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CONTEMPORARY MANAGEMENT UNDER MONETARY AND TECHNOLOGICAL TRANSFORMATION: KNOWLEDGE, HUMAN CAPITAL, ENTREPRENEURSHIP, ARTIFICIAL INTELLIGENCE, AND THE FUTURE OF DIGITAL FINANCE

Abstract. This article examines the transformation of contemporary management under conditions shaped not only by knowledge intensity, human capital development, entrepreneurship, artificial intelligence, and sustainability pressures, but also by profound changes in money, finance, and digital value architectures. Its central thesis is that management today can no longer be understood exclusively through the classical functions of planning, organizing, leading, and controlling. Instead, it must be reinterpreted as an integrative practice operating within a technologically mediated and financially transformed environment in which digital platforms, fintech systems, crypto-assets, algorithmic decision-making, and new forms of monetary organization increasingly influence organizational strategy and governance. The paper combines the reconstruction of major management concepts known from canonical textbooks with a synthetic interpretation of studies on knowledge management, human resource management, entrepreneurship, artificial intelligence, value creation, financial innovation, blockchain, digital money, and sustainable development. It argues that the emerging paradigm of management is defined by the need to coordinate organizational intelligence, human capabilities, entrepreneurial initiative, technological infrastructures, and financial transformation within a broader horizon of regulatory responsibility, institutional trust, and long-term sustainability. The article concludes that the future of management depends increasingly on the ability to integrate internal organizational capabilities with the changing logic of money, finance, technology, and governance

Keywords: management; digital finance; fintech; digital money; blockchain; artificial intelligence; human capital; knowledge management; entrepreneurship; sustainable development
JEL classification: M10, M12, M13, G20, G28, O33, Q01

Introduction

Contemporary management is undergoing a transformation of unusual depth and scope. For a long time, the central concerns of management theory were associated with the organization of work, the coordination of resources, the achievement of efficiency, and the attainment of strategic goals within relatively stable institutional and economic environments. Even in its more dynamic forms, management was still often interpreted through the language of planning, organizing, leading, and controlling, supported by models of decision-making, organizational structure, and leadership behavior (Robbins and Coulter 2020; Daft 2016; Jones and George 2020; Schermerhorn and Bachrach 2023). These foundations remain indispensable. Yet they are no longer sufficient for understanding the conditions under which contemporary organizations operate. The environment of management has changed profoundly. Organizations today act within a world shaped by datafication, financial innovation, digital infrastructures, intelligent automation, sustainability pressures, platform logics, and a growing transformation of money itself.

This last point requires special emphasis. Much contemporary reflection on management rightly highlights the significance of knowledge, human capital, innovation, entrepreneurship, and artificial intelligence. However, less often is equal attention paid to the fact that organizations increasingly function within a rapidly changing monetary and financial environment. Fintech systems, blockchain-based infrastructures, crypto-assets, new payment technologies, tokenized value systems, and digitally mediated forms of exchange are reshaping the external conditions of organizational action and, increasingly, its internal logic as well (Prasad 2021; Allen 2022; BIS 2018; De Filippi and Wright 2018). Management can therefore no longer be interpreted exclusively as the coordination of labor and resources within the firm. It must also be understood as a response to a transformed financial environment in which technological mediation affects not only communication and knowledge flows, but also

value creation, monetary trust, financial intermediation, regulatory risk, and strategic decision-making.

For this reason, the present article argues that contemporary management is being reshaped simultaneously by two intertwined processes. The first is the already widely recognized transition toward knowledge-intensive, human-capital-based, innovation-driven, and AI-supported forms of organization. The second is a less frequently integrated but increasingly decisive process: the transformation of money, finance, and digital value architectures. Together, these two developments alter the horizon within which management must now be conceptualized. The manager no longer operates only in relation to organizational resources, personnel, and market competition. The manager increasingly acts in an environment influenced by digital finance, algorithmic systems, blockchain governance, financial instability, sustainability constraints, and changing forms of institutional trust. Contemporary management must therefore be reinterpreted as an integrative practice situated at the intersection of organizational intelligence and monetary-technological transformation.

The central thesis of this article is that management in the contemporary world is evolving from a predominantly function-based and control-oriented model toward a broader paradigm grounded in knowledge, human capital, entrepreneurship, artificial intelligence, financial transformation, and sustainability-oriented governance. This transformation does not abolish the classical framework of management. Rather, it extends and redefines it under more complex historical conditions. Planning today increasingly involves predictive analytics and financial uncertainty. Organizing now includes knowledge infrastructures, digital networks, and technologically mediated value processes. Leading requires not only coordination and motivation, but also the ability to guide organizations through volatility, technological acceleration, and changing regulatory environments. Controlling, similarly, becomes linked not merely to supervision, but to feedback systems, data-driven decision architectures, and systemic risk awareness (Daft 2016; Schermerhorn and Bachrach 2023; Allen 2022).

The main research question may therefore be formulated as follows: how should contemporary management be reinterpreted under conditions of technological and monetary transformation shaped by digital finance, artificial intelligence, blockchain, and sustainability pressures? This overarching question is further developed through several more specific issues. First, to what extent do the classical theories of management remain conceptually adequate when organizations operate in financialized and digitally mediated environments? Second, how do knowledge management and human capital function as the internal strategic infrastructure necessary for adaptation in an age of intelligent finance and digital money (Staniewski, "Zarządzanie wiedzą: od koncepcji do praktyki działania," 35-48; Staniewski, "Zarządzanie wiedzą w przedsiębiorstwach - przegląd badań"; Staniewski, "The Elements of Human Resources Management Supporting Knowledge Management," 283-291; WEF 2020)? Third, how should entrepreneurship be understood when value creation increasingly occurs through relational, communicative, and technologically mediated systems, including platforms, machine learning, and blockchain-based innovation (Staniewski and Awruk; Staniewski, Awruk, Leonardi, and Słomski 2024; Costa-Climent, Navarrete, Haftor, and Staniewski 2024; Tapscott and Tapscott 2016)? Fourth, what are the managerial implications of artificial intelligence and fintech for value appropriation, organizational learning, and financial governance (Estrada, Park, and Staniewski 2023; Costa-Climent, Haftor, and Staniewski, *Intelligent Transformation*; Prasad 2021; Allen 2022)? Finally, how should management respond to the ethical, regulatory, ecological, and developmental problems generated by digital finance and new forms of money, especially in relation to sustainability, institutional trust, and long-term social responsibility (Bekun et al.; Alonso Dos Santos, Huertas González-Serrano, and Staniewski 2022; de Vries et al. 2022; Regulation (EU) 2023/1114)?

The aim of the article is therefore not merely descriptive. It is to reconstruct a more adequate paradigm of contemporary management by showing that management today must be interpreted in a field where organizational capability, technological systems, financial transformation, and

normative responsibility intersect. The article seeks to demonstrate that the most adequate contemporary model of management must integrate at least six dimensions: the classical functions of management; knowledge and organizational learning; human capital and innovation capacity; entrepreneurship and value creation; artificial intelligence and financial-technological mediation; and the broader horizon of sustainability, governance, and monetary transformation. Only such an integrative model can adequately explain how organizations act under conditions in which the very meaning of value, exchange, and strategic control is being transformed.

The scope of the analysis requires explicit justification. The literature used in this article consists of two broad groups of sources. The first includes major American management textbooks and studies on knowledge management, human resources, entrepreneurship, artificial intelligence, and sustainability. These works provide the conceptual basis for reconstructing management as an evolving organizational paradigm rather than a static administrative technique (Robbins and Coulter 2020; Daft 2016; Jones and George 2020; Schermerhorn and Bachrach 2015; Schermerhorn and Bachrach 2023; Griffin 2021; Kinicki and Williams 2018; Williams 2018; Drucker 1974; Staniewski, "Zarządzanie wiedzą: od koncepcji do praktyki działania"; Staniewski, "Zarządzanie zasobami ludzkimi a zarządzanie wiedzą"; Staniewski and Szopiński). The second group consists of selected works on fintech, blockchain, digital money, financial innovation, crypto-assets, financial stability, and the legal-governance architecture of digital finance. These texts broaden the field of analysis by showing that the contemporary transformation of management is inseparable from the transformation of money, trust, regulation, and technological mediation in finance (Prasad 2021; Allen 2022; BIS 2018; Narayanan et al. 2016; De Filippi and Wright 2018; Alvarez, Argente, and Van Patten 2022). Taken together, these two sets of literature make it possible to analyze management not only as a theory of organization, but also as a theory of coordinated action in a changing monetary-technological order.

Methodologically, the article adopts a theoretical-synthetic and interpretative approach. It does not aim to test a single empirical hypothesis in a narrowly quantitative sense. Rather, it seeks to reconstruct the emerging structure of a contemporary management paradigm by synthesizing insights from management theory, entrepreneurship studies, knowledge management, AI-related literature, digital finance, and broader reflections on value, regulation, and sustainability. This method is appropriate because the research problem is itself synthetic. The question is not whether one variable alone determines managerial effectiveness, but how different dimensions of organizational and financial transformation converge within a changing model of management. The procedure is therefore analytical insofar as it distinguishes the principal dimensions of change, and synthetic insofar as it brings them together into one conceptual framework.

Such a framework is increasingly necessary because management now operates in an environment where value is not only produced and exchanged, but also coded, tokenized, automated, and financially reconfigured. Digital finance transforms the mechanisms through which organizations gain access to capital, process transactions, organize trust, and interact with regulatory systems. Blockchain-based models challenge traditional intermediaries and raise new questions concerning governance, legal authority, and systemic stability (De Filippi and Wright 2018; Lessig 1999; Fuller 1969). Fintech promises efficiency and inclusion, yet also introduces new vulnerabilities connected with opacity, automation, and financial destabilization (Allen 2022; IMF 2021). Cryptocurrencies and other digital assets are often presented as innovations in monetary freedom, but they also raise unresolved questions concerning legal status, value volatility, environmental cost, illicit use, and public control over the monetary order (BIS 2018; Foley, Karlsen, and Putniņš 2019; de Vries et al. 2022; Stoll, Klaaßen, and Gallersdörfer 2019). For management, these developments are not marginal. They redefine the environment in which strategic decisions, organizational design, risk assessment, and value creation take place.

