeholders,
- Equal access to information, and
- Freedom from symbolic coercion.

The absence of communication within algorithms results from their operational nature which transforms human interaction into automated data exchanges between points thus blocking democratic understanding.

Habermas argues that technical rationality needs to be counterbalanced by communicative rationality because this balance creates authentic decisions.

3. Manuel Castells: Networks as a New Domain of Decision-Making

Castells introduces the concept of the “network society,” in which power is exercised through interconnected digital structures rather than centralized hierarchies. The decision-making process in modern digital environments involves intricate systems that connect data with algorithms and institutional bodies which results in dispersed authority and multiple responsible entities (Castells, 1996).

Castells describes power distribution in his network society theory through digital networks which extend beyond traditional central authority because they enable network builders to control information and establish rules for network participation (Castells, 1996). The decisions made within such structures carry elements of power that define who participates, who observes, who merely uses the system, and who holds or lacks information .

Information does not exist in a neutral state because control over it remains with those who possess the ability to create and manipulate it. Decision-making exists as a multi-actor network process which involves the flow of information between various participants.

4. Bruno Latour: The Partnership Between Humans and Machines

According to Actor-Network Theory (ANT), technology—such as algorithms—functions as more than basic tools because they operate as active participants inside social networks. People in today's society make decisions through their own thinking and their interactions with digital systems that produce results and influence their actions (Latour, 2005). Latour's theory establishes algorithms and data and technical systems as decision-making actors because it grants them the ability to influence and participate in choices which were once exclusive to human decision-makers. Digital decision-making involves a system which connects human beings to non-human entities that influence social rules and knowledge and directions. The power extends beyond decision makers because it includes people who manage digital systems and create algorithms and handle data ownership. The research demonstrates that decision-making emerges from human-machine collaboration.

- Synthesis of Theories: These theoretical frameworks explain that decision-making has evolved beyond human control according to Foucault and Latour; and Habermas explains that decision-making does not follow his model of dialogue and participation. According to Castells, decision-making no longer emanates from a single center of power but from interconnected networks of data and algorithms.

Collectively, these theories address key questions such as:

- How do algorithms affect the autonomy of decision-makers?
- Who holds power within automated systems?
- Can non-human agents (machines) be held accountable for their decisions?

IV- Transformation of the Decision-Making System in the Digital Era:

The traditional operations of businesses and government offices experience major changes because of digital transformation. The system transformation leads to instant modifications in the way an organization makes its decisions. Organizations apply AI and smart systems to analyze large data volumes because these systems produce more accurate results than human analysts. Organizations that begin digital transformation initiatives need to change their operational management systems because this process extends beyond technological solutions. The present decision-making system operates through three essential elements which include fast processing systems and clear operation systems and participant active participation. Business leaders need to understand this transition completely to make successful digital period decisions.

1. Dimensions of the Transformation in the Decision-Making System under Digitization:

The system for making decisions experiences a thorough change that greatly affects its intellectual, structural, and technological aspects. The most vital elements that summarize these dimensions are as follows:

1.1 The Informational Dimension:

The advent of digitalization has revamped the entire informational framework for those in leadership roles, transforming both the quantum and attributes of the details they necessitate. Entities now gather up-to-the-minute data, which is then handled by artificial intelligence and machine learning platforms for assessment. Judgments made by establishments are predicated on scrupulous data analytics, superseding both gut-feeling resolutions and established techniques for garnering awareness. ([Abdel Hamid, 2021](#)).

Accordingly, the informational dimension contributes to:

- The change from having too little data to having too much.
- The fact that decisions are based on digital databases that are updated in real time.
- The creation of quantitative and qualitative analytical instruments that assist decision-makers, enhancing decision quality and reducing the margin of error.

1.2 The Technological Dimension:

This change is mostly due to technology, which includes tools like decision support systems, artificial intelligence, and predictive analytics that let people try out different scenarios and improve the results of administrative decisions ([Ahmed, 2022](#)).

This dimension underscores the importance of incorporating advanced tools such as:

- Artificial Intelligence (AI)
- Machine Learning (ML)
- Predictive Data Analytics
- Cloud Computing Technologies

- Decision Support Systems (DSS)

These parts help automate some decisions and cut down on the time it takes to process and analyze data.

1.3 The Organizational and Administrative Dimension:

Because of digitization, organizations and institutions have had to change how they are set up. Institutions have increasingly embraced digital governance and workflow automation, alongside expediting the decision-making process to better adapt to the swift transformations in the workplace (Ali, 2020).

This dimension brings out the following points:

- Changing administrative systems to fit with digital transformation
- Making digital governance and electronic oversight stronger
- Using participatory digital platforms to make group decision-making models work
These steps together make managers more efficient and better able to respond to changes in the environment.

