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*Modern Technologies, Financial Tools  
and Tools of the National Tax  
Administration and the Management  
of an Enterprise from the SME Sector*

ABSTRACT

The sector of small and medium-sized enterprises is the backbone of the European economy. It covers a significant percentage of employment and added value. At the same time, it operates under increasing technological, regulatory and competitive pressure. Modern financial tools, including cloud-based tools, fintech solutions and artificial intelligence algorithms in the area of data analysis and decision-making, have recently gained particular importance. The aim of the article is to analyze the impact of modern technologies, as well as financial tools and the Polish National Tax Administration (KAS), on the management of an enterprise from the SME sector. It was shown that the implementation of modern technologies, financial tools and KAS tools leads to a significant change in the information architecture of the organization and to a shift in the burden of company management. The issues discussed in the article indicate that the broadly understood digitalization of the enterprise, the introduction of new

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administrative tools is a process redefining the structure of entrepreneurship, management and responsibility in the enterprise. The article is analytical and empirical. It uses research methods and tools, including literature analysis, observation and case studies.

*KEYWORDS: management; finance; AI; KAS; tax administration; enterprise*

## INTRODUCTION

MSMEs play a fundamental role in the structure of the European Union's economy, generating more than half of the value added of the private sector and a significant proportion of jobs (Etemad, 2022). However, their importance is not proportional to the level of resources at their disposal. Limited access to capital, simplified organizational structures and the concentration of decisions in the hands of the owner mean that management processes are often intuitive and reactive (Mazurek-Kucharska & Dębski, 2016).

Recent years have brought changes in the institutional and technological environment. The implementation of the process of introducing new tools of the National Tax Administration (Krajowa Administracja Skarbowa, KAS), digitalization of public administration, the development of technology, as well as the dynamic increase in the importance of artificial intelligence, shows that the traditional management model in SMEs is becoming insufficient. According to Eurostat data, the share of companies in the EU using AI tools is steadily increasing, and the adoption rate in the SME sector is significantly lower than in large entities (Eurostat, 2025). In this case, we are talking about a technological gap that can translate into competitive differences.

## CHARACTERISTICS OF THE SME SECTOR

The Act of 6 March 2018 – Entrepreneurs’ Law divides enterprises as follows:

1) micro-entrepreneur – an entity that for at least one year out of two employed fewer than 10 employees, the annual net turnover was lower than that of the the equivalent in PLN EUR 2 million or the sum of assets of the balance sheet in one of the two years did not exceed the equivalent of EUR 2 million in PLN;

2) small entrepreneur – an entity that for at least one of the two previous years employed less than 50 employees, the annual net turnover was lower than the PLN equivalent of EUR 10 million, or the sum of assets on the balance sheet of one of the two years did not exceed the equivalent of EUR 10 million in PLN and is not a micro-entrepreneur;

3) a medium-sized enterprise – an entity that has employed fewer than 250 employees for at least one of the two previous years, the annual net turnover was lower than the PLN equivalent of EUR 50 million or the total assets of the balance sheet of one of the two years did not exceed the equivalent of EUR 43 million in PLN and is not a small entrepreneur (Act of 6 March 2018).

From the perspective of management sciences and the Polish definition of the SME sector, it seems extremely important to take into account the fact that companies from the SME sector are the largest group of economic entities in the modern economy, not only in Poland, but also in the global economy (Lachiewicz & Matejun, 2012).

In Poland, the sector of small and medium-sized enterprises is of great importance for the economy and, consequently, for public finances (Furman et al., 2025). This sector accounts for 99.8% of all enterprises (PARP, 2025).

## DIGITALIZATION AND THE FUNCTIONING OF ENTERPRISES

In the literature, digital transformation is defined as the strategic use of technology to change the way we create value (Rogers, 2016; Herbert, 2017). In the case of enterprises, this process includes, for example, accounting automation, integration of reporting systems, including to tax offices, the use of predictive analytics, as well as the development of fintech tools that enable flexible management of the company (Hill, 2018; Hilpisch, 2020). Digital transformation in business management is sometimes described in the literature in several perspectives. The first emphasizes the change in technology and infrastructure, the second concerns the reconstruction of processes, and the third refers to the transition from decisions based on intuition and historical data to decisions supported by current analytics.