At the same time, the rise of digital finance should not be interpreted as a purely technical or narrowly financial process. It has anthropological, ethical, and political implications. Money is not merely an instrument of exchange; it is also a social institution, a medium of trust, and a mechanism of coordination within economic life. Transformations in money therefore affect the conditions under which organizations and societies understand agency, value, responsibility, and freedom. This is why the present article also recognizes that contemporary management cannot be adequately interpreted without attention to the broader normative horizon in which digital finance is embedded. The problems of freedom, control, decentralization, regulation, common good, and sustainability are all implicated in current debates on money and financial technology (Hayek 1976; Rawls 1971; Sen 1999; Franciscus 2015; Benedykt XVI 2009). Management under conditions of monetary-technological transformation is therefore not only a technical challenge. It is also a question of institutional and ethical orientation.

The structure of the article reflects this logic. The first section reconstructs the classical foundations of management and shows how they are transformed in a digitally mediated and financially changing environment. The second analyzes knowledge, organizational learning, and human capital as the strategic infrastructure of adaptive organizations. The third discusses entrepreneurship, value creation, and the relational dynamics of innovation in technologically mediated settings. The fourth turns to artificial intelligence, fintech, and the emergence of intelligent finance as a new managerial horizon. The fifth examines digital money, crypto-assets, and the governance of new financial systems. The sixth places these developments within the wider framework of sustainability, institutional quality, and the ecological and developmental limits of financial-technological innovation. In the conclusion, these strands are synthesized into a model of management that is adaptive, knowledge-based, financially aware, technologically literate, ethically responsible, and sustainability-oriented.

The argument of the article is therefore clear from the outset: contemporary management can no longer be understood adequately without ta-

king into account the changing nature of money, finance, and digitally mediated systems of value. If earlier managerial paradigms focused on the coordination of resources within relatively stable institutional contexts, the current moment demands a broader vision. Management must now integrate organizational intelligence with financial transformation, human capability with technological mediation, entrepreneurial initiative with governance, and strategic adaptation with long-term responsibility. This is the central challenge of management in the age of digital money.

Classical Foundations of Management and Their Transformation in a Financialized Digital Environment

Any serious analysis of management under conditions of monetary and technological transformation must begin with the classical foundations of the discipline. The contemporary organization still requires planning, organizing, leading, and controlling; it still depends on coordination, decision-making, and the effective use of resources; and it still operates through structured efforts aimed at achieving specific goals. In this sense, the conceptual core of management remains stable. The major textbooks of management continue to define the field through these fundamental functions and treat effectiveness and efficiency as the basic criteria of managerial action (Robbins and Coulter 2020; Daft 2016; Jones and George 2020; Schermerhorn and Bachrach 2023). Without this classical grammar, the discipline would lose its analytical coherence.

At the same time, the continued relevance of the classical framework should not obscure the fact that the environment within which these functions are now exercised has changed profoundly. Management no longer operates within a world defined primarily by relatively stable organizational hierarchies, industrial routines, and clearly bounded market structures. It increasingly unfolds within digitally mediated, networked, data-intensive, and financially transformed environments. This means that the classical functions remain necessary, but their practical content is no longer the same. Planning now takes place under conditions of accelerated

information flows and financial volatility. Organizing increasingly requires the coordination of knowledge infrastructures, digital platforms, and technologically mediated processes. Leading must address not only motivation and authority, but also uncertainty, innovation, and adaptation in complex systems. Controlling is increasingly shaped by real-time data, algorithmic feedback, and broader awareness of systemic and regulatory risk (Bateman, Snell, and Konopaske; Griffin 2021; Kinicki and Williams 2018; Williams 2018).

This transformation does not mean that the classical tradition has become obsolete. On the contrary, it becomes even more important as a point of comparison. The classical framework allows us to see more clearly what has changed. In earlier models, management was often interpreted primarily as the rational coordination of labor, capital, and organizational structure. Today, this remains true at a basic level, yet it is no longer sufficient. The organization must now manage not only resources in the traditional sense, but also information, knowledge, digital infrastructures, financial exposure, technological dependencies, and increasingly unstable environments of value exchange. The manager still allocates resources and defines priorities, but now does so within a setting where the very meaning of value, exchange, and coordination is being transformed.

This is precisely why Drucker's classic understanding of management remains so valuable. Management, for Drucker, was never merely administrative routine. It was a field of tasks, responsibilities, and practices that connected organizational performance with broader economic and social realities (Drucker 1974). That insight is especially useful today, because the transformation of money and finance makes management even more deeply embedded in a wider institutional environment. The contemporary manager does not simply supervise internal operations. The manager increasingly confronts questions concerning financial intermediation, strategic uncertainty, digital infrastructures, regulatory constraints, and the shifting architecture of trust. In this sense, the current transformation of management does not break with the deeper practical orientation of classical thought; rather, it radicalizes it.

The rise of a financialized digital environment is one of the most decisive elements of this change. Organizations no longer function only in relation to production, exchange, and competition in their conventional forms. They also act within a world increasingly structured by fintech systems, digitally mediated payments, algorithmic evaluation, platform-based coordination, and new forms of monetary and financial experimentation (Prasad 2021; Allen 2022). This development affects management at several levels simultaneously. First, it alters the temporal horizon of decision-making by accelerating transactions, information processing, and responses to market change. Second, it modifies the architecture of intermediation, since organizations and individuals now interact through technological systems that can partially displace traditional institutions. Third, it changes the logic of strategic trust. Trust is no longer anchored only in organizational reputation, regulatory institutions, or established market actors. It is increasingly mediated by code, platforms, and digital infrastructures (De Filippi and Wright 2018; Lessig 1999).

This shift is particularly visible in reflections on digital money and fintech. Prasad's analysis of the future of money shows that the digital revolution is transforming currencies and finance in ways that extend well beyond technical payment innovation. Monetary systems themselves are becoming subject to reconfiguration through digital infrastructures, new payment architectures, and novel relationships between public authority, private innovation, and financial intermediation (Prasad 2021). Allen's work on driverless finance likewise demonstrates that automation and fintech are not simply making finance more efficient; they are also creating new forms of opacity, complexity, and potential instability (Allen 2022). For management theory, this means that financial transformation must be treated as part of the environment of organizational action, not merely as a separate issue reserved for economists or regulators.

The implications of this shift are considerable. In a classical setting, planning could often be conceived as the rational anticipation of future organizational needs based on available information and strategic judgment. In a financialized digital environment, planning increasingly requ-

ires sensitivity to rapidly changing financial conditions, technological disruptions, and new forms of systemic exposure. Similarly, organizing can no longer be interpreted only in terms of formal organizational structure. It must also include the coordination of data systems, financial interfaces, digital channels of exchange, and the institutional arrangements through which value is stored, transferred, and secured. Leading, too, becomes more demanding. It must address the human consequences of technological change while guiding organizations through environments in which digital tools, financial innovations, and new risk structures alter the meaning of strategic control. Controlling, finally, expands from hierarchical supervision into multidimensional monitoring that includes operational indicators, financial exposure, compliance obligations, and increasingly complex technological dependencies (Robbins and Coulter 2020; Daft 2016; Schermerhorn and Bachrach 2023).

These changes also make it necessary to rethink what we mean by organizational rationality. In the classical tradition, rational management often meant the efficient alignment of means and ends. That basic idea remains valid. Yet in a digitally mediated and financially transformed environment, the means themselves become more unstable and the ends more difficult to evaluate. Digital financial tools may increase speed and access, but they may also amplify volatility, opacity, or legal uncertainty. New monetary forms may promise decentralization, flexibility, or inclusion, yet they may simultaneously weaken established structures of trust or generate novel systemic risks (BIS 2018; IMF 2021). The manager therefore operates within a rationality that is no longer purely instrumental in a simple sense. It requires interpretation, judgment, and the capacity to integrate technical, financial, organizational, and regulatory considerations within one strategic horizon.

The significance of this transformation becomes even clearer when one considers the changing status of money itself. Classical management theory generally presupposed money as a relatively stable background institution. Prices, capital, budgets, and financial incentives mattered, but the ontological status of money was not usually treated as a central manage-

rial issue. In the contemporary context, however, this presupposition can no longer be taken for granted. The emergence of cryptocurrencies, blockchain-based assets, tokenized value systems, and debates over legal tender and digital sovereignty shows that money is itself becoming an object of technological and political contestation (Alvarez, Argente, and Van Patten 2022; Narayanan et al. 2016; Tapscott and Tapscott 2016). This has direct consequences for management, because organizations increasingly operate in environments where the infrastructures of value exchange are themselves changing.

This does not imply that management must become a branch of monetary theory. It does mean, however, that management can no longer remain conceptually indifferent to monetary transformation. Questions that once seemed external to organizational analysis—such as the legal status of digital assets, the architecture of payment systems, the technological mediation of trust, or the systemic implications of disintermediated finance—now shape the strategic context in which organizations function. Management in a financialized digital environment must therefore be capable of interpreting the transformation of money as part of the transformation of organizational conditions. In this sense, the old boundary between internal management and external financial order becomes increasingly porous.

A further consequence of this shift concerns the relation between management and governance. In classical models, governance often appeared as a broader institutional framework that constrained or supported managerial action from the outside. In the contemporary context, governance becomes more deeply intertwined with management itself. This is especially true in digitally mediated finance, where law, code, platform architecture, and regulatory systems increasingly shape the possibilities of organizational action (De Filippi and Wright 2018; Regulation (EU) 2023/1114). The manager now acts not only within a market, but within a field where governance is distributed across institutions, digital systems, legal categories, and technical protocols. This reinforces the need for a more integrative theory of management, one capable of relating organiza-

tional decision-making to wider structures of financial and technological order.

At the same time, the transformation of management in a financialized digital environment should not be interpreted as a simple triumph of technology. The literature on digital money and blockchain makes clear that innovation is accompanied by disputes concerning legality, legitimacy, freedom, authority, and social consequence. Hayek's reflections on denationalised money represent one influential attempt to imagine competition among currencies beyond state monopoly (Hayek 1976; Hayek 1978). By contrast, more recent critiques stress the political, ideological, or destabilizing dimensions of digital monetary projects (Golumbia 2016; Morozov 2013). These debates matter for management because they affect how organizations evaluate risk, legitimacy, strategic orientation, and institutional trust. Management is not performed in a normative vacuum. The transformation of the monetary order inevitably affects the normative environment of organizational action.