1.4 The Human and Cognitive Dimension:

According to (Noha, 2021), the pervasiveness of digital alteration has rendered proficiency in technology and digital expertise indispensable for individuals in leadership roles. The efficacy of resolutions now hinges not solely on intuition and past involvement but progressively on the aptitude to decipher and scrutinize data, along with the competent utilization of digital platforms. This facet underscores:

- The imperative of educating and accrediting personnel in the effective application of digital instruments.
- The significance of nurturing skills in analytical reasoning and the elucidation of data.
- The emergence of novel vocational opportunities within the sector, including roles such as data scientists, AI experts, and information systems architects.
- Collectively, these elements foster an organizational ethos rooted in erudition and a persistent pursuit of enhancement.

1.5 The Security and Ethical Dimension:

Digital transformation brings up problems with data privacy, information security, and the ethics of AI. As a result, it is now necessary for the decision-making process to include security and regulatory factors in order to protect the accuracy and legality of information use (Qasim, 2022).

This dimension stresses the following:

- Protecting private information while it is being collected, sent, and processed.
- Following rules about privacy and openness.
- Making rules about how technology can be used to make decisions.

- These kinds of steps can help people trust digital systems more and lower the risks of cyberattacks.

1.6 The Strategic Dimension:

Digitization has brought advanced tools for future forecasting which enables organizations to analyze upcoming trends and changes for developing strategic plans based on data and predictive models. This method improves the effectiveness of long-term strategic decisions according to (Hassan, 2020).

From this dimension, it can be concluded that there is a need to:

- Advanced analytics should be used to back long-term strategic choices.
- Predictive models need to be used for developing upcoming policy frameworks.
- Leaders must develop abilities to forecast new trends and identify potential threats .

The dimension allows organizations to create better decisions by using precise predictions about market and environmental changes.

1.7 The Temporal Dimension:

The adoption of digital technology has enabled organizations to speed up their decision-making process by linking real-time systems with instant data integration which helps them react swiftly to new opportunities and risks (Mohammad, 2021).

This core element brings about the following key advantages:

- The system changes the traditional decision-making process which used to take time into a system that make decisions instantaneously.
- The institution creates faster responses to problems through quicker decision-making which helps the organization adapt to new opportunities and changing circumstances.

1.8 The Participatory Dimension:

Digital tools and platforms now enable stakeholders including employees and public participants in government sectors to join decision-making activities through systems which boost openness and social monitoring capabilities (Jamila, 2023).

The dimension which represents participation or democracy becomes effective when it produces better decisions and higher public support through its operational functions.

- Digital platforms enable organizations to get their stakeholders and community members involved in decision-making processes.
- People can see everything clearly when society holds itself responsible for its actions.

The analysis shows that digital transformation dimensions reach every part of the decision-making system because they include data and technology and human elements and management. The dimensions work together to create the basic structure for making good decisions which help organizations handle digital age problems because this period has fundamentally changed how decisions happen and how institutions and societies interact with each other. The decision-making process now operates independently from human skills and professional judgment because it has evolved through algorithmic systems and large-scale data analysis.

The technological dimension enables artificial intelligence and predictive models to perform quick and exact decisions through pattern and variable analysis which surpasses human cognitive abilities. The administrative and organizational dimension has brought about changes in institutional roles because digital and analytical tools now determine leadership instead of personal experience.

Digital "black boxes" have created new transparency and accountability issues because their decision-making processes and algorithms remain hidden from public view. The digitization process has brought about new concerns about fair information distribution because of major corporations controlling technical expertise which might lead to new power structures.

The digital revolution has transformed decision-making tools and value systems which control them so organizations must perform a full ethical evaluation of their decision-making practices for the digital age.

2. Ethics of Decision-Making in the Digital Era:

The decision-making system undergoes a transformation during digitization which creates fresh ethical challenges for decision processes. These two ethical systems differ because they take opposing stances about technical performance and human accountability. Organizations use predictive models which analyze numerical data to direct their essential business decisions. The problem exists because data and algorithm biases have become an established reality which creates social injustice that increases existing social gaps .

The present conditions require immediate establishment of ethical principles which will function as operational standards for technology applications to safeguard user rights through transparent operations and unbiased decision evaluation methods. The article discusses how human monitoring stays essential for smart systems because it protects ethical standards when technology advances.

3. The Role of Algorithms and Intelligent Systems in Guiding Business Decisions:

The current business decision-making process relies heavily on algorithmic systems which produces major social effects that change organizational teamwork and human-machine system interactions. The original function of algorithms as data analysis tools and efficiency improvement systems has been replaced by their active role in workplace decision-making which determines how authority gets distributed. Organizations use these systems to evaluate candidates and select personnel while sometimes they help create organizational policies. The implementation of technical systems which operate without bias has resulted in changes to power dynamics and social guidelines .