At the same time, digitalization is not limited to the operational level. The introduction of structured e-invoicing systems, such as the National e-Invoicing System (Krajowy System e-Faktur, KSeF), which was introduced in Poland on 1 February 2026, means a profound change in the circulation of documents and the relationship between the company and the public administration. Combined with EU regulations on artificial intelligence (Regulation 2024/1689) and digital resilience of the financial sector (Regulation 2022/2554 DORA), this creates a new context for the functioning of SMEs.

In the light of the above, one can consider whether modern technologies and financial tools only streamline processes or lead to a change in the management logic itself.

Strategically, digitalization means using technology to change the way value is created and rebuild relationships with customers, suppliers, and institutions around them (Rogers, 2016; Herbert, 2017). For SMEs, the limited capacity to absorb innovation is a key differentiator. It includes both financial resources and organizational competencies, including the ability to integrate data

and processes. In practice, many enterprises from the SME sector digitize selected parts of their activities: accounting, invoicing, reporting, payments, and less often build a coherent management system combining financial and operational data.

At the same time, digital transformation is accelerating as a result of institutional pressure. The digitalization of public administration, reporting requirements, tools for control and standardization of documents are becoming an element of the environment that forces the improvement of procedural maturity. In Polish conditions, KSeF is an example of this. The KAS introduces not only a technical tool, but also a data standard, which in practice forces the organization of document circulation and the integration of accounting systems with the company's internal systems. This phenomenon can be interpreted as a transition from voluntary to regulatory-driven digitalization.

In the literature on technology in corporate finance two threads are clearly growing in importance: automation and prediction. Automation includes accounting processes, document circulation, integration with electronic banking, as well as management reporting. It results in shortening the information cycle and reducing manual errors. Prediction, on the other hand, concerns forecasting cash flows, financial results, customer credit risk and cost scenarios (Hilpisch, 2020).

It is worth emphasizing that the adoption of AI in the SME sector is uneven (Sikorski & Przychocka, 2026). On the one hand, there is a growing interest in AI tools, on the other hand, there is a gap between large companies and SMEs in terms of the degree of use of more advanced applications, especially in finance, controlling and risk analysis. The OECD points out that the adoption of AI in SMEs remains relatively low compared to larger companies, with barriers being m.in but not limited to competence shortages, costs, data issues and regulatory uncertainty (OECD, 2025). Eurostat data confirm that although the use of digital technologies

is increasing, the pace of change varies and depends on the size of the company and the industry (Eurostat, 2025).

In studies on the context of digital transformation, it is often emphasized that technological implementations do not guarantee improved financial performance if they are not integrated into the decision-making process. In other words, technology can improve operations, but it doesn't have to change the way decisions are made. In the SME sector, this means the risk of "digital superficiality": the company bears the costs of implementing the tools, but still operates in an intuitive logic and treats data only as reporting. In this context, an integrative approach is justified, describing the transformation of finance not as a set of tools, but as a change in the management architecture.

#### DIGITAL TRANSFORMATION AND PREDICTIVE MANAGEMENT IN SMES

In the literature on digitalization of finance, the concept of real-time data-driven management is increasingly emerging. This article proposes a broader approach to this category by introducing the concept of predictive management.

Predictive management can be defined as a management model in which strategic and operational decisions are made on the basis of current data analysis and scenario simulations, rather than solely on historical data and managerial experience. Analytical tools, including artificial intelligence algorithms that enable forecasting financial results, identifying risks and optimizing cash flows, play a key role in it.

Sikorski and Przychocka (2024) indicate that the use of AI in financial management leads to a change in the structure of the decision-making process by shortening reaction time and increasing the accuracy of forecasts. The authors emphasize that predictive

technologies reduce information asymmetry within the organization and enable more conscious financial risk management. In this perspective, AI is not just a tool supporting accounting, but an element of the management infrastructure.