For this reason, the classical foundations of management must now be re-read in light of a more complex environment than the one in which they were originally formulated. Planning, organizing, leading, and controlling remain the basic grammar of managerial action, but the substantive reality to which they are applied has changed. Management now takes place within organizations that are increasingly knowledge-driven, technologically mediated, financially interconnected, and exposed to changing forms of digital value. The contemporary task is therefore not to abandon the classical framework, but to reinterpret it under conditions shaped by fintech, platformization, algorithmic decision systems, and monetary transformation.

This reinterpretation provides the necessary starting point for the rest of the article. Once management is understood as operating within a financialized digital environment, it becomes possible to see why knowledge, human capital, entrepreneurship, artificial intelligence, and sustainability are no longer secondary themes. They become essential dimensions of the contemporary managerial paradigm. The next section therefore turns

to knowledge, organizational learning, and human capital as the strategic infrastructure without which no organization can function effectively in an age of intelligent finance and digital money.

Knowledge, Organizational Learning, and Human Capital as the Strategic Infrastructure of Management in the Age of Digital Finance

If contemporary management is increasingly shaped by monetary and technological transformation, then knowledge and human capital must be recognized as its primary strategic infrastructure. No organization can function effectively in an environment marked by digital finance, algorithmic systems, blockchain-based architectures, and rapidly changing forms of value exchange unless it possesses the capacity to learn, interpret, and adapt. For this reason, knowledge management and human resource management should not be treated as secondary supporting functions. They belong to the core of contemporary management, because they determine whether organizations are capable of responding to complexity, absorbing innovation, and operating responsibly within technologically and financially transformed environments (Robbins and Coulter 2020; Schermerhorn and Bachrach 2015; Griffin 2021).

This conclusion follows directly from the transformation of the organizational environment. In classical managerial settings, knowledge was certainly important, yet it was often treated as one resource among others. In the contemporary organization, by contrast, knowledge has become a decisive condition of competitiveness, resilience, and strategic judgment. The growing role of digital systems, financial technologies, and data-intensive processes means that organizations can no longer rely solely on routine coordination or traditional administrative procedures. They must develop institutional capacities for acquiring, structuring, sharing, and applying knowledge in ways that influence everyday managerial decisions. In this sense, management increasingly takes the form of organized learning (Daft 2016; Jones and George 2020).

This point is central to Staniewski's reflection on knowledge management as a movement from concept to practical action. The significance of this contribution lies in its insistence that knowledge management is not an abstract slogan, but an operational necessity. Knowledge becomes managerially meaningful only when it is transformed into organizational capability, that is, when it informs decision-making, improves strategic orientation, supports innovation, and becomes embedded in practical processes of action (Staniewski, 35–48). Contemporary management therefore depends not simply on access to information, but on the ability to convert dispersed cognitive resources into coherent organizational intelligence.

This insight is reinforced by Staniewski's broader review of knowledge management in enterprises. What emerges from this work is a clear understanding that knowledge management should not be confined to technical systems of information storage or to narrowly administrative mechanisms of codification. Its true importance lies in the fact that it connects organizational learning, strategic goals, communication, and institutional effectiveness. Knowledge management is thus not external to management theory. It is one of the principal forms in which management is now performed, especially in environments where uncertainty, innovation, and rapid adaptation are decisive (Staniewski, "Zarządzanie wiedzą w przedsiębiorstwach - przegląd badań").

The role of organizational learning follows directly from this. If knowledge is a strategic resource, then an organization cannot remain a passive repository of routines. It must become a learning system capable of interpreting internal and external signals, correcting ineffective practices, and revising its strategic assumptions in response to new developments. This is particularly important in the context of digital finance and emerging monetary technologies. Financial innovation does not merely introduce new instruments; it changes the informational environment within which organizations operate. New payment infrastructures, algorithmically mediated transactions, tokenized assets, and digitally networked forms of

exchange all generate conditions in which the ability to learn quickly becomes a core managerial advantage (Prasad 2021; Allen 2022).

For this reason, knowledge management must now be linked more directly to human capital. Knowledge does not exist in organizations independently of people. It is embodied in competences, routines, interpretive capacities, communication structures, and institutional memory. Staniewski's studies on the elements of human resources management supporting knowledge management, as well as his reflections on the relation between human resource management and knowledge management, make this especially clear. Recruitment, training, motivation, communication, and competence development all shape the conditions under which knowledge may become a genuinely strategic asset. Human resource management is therefore not parallel to knowledge management, but one of its principal carriers (Staniewski, "The Elements of Human Resources Management Supporting Knowledge Management," 283-291; Staniewski, "Zarządzanie zasobami ludzkimi a zarządzanie wiedzą").

This relationship becomes even more important under conditions of technological acceleration. Organizations increasingly rely on digital tools, data-driven systems, and AI-supported processes, yet these do not eliminate the need for human capability. On the contrary, they intensify it. Technological systems require people who are able to interpret outputs, assess relevance, identify limitations, and translate analytical results into meaningful organizational action. The more digitized and financially complex the environment becomes, the more important it is for organizations to cultivate employees capable not only of technical adaptation, but also of critical judgment and interdisciplinary understanding (Kinicki and Williams 2018; Williams 2018).

In this respect, Staniewski's work on human resources management in the aspect of innovativeness acquires particular significance. It suggests that human resource management should not be reduced to staffing or procedural administration. Its strategic role lies in enabling innovation by shaping the developmental environment of the organization. Innovativeness emerges not simply from isolated ideas or technologies, but from a

managerial architecture in which people are selected, developed, motivated, and coordinated in ways that support organizational renewal (Staniewski, "Management of Human Resources in the Aspect of Innovativeness"). This observation has special relevance in an age of fintech and digital money, where innovation is often discussed in technological terms while the human preconditions of innovation are underestimated. No digital financial infrastructure becomes organizationally productive without the human capacities required to understand, implement, and govern it.

A similar point can be made on the basis of Staniewski's reflections on the architecture of human resources in the context of Poland as a new member country of the European Union. The importance of this perspective lies in its recognition that human capital does not develop in a vacuum. It is conditioned by broader institutional and developmental environments. Educational structures, labour-market conditions, modernization processes, and organizational strategies all influence the formation and mobilization of competences (Staniewski, "Human Resources Architecture of European Union New Member Country - Case of Poland"). This has a wider theoretical significance. If organizations are increasingly expected to operate in financially transformed and technologically demanding environments, then their internal capacities cannot be separated from the wider systems within which human capital is produced and sustained.

The same logic appears in a more future-oriented form in the World Economic Forum report on the jobs of tomorrow. That report is important because it draws attention to the changing skill structures of contemporary economies and the need to prepare workers and organizations for emerging forms of work shaped by automation, digital systems, and new economic arrangements (WEF 2020). From the perspective of management, this confirms that human capital must now be understood dynamically. It is not simply a stock of existing qualifications, but a field of continuous adaptation. Organizations operating in environments transformed by AI, fintech, and digital finance need learning-oriented employees, fle-

xible competence structures, and managerial systems capable of supporting reskilling and institutional responsiveness.

This shift also changes the meaning of effectiveness and efficiency. In more traditional terms, efficiency referred to the rational use of resources, while effectiveness concerned the achievement of intended goals. In a knowledge-intensive and financially digitized environment, both categories must be broadened. Efficiency includes the proper organization of information, the reduction of cognitive bottlenecks, and the effective coordination of human and digital resources. Effectiveness includes the ability to learn, innovate, and respond strategically to technological and financial change. This means that organizational performance increasingly depends on the interaction between knowledge systems and human-capital systems rather than on formal control alone (Robbins and Coulter 2020; Daft 2016; Jones and George 2020).

The managerial significance of this conclusion becomes especially clear when one considers the demands created by digital finance. Fintech systems promise speed, inclusion, and new forms of value transfer, but they also generate complexity, opacity, and new categories of risk (Allen 2022; IMF 2021). Blockchain-based systems promise trust through decentralization and code, yet they require sophisticated understanding of governance, legal implications, and technological limits (De Filippi and Wright 2018; Narayanan et al. 2016). Cryptocurrencies and tokenized assets may offer new opportunities for financial innovation, but they also demand competencies that combine financial literacy, technological understanding, and regulatory awareness (BIS 2018; Prasad 2021). In each of these cases, the decisive organizational factor is not technology alone, but the capacity of people and institutions to understand and manage it.

This is why knowledge and human capital must be treated as the strategic infrastructure of contemporary management. Without knowledge management, organizations remain informationally fragmented and strategically reactive. Without human capital development, knowledge cannot be institutionalized or translated into sustainable action. Without organizational learning, technological and financial transformation becomes a

source of disorder rather than innovation. The contemporary manager must therefore be understood not simply as a coordinator of existing resources, but as a builder of learning conditions, a designer of competence architectures, and a mediator between organizational intelligence and changing external realities (Schermerhorn and Bachrach 2015; Griffin 2021; Staniewski, "Zarządzanie wiedzą: od koncepcji do praktyki działania," 35-48; Staniewski, "The Elements of Human Resources Management Supporting Knowledge Management," 283-291).

This also has a normative implication. In an environment increasingly shaped by digital finance and automated systems, organizations may be tempted to interpret innovation as a primarily technological matter. Such an approach is insufficient. Technological development that is not supported by knowledge, competence, and institutional learning easily becomes superficial, unstable, or even dangerous. A genuinely mature management paradigm must therefore resist reductionism. It must recognize that digital transformation is sustainable only when it is grounded in human development and organizational learning. The future of management does not lie in replacing people with systems, but in creating forms of coordination in which human and technological capabilities reinforce one another responsibly (Allen 2022; WEF 2020; Prasad 2021).

For this reason, knowledge, organizational learning, and human capital should be regarded as the indispensable internal preconditions of management in the age of digital finance. They make it possible for organizations to navigate uncertainty, interpret technological change, absorb financial innovation, and sustain strategic coherence under conditions of rapid transformation. They also provide the bridge to the next major theme of the article. Once organizations are understood as learning systems built on human capability, the analysis must move toward entrepreneurship and value creation, where initiative, relational capacity, and innovative action become visible in an even more explicit form.