Organizations encounter two main obstacles because of algorithmic decision-making expansion because these systems operate in ways that remain hidden to users and there exists no accountability system for their decisions. The process of staff members trying to understand algorithmic decisions and challenge them creates a power imbalance which strengthens supervisory control over their employees. The systems produce structural biases because they use available data and their programming reflects particular definitions of success and operational efficiency. Sociological analysis needs to study technical language about these tools because it shows how they reshape social power structures inside organizations while creating new supervision systems which go beyond human control and affect work ethics and professional standards .

The process of business decision-making through algorithms requires more than technical knowledge because it needs understanding of social systems and values which these systems duplicate. The assessment of these systems by employees requires their participation in organization-wide discussions about system limitations and impacts.

V- Conclusion:

Foucault's theory of "power-knowledge" and Castells' theory of the "network society" provide sociological foundations that show decision-making processes in the digital age have evolved beyond rational information-based methods. The system has grown into a complicated web that combines technology with social structures, moral rules, and economic systems. The digital revolution has many advantages for operational accuracy, but it also makes it much harder to keep operations clear and make sure everyone is treated fairly and held accountable. The digital period requires technical systems which must work together with moral frameworks to shield human necessities from being surpassed by technological progress.

Study Recommendations:

This research paper highlights the inherent tension between transparency and democracy on the one hand, and covert control and algorithmic guidance on the other. The conflict between these two systems creates major ethical and social problems which include the most important ones listed below :

- The development of algorithms and artificial intelligence systems with complete transparency serves to help people and organizations understand digital decision-making processes and their basis for selection .
- The establishment of moral and legal responsibilities for automated decision errors needs to define who bears responsibility for such errors .
- The human element needs to be incorporated into digital decision-making systems because intelligent systems should not handle decisions independently and human involvement must continue for review and evaluation especially when making decisions that affect ethical and humanitarian aspects .
- The practice of algorithmic bias reduction requires training algorithms through various datasets which must undergo regular bias detection and correction procedures .
- The promotion of digital awareness and competency development requires organizations to provide training for decision-makers and employees about algorithm operations and their effects to help them use digital tools responsibly .
- The modern legal and regulatory systems require updates through the creation of new laws which protect citizens from unfair automated choices that result from digital progress and data privacy violations .
- The development of pluralistic technology requires experts from different backgrounds to work together including social, psychological, legal and technical professionals for digital system design that balances efficiency with fairness .
- The development of digital skills needs to happen for leaders and decision-makers while organizations must purchase intelligent systems and protect their information and data from breaches .
- Institutions need to implement complete digital governance policies .
- Organizations need to establish an environment which supports both innovation and organizational flexibility.

Referrals and references:

- Abdel Hamid, L. (2021). Digital Transformation and Its Impact on Improving the Quality of Administrative Decision-Making. *Arab Journal of Management*.
- Abuway, Z. M. (2006). *Modern Trends in Administrative Organizations*. Jordan: Dar Al-Shorouk.
- Ahmed, A. (2022). *Artificial Intelligence and Decision-Making in Institutions*. Dar Al-Fikr.
- Ahmed, A., & Adel, S. (2009). *Modern Management: Theories, Strategies, and Contemporary Models*. Amman: Alam Al-Kutub.
- Ahmed, A., & al., e. (2005). *Fundamentals of Modern Management*. Saudi Arabia: Dar Khwarizm.
- Ali, A. (2020). *Digital Management and Modern Governance*. Qatar: Arab Center for Research.
- Braverman, H. (1974). *labor and monopoly capital: the degradation of work in the twentieth century*. new york: monthly review press.
- Castells, M. (1996). *the rise of the network society*.
- Foucault, M. (1977). *discipline and punish*.
- Habermas, J. (1984). *the theory of communicative action*.
- Hassan, A. (2020). *Predictive Analysis in Strategic Planning*. Arab Institute for Planning.
- Hrynchak, N., & Horobets, O. (2024). the influence of digitalization on the managerial decision in international business. (2, Ed.) *Statistics of Ukraine*, 105.
- Jamila, B. (2023). Digital Transparency and Participation in Decision-Making. *International Journal of Public Administration*, 92.
- Latour, B. (2005). *reassembling the social*.
- Mohammad, Y. (2021). *Real-Time Technology and Instant Decision-Making*. Cairo: Faculty of Economics, Cairo University.
- Noha, A. (2021). Digital Competencies in the Contemporary Work Environment. *Journal of Digital Economy*.
- Qasim, A. (2022). Information Security and Digital Transformation. *Journal of Technology and Society*.
- Shaker, A. (2025, 09 15). *What Are the Virtual Social Theories in Digital Sociology*. Retrieved from e3arabi.com.
- Yongzhang, P., & Changqi, T. (2022). Can digital transformation promote enterprise performance? from the perspective of public policy and innovation. *journal of innovation and knowledge*.