Developing this perspective, it can be concluded that predictive management in SMEs is based on three pillars:

- integration of financial and operational data in near real time,
- the use of forecasting models to simulate scenarios,
- interpretative competences of the management staff.

This model is fundamentally different from traditional reactive management, in which analysis occurs after an economic event occurs. In conditions of high market volatility, the reactive model limits the company's ability to adapt.

Digital transformation in the area of corporate finance does not only improve operational efficiency, but can also be a source of lasting competitive advantage. In terms of the company's resources (resource-based view), the ability to quickly process information, predict market changes and dynamically adapt financial processes can be treated as a strategic organizational resource.

Companies implementing advanced analytics systems gain an advantage by identifying liquidity risks faster, managing margins more accurately, and allocating financial resources more efficiently. As a consequence, the competitive advantage does not result only from lower operating costs, but from the higher quality and speed of management decisions made.

In this context, we can talk about the emergence of a new category of competitive advantage referred to as information and analytical advantage, the foundation of which is the ability of organizations to transform financial data into useful management knowledge.

## REACTIVE VS. PREDICTIVE MANAGEMENT

A shift towards a predictive model also leads to a redefinition of managerial responsibility. In a traditional SME, the owner plays the role of a central decision-maker, and the decision-making process is intuitive. In the predictive model, decisions are preceded by a variant analysis, which forces greater transparency and documentation of assumptions.

According to the approach presented by Sikorski and Przychocka (2024), the use of AI tools in finance is conducive to the formalization of the decision-making process and increased analytical discipline. This means that predictive management does not eliminate the role of the human being, but changes its character from intuitive to interpretative and supervisory.

At the same time, a new risk arises related to excessive trust in algorithmic models. Predictive management therefore requires a balance between automation and managerial responsibility. In order for predictive management not to remain just a label describing the use of forecasts, it is necessary to frame it as a coherent organizational framework.

The data layer includes sources of financial and operational information. In practice, this means combining accounting, banking, sales, warehouse, HR and contract data in a way that allows them to be processed consistently. The condition for the operation of the predictive model is to minimize data discrepancies, unify the definition of indicators and build data quality routines. For SMEs, this is an important moment in the transition from “data as documents” to “data as a management resource”.

The analytical layer includes a set of methods and tools that transform data into forecasts, scenarios, and recommendations. In the simplest variant, these are dashboards and deviation analyses. In the more advanced variant, there are predictive models that forecast cash flows, profitability of customer segments, the probability of payment delays, and the impact of price and cost

changes on the financial result. From a management perspective, it is not the prediction itself that is crucial, but the transition to scenario decisions: decisions made after comparing options and assessing their consequences.

The decision layer is about how an organization uses analytics results. Predictive management assumes that strategic and operational decisions are preceded by a validation stage: assessment of data quality, model assumptions, stability of patterns and interpretative constraints. It is in this layer that the role of the owner and managers is formed: from the role of an intuitive decision-maker to the role of a person who manages the parameters of the decision-making process, including the risk of the model.

In practice, the predictive model can be described as a four-step cycle. First, the recording and integration of economic events in as close to real time as possible. Second, the conversion of the impact of these events into key indicators and forecasts. Third, a comparison of scenarios and a decision. Fourth, the impact assessment and the correction of the model.

The transition from reactive to predictive management does not occur as a result of a one-time implementation of technology, but is the result of an accumulation of organizational, informational and competency changes. In this approach, this transformation can be described through four interrelated mechanisms: shortening the information cycle, moving from reporting to control, scenario decision-making, and redefining responsibility. These mechanisms do not operate in isolation. They create a logical sequence in which a change in the data infrastructure leads to a change in the management logic.

Shortening the information cycle in the reactive model, financial information is retrospective. Data is aggregated on a monthly or quarterly basis, and reports are mainly used for reporting and control purposes. Decisions are made after an event occurs, often under conditions of limited data timeliness. The information cycle includes: registration of a business event, its accounting, data

aggregation, preparation of a report, analysis and decision. In SMEs, this cycle can be extended due to manual processes, lack of system integration and limited human resources.