Entrepreneurship, Value Creation, and the Social Logic of Financial Innovation

If knowledge and human capital constitute the strategic infrastructure of contemporary management, entrepreneurship represents one of its most dynamic expressions. In conditions shaped by digital finance, technological acceleration, and changing forms of value exchange, entrepreneurship can no longer be understood adequately as a merely individual disposition or as a narrowly market-oriented activity. It must be interpreted as a relational, developmental, and institutionally mediated process through which initiative is transformed into organizational and financial innovation. This is especially important in a world where platforms, blockchain systems, fintech applications, and tokenized forms of value increasingly influence how opportunities are perceived, organized, and exploited. Entrepreneurship therefore becomes one of the key bridges between internal organizational capability and the transformed external environment of money, finance, and digital systems (Bateman, Snell, and Konopaske; Drucker 1974; Tapscott and Tapscott 2016).

The broader relevance of entrepreneurship for management lies in the fact that it reveals how organizations and individuals respond actively to uncertainty. Classical management could often assume relatively stable structures within which coordination and control were the main challenges. Entrepreneurship, by contrast, foregrounds initiative, flexibility, experimentation, and the capacity to act under conditions of incomplete information. In this sense, entrepreneurship is not external to management, but one of its most revealing contemporary forms. It shows how knowledge, human capital, communication, and motivation are translated into strategic action when the environment is changing and opportunities are not given in advance.

This broader view is especially clear in the works of Staniewski and his co-authors. Their studies consistently challenge the reduction of entrepreneurial success to financial outcomes or individual talent alone. Instead, they demonstrate that entrepreneurship is deeply embedded in sys-

tems of communication, family relations, motivational structures, and broader socioeconomic conditions. This is a decisive insight for contemporary management. It means that entrepreneurial agency does not arise in isolation. It is formed, strengthened, or weakened by relational and developmental environments that influence the actor's confidence, resilience, initiative, and capacity for sustained action (Staniewski and Awruk; Staniewski, Awruk, Leonardi, and Słomski 2024; Staniewski, Awruk, Leonardi, and Słomski 2025).

The systems approach to entrepreneurial success proposed by Staniewski and Awruk is especially significant in this respect. By emphasizing the importance of family factors for effective entrepreneurship, it expands the field of analysis beyond the organization and the market. Family communication, emotional support, value structures, and patterns of expectation become visible as factors shaping the entrepreneur's capacity to initiate and sustain economic action (Staniewski and Awruk). This is important for management theory because it shows that entrepreneurial potential is partly formed before formal organizational activity begins. The relational preconditions of action matter. Organizations operating in complex and innovative environments therefore need to be understood in connection with wider social and developmental processes rather than as isolated mechanisms of profit generation.

This perspective is deepened further in the study on family determinants of entrepreneurial success and the mediational role of self-esteem and achievement motivation. The importance of this work lies in the fact that it identifies concrete mechanisms through which relational conditions influence entrepreneurial outcomes. Family context matters not simply in a general or symbolic way, but through its effects on psychological resources that shape action. Self-esteem and achievement motivation become mediating factors through which communication and support are translated into entrepreneurial effectiveness (Staniewski, Awruk, Leonardi, and Słomski 2024). For management theory, this has major implications. It suggests that entrepreneurial action must be interpreted as simulta-

neously social and personal: it depends both on external conditions and on internalized capacities for initiative, persistence, and achievement.

A similar conclusion emerges from the study on family communication and entrepreneurial success mediated by entrepreneurial self-efficacy. Communication within the family is shown here to affect entrepreneurial outcomes not directly, but through the entrepreneur's confidence in their ability to act effectively, solve problems, and cope with uncertainty (Staniewski, Awruk, Leonardi, and Słomski 2025). This insight is especially valuable in a management context shaped by technological and financial transformation. Digital finance, platformized markets, and blockchain-based ecosystems often intensify uncertainty rather than reduce it. Under such conditions, entrepreneurial self-efficacy becomes even more important, because the actor must navigate environments characterized by novelty, volatility, and complex informational demands. Management in such settings requires not only technical knowledge, but also psychologically and relationally grounded forms of agency.

The psychometric study devoted to the Entrepreneur's Family Communication Questionnaire reinforces this point by providing a more rigorous instrument for identifying and analyzing one of the relational dimensions of entrepreneurial effectiveness (Staniewski, Awruk, and Leonardi). Its importance is not merely methodological. By operationalizing family communication as a relevant variable, it confirms that entrepreneurial success can be studied through dimensions that earlier economic or managerial models often neglected. This expands the conceptual horizon of management by showing that the roots of initiative and innovation lie partly in communicative and social structures, not only in market incentives or organizational design.

The broader social environment also matters. Staniewski and Szopiński's study on the influence of socioeconomic factors on the entrepreneurship of Polish students demonstrates that entrepreneurial potential is shaped by structural conditions, educational opportunities, and social positioning rather than solely by personal disposition (Staniewski and Szopiński). This has a direct bearing on management in the age of financial

innovation. If entrepreneurial capacity depends partly on the surrounding institutional and social environment, then organizations and innovation ecosystems cannot assume that initiative simply emerges spontaneously. It must be cultivated through educational, communicative, and developmental processes. This means that management, entrepreneurship, and broader social policy become more closely connected than more individualistic theories usually suggest.

At this point, the relation between entrepreneurship and value creation becomes crucial. In a technologically mediated financial environment, entrepreneurship does not only consist in establishing new firms or exploiting market gaps. It increasingly involves creating new value architectures. Platforms, mobile interfaces, machine learning applications, digital communities, and blockchain-based protocols reshape how value is produced, perceived, exchanged, and appropriated. This is why the study on consumer value creation through WhatsApp use becomes relevant to the present argument. Its importance lies in showing that value is co-created through communication, use, and interaction, rather than being transmitted in a purely linear way from producer to consumer (Cruz-Cárdenas et al. 2019). This insight broadens the meaning of entrepreneurship. Entrepreneurial value emerges not only from ownership or innovation in the narrow sense, but also from the capacity to organize relational environments in which value is generated through participation and communication.

The same issue appears in an even more directly financial and technological form in the study on value creation and appropriation from the use of machine learning in start-ups. This work is especially important because it distinguishes between value creation and value appropriation, showing that innovation alone is not enough. Organizations must also be capable of capturing, organizing, and sustaining the value generated through technological systems (Costa-Climent, Navarrete, Haftor, and Staniewski 2024). This is highly relevant in the context of financial innovation. Fintech and blockchain-based entrepreneurship often promise disruption, decentralization, and new forms of efficiency. Yet from the per-

spective of management, the critical question remains: under what conditions does financial innovation produce sustainable organizational value rather than transient novelty or speculative excitement? The distinction between creating value and appropriating it effectively becomes decisive here.

This question becomes even more pressing when one considers the entrepreneurial culture surrounding digital money. The literature on blockchain and cryptocurrencies often celebrates innovation in strongly entrepreneurial terms. Tapscott and Tapscott present blockchain as a transformative technology capable of changing money, business, and the world by reducing reliance on centralized intermediaries and enabling new forms of trust and coordination (Tapscott and Tapscott 2016). Buterin's reflections on Ethereum and proof of stake similarly connect technological architecture with broader visions of economic and organizational possibility (Buterin 2022). Chaum's earlier work on transaction systems without identification already anticipated some of these concerns by linking technological innovation with privacy, autonomy, and alternative forms of exchange (Chaum 1985). Together, these works illustrate a distinctive entrepreneurial imagination: one in which technological design becomes inseparable from innovation in money, coordination, and institutional form.

At the same time, the social logic of financial innovation also requires critical interpretation. Maurer, Nelms, and Swartz show that Bitcoin is not simply a neutral technical invention, but a socially meaningful response to perceived problems in the monetary system itself (Maurer, Nelms, and Swartz 2013). In a different but related way, De Filippi and Wright demonstrate that blockchain technologies are deeply entangled with legal order and governance rather than standing outside them (De Filippi and Wright 2018). These works remind us that financial innovation is never purely technical or purely entrepreneurial. It is also social, legal, and political. For management, this means that entrepreneurship in the financial-technological sphere must be understood not merely as market initiative,

but as action situated within contested fields of trust, regulation, legitimacy, and institutional design.

This is where the ethical dimension of entrepreneurship becomes especially important. The study on the ethical aspects of entrepreneurship reminds us that entrepreneurial activity cannot be evaluated solely by economic dynamism or innovative capacity. It is also shaped by value orientation, responsibility, and the broader normative horizon within which action takes place (Staniewski, Słomski, and Awruk). This point becomes particularly significant in the world of fintech and digital assets, where innovation is often celebrated before its social consequences are adequately understood. A mature management paradigm cannot treat entrepreneurship as self-justifying. It must ask what forms of value are being created, who bears the risks, who benefits from innovation, and whether new financial architectures strengthen or weaken institutional trust and social responsibility.

For this reason, entrepreneurship in the age of digital finance should be interpreted as a relational and systemic process of value formation rather than as the isolated action of heroic innovators. It depends on communication, family support, psychological resources, educational environment, organizational capability, and the broader technological and financial order within which innovation occurs. This broader understanding has major consequences for contemporary management. It means that managers must pay attention not only to formal strategies, but also to the social and communicative conditions under which initiative becomes possible. In environments marked by digital money, platform innovation, and financial experimentation, entrepreneurship becomes a crucial mode of adaptive action—but only when it is anchored in human capability, social trust, and responsible organizational judgment.

Seen in this way, entrepreneurship provides a decisive transition within the argument of the article. Knowledge and human capital form the internal infrastructure of adaptive organizations. Entrepreneurship shows how that infrastructure becomes activated through initiative, innovation, and value creation in uncertain environments. The next step is therefore clear.

Once entrepreneurship is interpreted in relation to financial innovation and digitally mediated value systems, the analysis must turn to the growing role of artificial intelligence, fintech, and intelligent finance as forces that are reshaping the very architecture of managerial decision-making and financial governance.

Artificial Intelligence, Fintech, and the Managerial Logic of Intelligent Finance

One of the most decisive shifts in contemporary management concerns the growing convergence of artificial intelligence, fintech, and digitally mediated financial infrastructures. If earlier transformations in management were primarily associated with knowledge, human capital, and entrepreneurship, the current phase is increasingly marked by the emergence of intelligent finance: a field in which algorithmic systems, automated analytics, digital platforms, and new monetary technologies reshape how organizations make decisions, assess risk, create value, and interact with financial environments. For this reason, artificial intelligence should not be treated merely as an additional tool within an otherwise stable managerial framework. It must be understood as part of a broader transformation in the logic of management itself, especially where financial processes, strategic coordination, and technologically mediated trust become deeply intertwined (Daft 2016; Jones and George 2020; Prasad 2021).

This transformation is especially important because it affects not only operational efficiency, but also the architecture of organizational rationality. In more traditional settings, managerial decision-making depended primarily on hierarchical reporting, accumulated experience, professional judgment, and institutional routines. In contemporary organizations, these elements remain relevant, yet they are increasingly complemented—and in some cases partially displaced—by data-driven analysis, predictive modelling, algorithmic recommendations, and intelligent systems capable of processing vast amounts of information in real time. The manager the-

refore operates in an environment where analytical capacity is no longer limited to human cognition alone. Organizational intelligence increasingly emerges from the interaction between human judgment and machine-assisted processing (Robbins and Coulter 2020; Schermerhorn and Bachrach 2023).

This development is directly illuminated by the study arguing that artificial intelligence can change the way policy modelling is conducted. Its importance lies in the fact that it presents AI not merely as a technical accelerator, but as a force capable of altering how complex environments are interpreted, modelled, and governed (Estrada, Park, and Staniewski 2023). Policy modelling involves uncertainty, multiple variables, dynamic interactions, and the need to anticipate alternative outcomes. These are features not only of public decision-making, but also of contemporary management, especially in financial contexts. Organizations operating in digitally transformed environments must increasingly manage similar forms of complexity. They must interpret unstable conditions, anticipate shifts, and respond strategically to patterns that are often too intricate to be understood through traditional linear methods alone. AI thus becomes relevant to management precisely because it expands the analytical horizon of organizational action.

The managerial implications of this are considerable. First, artificial intelligence alters the temporal structure of decision-making. Organizations can increasingly rely on real-time information, predictive signals, and continuously updated analytical outputs rather than depending solely on retrospective reporting. Second, AI changes the scale of managerial perception. It enables organizations to process data volumes and relational patterns far beyond ordinary human capacity. Third, it modifies the relation between information and judgment. The manager is no longer merely the one who interprets limited evidence, but increasingly the one who evaluates, integrates, and governs technologically mediated recommendations. This means that managerial competence now includes the ability to work critically with intelligent systems, to understand their strengths and limitations, and to incorporate them into strategy without surrende-

ring human responsibility (Estrada, Park, and Staniewski 2023; Allen 2022).

This point becomes especially important in the context of fintech. Fintech does not simply digitalize existing financial services. It transforms the institutional and operational logic of finance by enabling new forms of payment, lending, intermediation, investment, and financial coordination through digital platforms and automated processes. Allen's analysis of driverless finance is particularly significant here because it demonstrates that fintech innovation is accompanied not only by efficiency gains and broader accessibility, but also by new vulnerabilities. Automation may reduce human friction, yet it can also intensify opacity, amplify speed without reflection, and produce complex systemic risks that are difficult to govern through traditional regulatory or organizational frameworks (Allen 2022). For management, this means that financial innovation cannot be treated simply as opportunity. It must also be approached as a new field of strategic and institutional risk.

This is why the notion of intelligent transformation becomes especially useful. The concept suggests that contemporary organizations are not merely adopting digital tools, but are being restructured by the integration of AI, data-driven systems, and advanced technological coordination into their core processes. In this environment, finance is no longer a background support function. It becomes one of the key sites where intelligent systems reshape organizational behavior. Financial operations, risk modelling, value assessment, transaction processing, forecasting, and regulatory compliance are increasingly affected by intelligent technologies. The result is not simply faster finance, but a changed environment of managerial action in which organizational strategy becomes inseparable from technological-financial mediation (Costa-Climent, Haftor, and Staniewski, *Intelligent Transformation*).

This shift also transforms the logic of organizational learning discussed earlier in the article. Learning can no longer be understood solely as the accumulation of human experience, training, and communicative adaptation. In the age of intelligent finance, organizations also learn through

systems that detect patterns, generate probabilistic assessments, and continuously refine outputs through iterative processing. Yet this does not diminish the importance of human capital. On the contrary, it intensifies it. Intelligent systems do not abolish the need for judgment, interpretation, and responsibility. They make these more necessary, because the organization must determine how to use technologically generated insights in ways that are strategically coherent and normatively defensible. The more advanced the system, the more important becomes the managerial capacity to understand what the system is doing and what should or should not be delegated to it (Kinicki and Williams 2018; WEF 2020).

The distinction between value creation and value appropriation becomes especially relevant at this point. The study on value creation and appropriation from the use of machine learning in start-ups shows that technological innovation does not automatically generate sustainable organizational benefit. The mere adoption of machine learning tools does not guarantee that value will be effectively captured, distributed, or stabilized within the organization. What matters is the broader strategic and organizational context in which technology is used (Costa-Climent, Navarrete, Haftor, and Staniewski 2024). This is a crucial lesson for management in the fintech domain. Intelligent finance may create new possibilities for efficiency, forecasting, personalization, and innovation, yet without adequate governance, competence, and institutional design, these possibilities remain unstable or may even generate new forms of vulnerability.

This insight helps prevent a simplistic technological determinism. Contemporary discourse often treats AI and fintech as self-evident signs of progress. From the standpoint of management, such an approach is insufficient. The real question is not whether intelligent systems are powerful, but under what conditions they become organizationally productive and socially legitimate. Management must therefore evaluate AI and fintech not only in terms of speed and scale, but also in terms of accountability, interpretability, strategic fit, regulatory exposure, and long-term sustainability. This is especially important in financial environments, where the costs of error, opacity, or poorly governed automation may extend far

beyond the individual firm and affect broader systems of trust and stability (Allen 2022; IMF 2021; BIS 2018).

At the same time, intelligent finance also broadens the horizon of what management must govern. Traditional managerial control focused on employees, workflows, outputs, and budgets. In the current environment, management must increasingly govern interfaces between human actors, intelligent systems, digital infrastructures, and financial mechanisms. This includes not only operational coordination, but also questions of model risk, data integrity, systemic interdependence, legal compliance, and technological dependence. The manager therefore becomes not merely a coordinator of organizational resources, but also an interpreter of complex technical-financial environments. In this sense, intelligent finance expands the scope of management while simultaneously making it more intricate.

The relevance of this transformation becomes even clearer when placed in the context of digital money. Prasad's account of the future of money shows that finance is being reshaped not only through new institutions, but also through new technological architectures that affect currency, payments, intermediation, and public-private relations within the monetary sphere (Prasad 2021). This means that intelligent finance should not be interpreted as a marginal development within a stable monetary order. It is part of a wider reconfiguration of money, financial trust, and value exchange. Management must therefore operate in an environment where financial decision-making, technological systems, and monetary transformation increasingly overlap.

This broader horizon is also supported by the literature on blockchain and crypto-technologies. Narayanan and his co-authors show that digital financial systems are not simply speculative curiosities, but technologically sophisticated architectures with implications for trust, verification, and transaction design (Narayanan et al. 2016). Tapscott and Tapscott emphasize their transformative ambitions for business and finance more broadly (Tapscott and Tapscott 2016). Even if such perspectives differ in tone from more cautious analyses of systemic risk, they converge on one

important point: management can no longer afford conceptual indifference to the technological transformation of finance. The environment of organizational action is changing, and with it the conditions under which strategy, control, and value creation take place.

For this reason, artificial intelligence and fintech should be interpreted as central dimensions of the emerging managerial paradigm rather than as specialized external themes. They reshape planning through predictive analytics, organizing through digital-financial infrastructures, leading through the management of technologically augmented environments, and controlling through real-time monitoring and intelligent feedback systems. Yet they also reveal the continued importance of human judgment, institutional design, and ethical responsibility. Intelligent finance does not replace management. It makes management more demanding by requiring the coordination of human, technological, and financial capacities within one increasingly integrated system.

This conclusion also prepares the transition to the next section. Once management is understood as operating within the field of intelligent finance, the question of money itself becomes unavoidable. Fintech and AI transform financial intermediation, but they also lead directly toward broader issues concerning digital money, crypto-assets, regulation, legal status, and the governance of new monetary systems. The next section therefore examines how management must be reinterpreted when not only finance, but money itself becomes technologically contested and institutionally transformed.

Digital Money, Crypto-Assets, and the Governance of New Financial Systems

The transformation of management in the age of intelligent finance leads inevitably to a more fundamental question: what happens when not only financial intermediation, but money itself becomes technologically reconfigured, legally contested, and institutionally unstable? This question is no longer marginal. The rise of cryptocurrencies, blockchain-based

assets, stablecoins, tokenized systems of value, and digitally mediated payment architectures has altered the horizon within which organizations operate. Management can no longer assume a stable monetary background that merely supports budgeting, exchange, and valuation. It must increasingly respond to a changing environment in which money, trust, regulation, and technological design are themselves becoming objects of strategic concern (Prasad 2021; BIS 2018; Allen 2022).

This shift has direct implications for management because money is not a neutral external instrument. It is one of the constitutive media through which organizations coordinate action, assess value, structure incentives, and enter relations of exchange. Once monetary systems become technologically transformed, the conditions of organizational rationality are altered as well. Digital money affects transaction speed, intermediation structures, compliance burdens, capital flows, and the architecture of trust. For this reason, the governance of new financial systems is not a topic external to management theory. It belongs to the contemporary environment of management itself.

The literature on the future of money clarifies the scale of this transformation. Prasad argues that the digital revolution is reshaping currencies and finance through changing payment systems, new financial actors, and emerging relations between public money and private innovation (Prasad 2021). What is decisive in this analysis is not merely the observation that digital tools are spreading, but the recognition that the institutional foundations of money are becoming more complex. Central banks, commercial financial institutions, platform-based systems, and decentralized financial architectures are increasingly entangled in a shifting monetary landscape. For management, this means that organizational action must take place in relation to a financial environment that is becoming more plural, more technologically mediated, and potentially more unstable.

A similar conclusion emerges from the Bank for International Settlements. Its analysis of cryptocurrencies emphasizes that the debate must move beyond technological hype and address more fundamental issues

concerning scalability, trust, value stability, and the monetary functions that cryptocurrencies may or may not be able to perform (BIS 2018). This point is crucial for management. Organizations cannot treat digital assets simply as symbols of innovation or as speculative opportunities detached from operational reality. They must ask whether these instruments can serve as reliable stores of value, media of exchange, or units of account within actual systems of economic coordination. If money is to support management, it must function not only technically, but institutionally.