**Implementation** The use of cloud systems, accounting automation and integration with electronic banking lead to a shortening of this cycle. Data on sales, payments, accounts receivable, and payables become available in near real time. As a result, the delay between the economic event and its analysis is significantly reduced. Shortening the information cycle does not only mean speeding up reporting. It means a change in the relationship between information and action. Information ceases to be a summary of the past, and becomes a current control signal.

An important aspect of the implementation of new financial technologies is also the assessment of the economic effectiveness of technological investments. From the perspective of corporate financial management, the implementation of digital systems should be analyzed not only as an operating cost, but as a strategic investment, the effectiveness of which can be assessed through ROI, NPV or return on investment indicators.

In practice, this means that it is necessary to measure the impact of the implemented technologies on shortening process times, reducing administrative costs, improving financial liquidity and increasing operating profitability. The lack of measurable economic evaluation of implementations may lead to excessive technological investments without real translation into the company's results.

The second mechanism is from reporting to control, which can be described as a transition from a static picture of financial position to a dynamic control loop. In the reporting model, financial data are presented in the form of statements and indicators that describe the state of the company at a specific moment. The recipient of the report interprets and possibly makes a decision, but there is no formally defined feedback cycle.

In the predictive model, reporting is combined into a control process. The input generates a forecast, the forecast influences the decision, the decision changes the parameters of the action, and subsequent data allows you to assess the effects of that decision. This creates a closed management loop. It is technologically supported by dashboards, alerts, predictive models and automatic indicator updates. Organizationally, it requires routine: regular reviews, documenting decisions and comparing results with assumptions.

The third mechanism is decision that distinguishes a predictive model from a model based solely on current data. In the reactive model, decisions are often binary: to approve or reject, to increase or decrease costs, to raise or decrease prices. In the predictive model, decisions are preceded by an analysis of variants and simulation of their consequences.

This means that the company does not analyze a single forecast, but several alternative trajectories of the development of the financial situation. In doing so, it uses models that take into account seasonality, cost volatility, customer behaviour or possible payment delays. The key point is that the decision does not only concern the current state, but the anticipated distribution of future states. The introduction of scripting changes the decision-making culture. The decision is no longer just a choice of the best option, but a conscious choice of the option at a certain level of risk. An organization learns probabilistic thinking, in which it does not eliminate uncertainty, but tries to estimate and control it.

The fourth mechanism is the redefinition of conditions of increasing automation. In the reactive model, the responsibility rests almost entirely with the decision-maker, who relies on experience and a limited range of data. In the predictive model, part of the analysis is transferred to IT systems, including predictive algorithms. However, this does not mean delegating decisions to technology.

In the face of increasing transparency requirements for AI systems, an organization should be able to explain how specific recommendations are made. This means that you need to maintain control over the parameters of your models, rather than thoughtlessly accepting their results. Predictability does not absolve you of responsibility, but complicates it because it requires simultaneous outcome management and model management.

#### ARTIFICIAL INTELLIGENCE, NEW TOOLS OF THE NATIONAL TAX ADMINISTRATION IN SME FINANCIAL MANAGEMENT

In recent years, a particular tools have become increasingly important AI supporting business management processes and supporting risk forecasting and analysis (Sikorski & Przychocka, 2024). Machine learning algorithms enable the analysis of seasonality patterns, customer behavior and cost volatility. The literature emphasizes that predictive models increase the accuracy of cash flow forecasts and reduce information asymmetry (OECD, 2025).

The KSeF system, introduced in Poland on 1 February 2026, is sometimes presented primarily as an administrative tool aimed at tightening the tax system and standardizing the circulation of documents. However, from the perspective of managing an SME company, its importance goes beyond the regulatory aspect. KSeF introduces a change in the structure of financial data itself, which has direct consequences for analytics, controlling and predictive management.

A feature of KSeF is a structured electronic invoice format, based on a specific logical scheme. Unlike traditional PDF or paper invoices, a structured invoice contains fields with a clearly defined meaning, data type, and relationships between elements. Each invoice contains consistent identifiers of the parties to the transaction, unambiguous VAT rate markings, precise dates of issue and sale, and separate goods and service items.