The question becomes even more concrete in the debate over whether cryptocurrencies are in fact currencies. Alvarez, Argente, and Van Patten's study of Bitcoin as legal tender in El Salvador is especially important because it tests digital money not merely as an abstract innovation, but as a practical monetary arrangement within a national economy (Alvarez, Argente, and Van Patten 2022). The importance of this analysis lies in its refusal to treat technological novelty as equivalent to monetary adequacy. Legal recognition alone does not automatically make a digital asset suitable for the full range of monetary and organizational functions. From the perspective of management, this is decisive. Organizations require not only technical feasibility, but also reliability, institutional intelligibility, and a degree of value stability sufficient for planning, contracting, pricing, and strategic coordination.

This is why the literature on blockchain governance becomes so important. De Filippi and Wright argue that blockchain systems are not situated outside legal and political order, but generate new tensions between code-based governance and established legal frameworks (De Filippi and Wright 2018). Lessig's older but still influential insight that code functions as a form of regulation is highly relevant here as well (Lessig 1999). For management, these arguments carry significant consequences. If digital financial systems are partly governed by code, then managerial action increasingly occurs within environments where technical design itself has regulatory force. Governance is no longer located solely in law, organizational policy, or market convention. It is also embedded in protocols, software architecture, access rules, consensus mechanisms, and plat-

form design. The manager must therefore operate within a more distributed field of authority than in classical financial systems.

The legal dimension becomes even more explicit when one considers contemporary regulatory frameworks. Regulation (EU) 2023/1114 on markets in crypto-assets is especially important because it demonstrates that the rise of digital assets has already generated the need for explicit and comprehensive regulatory responses within the European legal order (Regulation (EU) 2023/1114). This matters greatly for management. The world of crypto-assets is no longer a merely experimental or informal zone at the margins of finance. It is becoming an object of institutional codification, supervisory oversight, and compliance obligations. Organizations operating in such environments must therefore integrate regulatory intelligence into strategic management. Innovation without governance is no longer a plausible managerial stance.

A similar point can be made through the enduring significance of SEC v. W.J. Howey Co. Although it belongs to an earlier legal context, the Howey test remains important because it helps determine whether particular arrangements should be treated as investment contracts and therefore fall under securities regulation (SEC v. W.J. Howey Co., 328 U.S. 293 [1946]). In the context of digital assets and tokenized systems, this question is more than technical. It determines how organizations classify risk, structure offerings, evaluate legal exposure, and design financial products. Management in the age of digital money thus requires not only technological awareness, but also legal interpretive capacity.

This governance problem also has deeper historical and conceptual roots. Hayek's arguments for the denationalisation of money remain relevant because they articulate one of the most influential theoretical visions behind competitive and non-state monetary systems (Hayek 1976; Hayek 1978). In a different ideological register, Rothbard and Nozick represent broader libertarian attempts to restrict the scope of state authority and emphasize decentralized orders of exchange and property (Rothbard 1973; Nozick 1974). These perspectives matter for the contemporary discussion because some of the intellectual energy behind cryptocurrencies

and decentralized finance draws upon similar aspirations toward disintermediation, competitive currencies, and freedom from centralized monetary control. For management, however, such aspirations cannot be assessed only as philosophical positions. They must be evaluated in terms of operational consequences, institutional reliability, and governance viability.

This is precisely where more critical perspectives become indispensable. Golumbia's political analysis of Bitcoin warns that digital monetary imaginaries may carry ideological assumptions that are not politically innocent or institutionally neutral (Golumbia 2016). Morozov's critique of technological solutionism is relevant for a similar reason: it reminds us that technological systems are often burdened with exaggerated expectations, as though they could resolve problems that are in fact political, legal, or social in nature (Morozov 2013). From the perspective of management, these warnings are essential. They caution against treating digital money as a self-validating innovation. New financial systems must be evaluated not only for technical ingenuity, but also for their effects on trust, inequality, accountability, and institutional order.

This broader field of evaluation also includes the question of privacy and identification. Chaum's early work on transaction systems "without identification" anticipated one of the core tensions of digital finance: the desire to protect privacy and autonomy while still preserving the conditions necessary for trust, legality, and social order (Chaum 1985). In current contexts, that tension has become even sharper. Digital money can promise inclusion, freedom, and transaction efficiency, yet it can also facilitate opaque transfers, illicit uses, or reduced accountability. This is one reason why analyses of illegal activity financed through cryptocurrencies remain highly relevant. Foley, Karlsen, and Putniņš show that a significant portion of cryptocurrency activity has been linked to illegal uses, reminding us that financial innovation cannot be evaluated solely through narratives of disruption or empowerment (Foley, Karlsen, and Putniņš 2019). The UNODC's broader attention to illicit economic activi-

ty reinforces the need to place such systems within a wider framework of governance and public-order concerns (UNODC 2019).

This governance perspective also reveals why ancient and classical legal thought is not irrelevant to digital money. The Roman legal tradition represented in the *Digesta Iustiniani* reminds us that financial and commercial life has always depended on legal intelligibility, recognized categories, and enforceable frameworks of obligation (Iustinianus 1870). Lon Fuller's emphasis on the internal morality of law is equally instructive, because it highlights the importance of clarity, consistency, publicity, and institutional reliability for any functioning normative order (Fuller 1969). These insights are highly relevant to contemporary digital finance. Code may regulate behavior, but management cannot rely on technical ordering alone where questions of accountability, liability, and legitimacy remain unresolved. New monetary systems require not only software, but also normatively credible forms of governance.

At this point, the managerial significance of digital money becomes especially clear. Organizations operate through trust, valuation, timing, and coordinated expectations. All of these depend on some degree of monetary reliability. When monetary forms multiply and technological infrastructures mediate exchange in novel ways, management must become more attentive to the governance of value systems themselves. This means assessing not only profitability or innovation, but also legal status, institutional intelligibility, compliance burdens, systemic exposure, and the relation between decentralization and accountability. In this sense, management in the age of digital money increasingly becomes management of trust, code, regulation, and systemic financial risk.

This conclusion helps clarify the contemporary meaning of governance. Governance is no longer limited to the internal control of the firm or the broad regulation of markets by public authorities. It increasingly concerns the interaction between institutional law, technological architecture, decentralized protocols, and organizational strategy. Managers must therefore navigate a hybrid environment in which authority is distributed across regulators, courts, platforms, protocols, and transnational financial

infrastructures. The rise of crypto-assets and digital money does not eliminate governance. It multiplies its forms and complicates its interpretation.

For this reason, digital money and crypto-assets should not be understood merely as new financial products. They represent a transformation in the architecture of economic coordination that forces management to confront deeper questions concerning legal order, institutional trust, and the governance of innovation. Organizations that engage with such systems must therefore combine technological literacy with regulatory intelligence, financial prudence, and ethical judgment. Once this is recognized, the next step in the argument becomes unavoidable: digital financial innovation must be assessed not only in terms of functionality and governance, but also in relation to sustainability, ecological cost, and broader developmental responsibility.

Sustainability, Institutional Quality, and the Developmental Limits of Digital Finance

The transformation of management through digital finance and new monetary systems cannot be assessed adequately without reference to sustainability, institutional quality, and long-term developmental constraints. Financial innovation is often presented as a story of speed, inclusion, efficiency, and disruption. Yet contemporary organizations operate in environments where ecological cost, macroeconomic fragility, governance quality, and developmental asymmetries shape the real horizon of strategic action. For this reason, management in the age of digital money must be judged not only by technological sophistication or market success, but also by its capacity to operate responsibly within broader social, environmental, and institutional limits (Bekun et al.; Alonso Dos Santos, Huertas González-Serrano, and Staniewski 2022).

This broader horizon is especially important because financial and technological systems are never disembodied. They depend on material infrastructures, regulatory settings, and patterns of energy use. The litera-

ture on Bitcoin's environmental impact makes this point unmistakably clear. Both the earlier analysis of the carbon footprint of Bitcoin and the later reassessment of that footprint demonstrate that digital financial systems may generate significant ecological costs, especially where consensus mechanisms require extensive energy consumption (Stoll, Klaaßen, and Gallersdörfer 2019; de Vries et al. 2022). For management, this means that innovation in money and finance must be evaluated not only in terms of transactional efficiency, but also in terms of material sustainability and long-term environmental consequence.

A related argument appears in research on blockchain and sustainable supply-chain management in developing countries. Kshetri's analysis shows that blockchain may support transparency, traceability, and coordination, but only when technological adoption is embedded within wider developmental and institutional capacities (Kshetri 2021). This is highly relevant to management more broadly. Digital infrastructures do not become socially or organizationally beneficial simply by being introduced. Their value depends on governance quality, implementation capacity, and the ability to align technological systems with developmental priorities.

The developmental environment itself remains decisive. Bekun and his co-authors demonstrate that energy-intensive growth and transition pathways in developing countries are deeply affected by renewable energy capacity and open market conditions (Bekun et al.). Their argument helps clarify that management operates within broader political-economic settings that influence strategic opportunity, cost structures, and long-term viability. In a related way, Alonso Dos Santos, Huertas González-Serrano, and Staniewski argue that innovation, management, and governance must be coordinated if sustainable growth is to remain possible (Alonso Dos Santos, Huertas González-Serrano, and Staniewski 2022). These works jointly indicate that management in a digitally transformed financial environment cannot be separated from questions of energy transition, institutional design, and developmental responsibility.

Institutional quality is equally important. The study on corruption and domestic savings in Nigeria shows that corruption weakens the broader

economic basis on which organizational and financial activity depends (Abu and Staniewski 2022). Likewise, the analysis of inflation and exchange-rate effects on pension systems in Malaysia highlights how macroeconomic instability reshapes the real value of long-term financial arrangements (Ruiz Estrada et al.). These insights matter directly for management. Organizations do not plan, invest, or innovate under conditions of abstract neutrality. They operate within monetary and institutional settings that either stabilize or destabilize strategic action. Governance quality, anti-corruption capacity, and macroeconomic credibility therefore remain part of the contemporary managerial horizon.

For this reason, sustainable development must be treated as more than an external ethical add-on. It becomes one of the criteria by which managerial adequacy is judged. Sen's conception of development as freedom is especially useful here because it emphasizes that economic transformation should be evaluated in terms of human capability rather than narrow accumulation alone (Sen 1999). The Catholic social tradition reinforces a similar point from a different angle. Caritas in veritate, Sollicitudo rei socialis, and Laudato si' all insist that economic and technological development must remain ordered toward the common good, human dignity, solidarity, and care for the shared world (Benedykt XVI 2009; John Paul II 1987; Franciscus 2015). In the context of digital finance, these perspectives caution against evaluating innovation solely by speed, decentralization, or speculative profitability.

The contemporary paradigm of management must therefore integrate financial innovation with sustainability, institutional quality, and developmental responsibility. Digital money, AI-driven finance, and blockchain-based systems may expand organizational possibilities, but they do not suspend the need for governance, ecological awareness, and normative orientation. On the contrary, they intensify that need. Management becomes credible in the age of digital finance only when it can connect technological capacity with institutional trust, economic innovation with social responsibility, and strategic action with long-term sustainability.

Conclusion

The analysis presented in this article confirms that contemporary management is undergoing a transformation that cannot be understood adequately within the boundaries of a purely classical or purely organizational framework. The traditional functions of planning, organizing, leading, and controlling remain indispensable, yet they are no longer sufficient for interpreting management in an environment shaped by digital finance, intelligent systems, technological mediation, and changing forms of money. The central conclusion of the article is that management today must be understood as an integrative practice operating simultaneously within organizational, technological, financial, regulatory, and ethical horizons.

The first major conclusion concerns the enduring relevance of the classical foundations of management. These foundations have not been displaced. On the contrary, they continue to provide the conceptual grammar of managerial action. Yet their practical meaning has changed. Planning increasingly involves anticipation under conditions of financial volatility and technological disruption. Organizing includes not only formal structures, but also digital infrastructures, informational flows, and technologically mediated forms of coordination. Leading requires the ability to guide organizations through uncertainty, innovation, and changing institutional conditions. Controlling is increasingly linked to feedback systems, compliance regimes, real-time data, and systemic risk awareness rather than to simple hierarchical supervision alone (Robbins and Coulter 2020; Daft 2016; Jones and George 2020; Schermerhorn and Bachrach 2023).

The second conclusion concerns knowledge, organizational learning, and human capital. In the age of digital finance, no organization can function effectively without the capacity to create, structure, share, and apply knowledge in a strategic way. Knowledge management is therefore not an auxiliary managerial technique, but one of the principal forms in which management is now exercised. Human capital assumes corresponding importance, because technological and financial transformation can

become organizationally productive only when supported by competences, communication, learning capacity, and adaptive judgment. The contemporary organization is therefore not merely a system of control, but a learning environment built on human capability and institutionalized knowledge (Staniewski, "Zarządzanie wiedzą: od koncepcji do praktyki działania," 35-48; Staniewski, "Zarządzanie wiedzą w przedsiębiorstwach - przegląd badań"; Staniewski, "The Elements of Human Resources Management Supporting Knowledge Management," 283-291; Staniewski, "Human Resources Architecture of European Union New Member Country - Case of Poland"; WEF 2020).

The third conclusion concerns entrepreneurship. Entrepreneurship can no longer be interpreted adequately as a purely individual or narrowly economic phenomenon. It is a relational and systemic process shaped by family communication, self-esteem, achievement motivation, self-efficacy, educational opportunity, and wider socioeconomic conditions. At the same time, in a world of platforms, AI, fintech, and blockchain-based innovation, entrepreneurship increasingly becomes a mechanism through which organizations and individuals create and organize new forms of value. This means that contemporary management must pay greater attention not only to innovation itself, but also to the communicative, social, and developmental conditions under which initiative and adaptive agency become possible (Staniewski and Awruk; Staniewski, Awruk, Leonardi, and Słomski 2024; Staniewski, Awruk, Leonardi, and Słomski 2025; Staniewski and Szopiński; Cruz-Cárdenas et al. 2019; Costa-Climent, Navarrete, Haftor, and Staniewski 2024).

The fourth conclusion concerns artificial intelligence and fintech. These do not merely improve selected managerial functions. They alter the architecture of decision-making, the temporality of organizational action, and the relationship between information and judgment. Intelligent finance emerges as a field in which algorithmic systems, predictive modelling, digital platforms, and automated financial processes increasingly shape how organizations evaluate risk, allocate resources, interpret data, and govern complex environments. Yet the article has also shown that techno-

logical sophistication alone does not guarantee sustainable value. AI and fintech become managerially productive only when they are integrated with human competence, strategic clarity, and responsible organizational oversight (Estrada, Park, and Staniewski 2023; Allen 2022; Costa-Climent, Haftor, and Staniewski, *Intelligent Transformation*; Costa-Climent, Navarrete, Haftor, and Staniewski 2024).

The fifth conclusion concerns digital money and crypto-assets. The contemporary manager can no longer assume money as a fully stable background institution. Digital payment systems, cryptocurrencies, tokenized assets, and blockchain-based infrastructures have made money itself an object of technological design, legal contestation, and institutional transformation. This changes the environment of management in a fundamental way. Organizations must increasingly respond not only to markets and competition, but also to changing architectures of trust, shifting regulatory frameworks, new forms of financial intermediation, and evolving legal definitions of value and exchange. Management in the age of digital money therefore becomes more deeply involved with governance, compliance, legal intelligibility, and systemic financial risk (Prasad 2021; BIS 2018; Alvarez, Argente, and Van Patten 2022; De Filippi and Wright 2018; Regulation (EU) 2023/1114; SEC v. W.J. Howey Co., 328 U.S. 293 [1946]).

The sixth conclusion is that innovation in money and finance cannot be evaluated in purely technical or economically instrumental terms. The literature examined in this article shows that digital financial systems are entangled with broader disputes concerning freedom, decentralization, political authority, law, privacy, illicit use, and public accountability. For this reason, management in contemporary financial environments requires more than technological literacy or strategic opportunism. It also requires ethical judgment and institutional responsibility. Organizations engaging with intelligent finance or digital money must be able to evaluate not only efficiency and profitability, but also legitimacy, transparency, social consequence, and long-term trustworthiness (Hayek 1976; Hayek 1978; Les-

sig 1999; Fuller 1969; Chaum 1985; Foley, Karlsen, and Putniņš 2019; Golumbia 2016; Morozov 2013; UNODC 2019).

A further conclusion concerns the broader developmental and sustainability context within which management now operates. Financial and technological transformation does not occur in a vacuum. It intersects with energy consumption, ecological costs, governance quality, corruption, inflation, market openness, and long-term developmental constraints. This means that management cannot be treated as a self-contained organizational technique. It must be interpreted as a practice embedded in wider institutional, social, and environmental realities. Sustainable development therefore becomes not an optional moral supplement, but one of the central criteria by which the adequacy of contemporary management should be judged (Bekun et al.; Alonso Dos Santos, Huertas González-Serrano, and Staniewski 2022; Abu and Staniewski 2022; Ruiz Estrada et al.; de Vries et al. 2022; Stoll, Klaaßen, and Gallersdörfer 2019; Kshetri 2021; Franciscus 2015; Benedykt XVI 2009; John Paul II 1987; Sen 1999).

Taken together, these conclusions justify the central thesis of the article. Contemporary management is being transformed from a predominantly function-based and control-oriented model into an integrative paradigm grounded in organizational learning, human capital, entrepreneurship, technological intelligence, financial transformation, regulatory governance, and sustainability-oriented responsibility. This transformation does not abolish the older tradition of management theory. Rather, it extends and redefines it under more complex historical conditions. The organization must now be understood not only as an administrative structure or a productive system, but as a dynamic and financially embedded actor operating within changing architectures of money, technology, law, and value.

The article also carries an important methodological implication. The transformation under discussion cannot be understood adequately from the standpoint of a single discipline alone. A purely managerial, economic, legal, technological, or philosophical interpretation remains insufficient in isolation. What is required instead is a synthetic perspective ca-

pable of connecting management theory, knowledge management, human-resource development, entrepreneurship studies, AI-related reflection, financial innovation, legal governance, and ethical analysis. The contemporary paradigm of management is therefore integrative not only in substance, but also in method.

Finally, the study points toward further research. Future work should examine more closely how organizations actually govern the interaction between intelligent finance, human capital, and digital monetary systems in specific sectors and institutional environments. Particularly promising would be research on the relation between fintech innovation and organizational trust, between AI-driven finance and managerial accountability, between digital money and legal governance, and between financial innovation and ecological sustainability. Such work would help determine more precisely how the emerging paradigm described in this article operates in practice and where its principal tensions remain unresolved.

In its final form, then, the argument of this article may be stated simply: management in the contemporary world can no longer be defined adequately as control over organizational resources alone. It is increasingly defined by the capacity to coordinate knowledge, develop people, cultivate entrepreneurial initiative, govern intelligent technologies, navigate financial transformation, and act responsibly within a changing monetary and institutional order. This is the defining task of management in the age of digital finance and new money

Bibliography

ABU, N., and STANIEWSKI, M. W. 2022. “An Empirical Investigation of the Effect of Corruption on Domestic Savings in Nigeria.” *Economic Research-Ekonomska Istraživanja* 35 (1): 4092–4112.

ALLEN, H. J. 2022. *Driverless Finance: Fintech’s Impact on Financial Stability*. Oxford: Oxford University Press. ISBN 9780197626801.

ALONSO DOS SANTOS, M., HUERTAS GONZÁLEZ-SERRANO, M., and STANIEWSKI, M. W. 2022. “Analytical Editorial: Ensuring the

Future of Our World: Innovation, Management and Governance for Sustainable Growth." *Academia Revista Latinoamericana de Administración* 35 (2): 117–130.

ALVAREZ, F. E., ARGENTE, D., and VAN PATTEN, D. 2022. *Are Cryptocurrencies Currencies? Bitcoin as Legal Tender in El Salvador*. NBER Working Paper No. 29968. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w29968.

BATEMAN, T. S., SNELL, S., and KONOPASKE, R. *Management: Leading & Collaborating in a Competitive World*. New York, NY: McGraw-Hill Education.

BANK FOR INTERNATIONAL SETTLEMENTS (BIS). 2018. *Annual Economic Report 2018*. Chapter V: "Cryptocurrencies: Looking Beyond the Hype." Basel: Bank for International Settlements.

BENEDYKT XVI. 2009. *Caritas in veritate*. Watykan: Libreria Editrice Vaticana.

BEKUN, F. V., FUMEY, M. P., STANIEWSKI, M. W., SUN, L., and AGBOOLA, P. O. "Energy Intensive Growth and the Transition Pathways: Insights into the Role of Renewable Energy and Open Market Conditions in Developing Countries." *Energy* 322: 135192.