From the perspective of financial analytics, this standardization has several important consequences. First, it eliminates ambiguity differences in the way the item is described on the invoice. Data is no longer a textual description of transactions, and becomes a set of structural attributes that can be processed automatically. Second, it introduces a uniform set of identifiers, which makes it easy to combine data from different sources – e.g. sales invoices, purchase invoices, bank payments and warehouse data.

In practice, this means that the invoice becomes an element of a larger data system, and not just an accounting document. In the predictive model, each invoice can be immediately incorporated into the analysis of cash flows, receivables turnover, revenue structure or profitability of customer segments. Technical validation of the invoice by the central system reduces the risk of formal errors, which increases the quality of the input data for analytical models.

In the context of predictive management, the standardization introduced by KSeF is conducive to building a consistent data layer. Models that forecast revenue or payment delays can use uniform fields and categories, reducing the need for manual data cleansing and transformation. As a result, not only is operational efficiency increased, but also the reliability of the analyses.

While KSeF strengthens standardization and data quality, it also introduces new operational and systemic risks that need to be taken into account in the analysis.

The first risk is an emergency infrastructure. In the decentralized model, the system failure affected only one company. In a centralized model, the potential unavailability of the central system may affect a wide range of entities. For SMEs, this means developing contingency procedures, including offline modes, data caching and subsequent synchronization.

The second risk is queues and delays in document processing. During periods of increased system load, there may be delays in assigning identification numbers to invoices. In the context of

predictive management, a delay in invoice registration can affect the timeliness of revenue data and cash flow forecasts.

The third area of risk is data mapping. A company has its own account structure, categories of products and services, and the way contractors are marked. Incorrect field mapping can lead to incorrect classification of transactions, which consequently disrupts financial analytics. In an automated environment, these errors can spread faster than in a manual model.

It is important to that the issue of business continuity. KSeF increases the company's dependence on digital infrastructure. This means that business continuity plans need to include scenarios such as central system unavailability, cyberattacks, or software update failures. In a predictive model, where invoice data is the basis for forecasts, any interruption in data access directly affects the quality of decisions. Despite the identified certain risks, KSeF can act as a catalyst for data maturity in SMEs. It forces the organization of processes, standardization of fields and integration of systems. In the long run, it is conducive to building an environment in which an invoice is not just a tax document, but an element of the financial data ecosystem.

For the predictive model, this means strengthening the data layer, which is the foundation of analytics. Standardization and validation increase the reliability of information, and a central invoice identifier makes it easier to track its lifecycle – from issuance to payment to possible corrections.

Ultimately, KSeF is not just a regulatory tool. It is an intervention in the architecture of financial data. Combined with AI tools and predictive analytics, it can become part of the infrastructure supporting the transition from a reactive to a predictive model. At the same time, it requires conscious management of technological, integration and operational risks, so that its potential is not neutralized by the process immaturity of the organization.

## THE CASE STUDY

The empirical part of the article is based on a case study of a service company from the SME sector, which has recently implemented an integrated financial and accounting system in the cloud, predictive analytics tools and fintech solutions supporting short-term financing, as well as the applicable tools of the National Tax Administration. The analyzed enterprise is a medium-sized enterprise from the sector of small and medium-sized enterprises. The company employs over 100 employees and generates many sales documents, including invoices, per year, with the volume of monthly invoices being seasonal. The operational scale, the number of transactions and the complexity of the sales structure make cash flow management and financial data integration important for the financial stability and operational efficiency of the company. The company's revenues place them in the segment of medium-sized entities. The company has gone through a path of financial transformation: from distributed tools and periodic reporting to an integrated data environment that enables ongoing monitoring and prediction. Such a case allows us to capture the mechanisms of the transition to predictive management, including the costs of organizational adaptation and changes in the structure of responsibility. The company has implemented the applicable KAS tools. Initially, the evaluation of the individual tools introduced was low, which resulted from concerns about the implementation of something new, unknown. At the implementation stage, it was difficult to clearly assess how this will affect the management of the company, or whether it will be another barrier to the company's functioning. Just like new technologies, artificial intelligence, financial tools, the tools of the National Revenue Administration have also been adopted in the daily functioning of the company. The last tool that arouses a lot of controversy among entrepreneurs is KSeF, which came into force on February 1, 2026. However, the assessment of this tool and whether

it has affected the management of the company in any way will only be determined after some time of its operation. Each new tool introduced to enterprise management brings strengths and weaknesses, as well as opportunities and threats.