BUTERIN, V. 2022. *Proof of Stake: The Making of Ethereum and the Philosophy of Blockchains*. Edited by Nathan Schneider. New York: Seven Stories Press. ISBN 9781644212486.

CHAUM, D. 1985. "Security without Identification: Transaction Systems to Make Big Brother Obsolete." *Communications of the ACM* 28 (10): 1030–1044. https://doi.org/10.1145/4372.4373.

COSTA-CLIMENT, R., and HAFTOR, D. M., and STANIEWSKI, M. W. *Intelligent Transformation: Navigating the AI Revolution in Business and Technology*. In *Artificial Intelligence and Business Transformation: Impact in HR Management …*

COSTA-CLIMENT, R., NAVARRETE, S. R., HAFTOR, D. M., and STANIEWSKI, M. W. 2024. "Value Creation and Appropriation from the Use of Machine Learning: A Study of Start-Ups Using Fuzzy-Set Qualita-

tive Comparative Analysis." *International Entrepreneurship and Management Journal* 20 (2): 935–967.

CRUZ-CÁRDENAS, J., GUADALUPE-LANAS, J., ZABELINA, E., PALACIO-FIERRO, A., et al. 2019. "Consumer Value Creation through WhatsApp Use: A Qualitative Multimethod Approach in a Latin American Scenario." *Academia Revista Latinoamericana de Administración* 32 (4): 455–471.

DAFT, R. L. 2016. *Management*. Boston, MA: Cengage Learning.

DE FILIPPI, P., and WRIGHT, A. 2018. *Blockchain and the Law: The Rule of Code*. Cambridge, MA: Harvard University Press. ISBN 9780674976429.

DE VRIES, A., GALLERSDÖRFER, U., KLAAßEN, L., and STOLL, C. 2022. "Revisiting Bitcoin's Carbon Footprint." *Joule* 6 (3): 498–502. https://doi.org/10.1016/j.joule.2022.02.005.

DRUCKER, P. F. 1974. *Management: Tasks, Responsibilities, Practices*. New York: Harper & Row.

ESTRADA, M. A. R., PARK, D., and STANIEWSKI, M. 2023. "Artificial Intelligence (AI) Can Change the Way of Doing Policy Modelling." *Journal of Policy Modeling* 45 (6): 1099–1112.

EUROPEAN PARLIAMENT AND COUNCIL OF THE EUROPEAN UNION. 2023. *Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets, and Amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (Text with EEA Relevance).* OJ L 150, 9 June 2023, p. 40.

FOLEY, S., KARLSEN, J. R., and PUTNIŅŠ, T. J. 2019. "Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed Through Cryptocurrencies?" *The Review of Financial Studies* 32 (5): 1798–1853. https://doi.org/10.1093/rfs/hhz015.

FRANCISCUS. 2015. *Laudato si'. De communi domo colenda*. Civitas Vaticana: Libreria Editrice Vaticana.

FULLER, L. L. 1969. *The Morality of Law*. Rev. ed. New Haven: Yale University Press. ISBN 9780300010701.

GRIFFIN, R. W. 2021. *Fundamentals of Management*. Boston, MA: Cengage.

GOLUMBIA, D. 2016. *The Politics of Bitcoin: Software as Right-Wing Extremism*. Minneapolis: University of Minnesota Press. ISBN 9781517901806.

HAYEK, F. A. 1976. *Denationalisation of Money: An Analysis of the Theory and Practice of Concurrent Currencies*. London: Institute of Economic Affairs. ISBN 9780255360876.

HAYEK, F. A. 1978. *Denationalisation of Money: The Argument Refined: An Analysis of the Theory and Practice of Concurrent Currencies*. 2nd ed. London: Institute of Economic Affairs. ISBN 9780255361057.

INTERNATIONAL MONETARY FUND (IMF). 2021. *Global Financial Stability Report, October 2021: COVID-19, Crypto, and Climate: Navigating Challenging Transitions*. Washington, DC: International Monetary Fund.

IUSTINIANUS. 1870. *Digesta Iustiniani Augusti*. Recognovit Theodorus Mommsen, adsumpto Paulo Kruegero. Berolini: apud Weidmannos.

JOHN PAUL II. 1987. *Sollicitudo rei socialis*. Vatican City: Libreria Editrice Vaticana.

JONES, G. R., and GEORGE, J. M. 2020. *Contemporary Management*. New York, NY: McGraw-Hill Education.

RAWLS, J. 1971. A Theory of Justice. Cambridge, MA: Harvard University Press. ISBN 9780674880108.

KINICKI, A., and WILLIAMS, B. K. 2018. *Management: A Practical Introduction*. New York, NY: McGraw-Hill Education.

KSHETRI, N. 2021. "Blockchain and Sustainable Supply Chain Management in Developing Countries." *International Journal of Information Management* 60: 102376. https://doi.org/10.1016/j.ijinfomgt.2021.102376.

LESSIG, L. 1999. *Code and Other Laws of Cyberspace*. New York: Basic Books. ISBN 9780465039128.

MAURER, B., NELMS, T. C., and SWARTZ, L. 2013. "'When Perhaps the Real Problem Is Money Itself!': The Practical Materiality of Bit-

coin." *Social Semiotics* 23 (2): 261–277. https://doi.org/10.1080/10350330.2013.777594.

MOROZOV, E. 2013. *To Save Everything, Click Here: The Folly of Technological Solutionism*. New York: PublicAffairs. ISBN 9781610391382.

NARAYANAN, A., BONNEAU, J., FELTEN, E., MILLER, A., and GOLDFEDER, S. 2016. *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction*. Princeton, NJ: Princeton University Press. ISBN 9780691171692.

NOZICK, R. 1974. *Anarchy, State, and Utopia*. New York: Basic Books. ISBN 9780465097203.

PRASAD, E. S. 2021. *The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance*. Cambridge, MA: The Belknap Press of Harvard University Press. ISBN 9780674258440.

ROBBINS, S. P., and COULTER, M. 2020. *Management*. Hoboken, NJ: Pearson.

ROTHBARD, M. N. 1973. *For a New Liberty: The Libertarian Manifesto*. New York: Collier Macmillan. ISBN 9780026053006.

RUIZ ESTRADA, M. A., KHAN, A., STANIEWSKI, M., and MANSOR, N. "How Inflation and the Exchange Rate Affect the Real Value of Pension Plan Systems: The Case of Malaysia." *SSRC Working Paper Series*.

SCHERMERHORN, J. R., Jr., and BACHRACH, D. G. 2015. *Introduction to Management*. Hoboken, NJ: Wiley.

SCHERMERHORN, J. R., Jr., and BACHRACH, D. G. 2023. *Management*. Hoboken, NJ: Wiley.

SEC v. W.J. HOWEY CO., 328 U.S. 293 (1946).

SEN, A. 1999. *Development as Freedom*. New York: Alfred A. Knopf. ISBN 9780375406195.

STANIEWSKI, M. "Zarządzanie wiedzą: od koncepcji do praktyki działania." *Organizacja i Kierowanie*: 35–48.

STANIEWSKI, M. "Zarządzanie wiedzą w przedsiębiorstwach – przegląd badań." In DĄBROWSKI, J., and GIERSZEWSKA, G., eds. *Strate-*

gie przedsiębiorstw a zarządzanie wiedzą. Warszawa: Wydawnictwo WSPiZ im. Leona Koźmińskiego.

STANIEWSKI, M. "Zarządzanie zasobami ludzkimi a zarządzanie wiedzą." In *Zarządzanie wiedzą*. 2nd ed. Warsaw: Oficyna a Wolters Kluwer Business.

STANIEWSKI, M. W. "Human Resources Architecture of European Union New Member Country – Case of Poland." *Problems and Perspectives in Management* 2: 5–13.

STANIEWSKI, M. W. "Management of Human Resources in the Aspect of Innovativeness." *Contemporary Economics* 5 (1): 84–91.

STANIEWSKI, M. W. "The Elements of Human Resources Management Supporting Knowledge Management." *Amfiteatru Economic*, Special Issue: 283–291.

STANIEWSKI, M. W., and AWRUK, K. *Systems Approach to Entrepreneurial Success: The Theoretical Discussion on the Significance of Family Factors for Effective Entrepreneurship*. In *Inside the Mind of the Entrepreneur: Cognition, Personality Traits …*

STANIEWSKI, M. W., AWRUK, K., and LEONARDI, G. "Entrepreneur's Family Communication Questionnaire—Psychometric Properties of the Tool." *Technological Forecasting and Social Change* 190: 122418.

STANIEWSKI, M. W., AWRUK, K., LEONARDI, G., and SŁOMSKI, W. 2024. "Family Determinants of Entrepreneurial Success—The Mediational Role of Self-Esteem and Achievement Motivation." *Journal of Business Research* 171: 114383.

STANIEWSKI, M., AWRUK, K., LEONARDI, G., and SŁOMSKI, W. 2025. "Family Communication and Entrepreneurial Success—The Mediating Role of Entrepreneurial Self-Efficacy." *Journal of Innovation & Knowledge* 10 (1): 100635.

STANIEWSKI, M., and SZOPIŃSKI, T. "Influence of Socioeconomic Factors on the Entrepreneurship of Polish Students." *Transformations in Business & Economics* 12 (3(30)): 152–167.

STANIEWSKI, M. W., SŁOMSKI, W., and AWRUK, K. "Ethical Aspects of Entrepreneurship." *Filosofija. Sociologija* 26 (1).

STOLL, C., KLAAßEN, L., and GALLERSDÖRFER, U. 2019. "The Carbon Footprint of Bitcoin." *Joule* 3 (7): 1647–1661. https://doi.org/10.1016/j.joule.2019.05.012.

TAPSCOTT, D., and TAPSCOTT, A. 2016. *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World*. New York: Portfolio / Penguin. ISBN 9781101980132.

UNITED NATIONS OFFICE ON DRUGS AND CRIME (UNODC). 2019. *World Drug Report 2019*. Vienna: United Nations Office on Drugs and Crime.

WORLD ECONOMIC FORUM (WEF). 2020. *Jobs of Tomorrow: Mapping Opportunity in the New Economy*. Geneva: World Economic Forum.

WILLIAMS, C. 2018. *MGMT: Principles of Management*. Boston, MA: Cengage 4LTR Press.