## CONCLUSION

The analysis allows us to look at the digitalization of finance in SMEs not as a set of distributed technological improvements, but as a process of rebuilding the management architecture. In the literature, digital transformation is often referred to as the modernization of technological infrastructure or a change in business model (Rogers, 2016; Herbert, 2017). However, the results of this study suggest that in the area of finance, this transformation is structural.

First, system integration shortens the information cycle and reduces the delay between an economic event and its analysis. In the traditional model, decisions were made based on historical data. In the digital model, management is based on ongoing monitoring and simulations. According to the concept of data-driven management, access to up-to-date information reduces information asymmetry and increases the accuracy of decisions (Hilpisch, 2020).

Second, we observe a shift in competence level. The owner or manager of an SME ceases to be only an intuitive decision-maker, and becomes an interpreter of the results generated by analytical systems. This requires new competencies, including understanding the limitations of predictive models, assessing data quality, and critically analyzing scenarios. The OECD (2025) indicates that the lack of digital competences is one of the main barriers to AI adoption in SMEs, which may limit the effectiveness of the transition.

Third, it changes relationship between the company and the institutional environment. The introduction of KSeF means standardization of financial data and its partial centralization. This process increases transparency, but also strengthens regulatory oversight and creates an environment in which digitalization is not only a strategic option, but also a systemic requirement.

From the perspective of the theory of organization, we can talk about the transition from a reactive to a predictive model. In the reactive model, decisions are a response to events that have occurred. In a predictive model, an organization tries to anticipate change through data analysis and scenario modeling. In the case under review, the implementation of analytical tools made it possible to simulate the impact of pricing decisions on the financial result and to identify liquidity risks in advance.

At the same time, digital transformation does not eliminate risk, but reconfigures it. The operational risk associated with manual errors is decreasing, while the importance of systemic risk is increasing. It includes:

- digital infrastructure failures,
- data breaches,
- algorithmic errors resulting from inadequate training data,
- dependence on technology providers.

The analysis indicates that the key factor in the success of transformation is the integration of technology into the decision-making process. Fragmented digitalization, which involves the implementation of individual tools without changing the management logic, does not lead to the creation of a predictive model. Only a consistent data architecture makes it possible to use the potential of AI and financial analytics. The analysis allows us to formulate several basic conclusions of a theoretical and practical nature. First, modern financial technologies are changing the information architecture of an enterprise. Financial data are no longer solely a reporting function, and are becoming the basis for ongoing management and strategic planning. Second, the

integration of cloud systems, fintech tools and AI algorithms is conducive to the transition from reactive management to a predictive model. This model is based on ongoing monitoring of indicators, simulation of scenarios and decision support by algorithms. Third, digital transformation requires a redefinition of management competencies. An SME owner must combine analytical skills with critical thinking and the ability to assess technological risk. Fourth, the digitalization of finance leads to a change in the structure of risk. Increased operational efficiency is associated with greater exposure to cyber, regulatory and systemic threats. Fifth, regulations such as KSeF accelerate the transformation process while raising compliance and security requirements.

The digitalization of financial processes also leads to a redefinition of the role of those responsible for financial management in the company. The traditional financial manager model, focused on accounting control and retrospective reporting, is evolving towards the role of a strategic business analyst.

A modern financial manager is increasingly responsible not only for the analysis of historical data, but also for the interpretation of forecasting models, the assessment of strategic scenarios and supervision over the correctness of the functioning of analytical systems. This means a shift in competence from the operational level to the strategic and analytical level.

At the Jagiellonian systemic design, this means that the digitalization of finance is not a technological stage in the SME development cycle, but a moment of paradigm shift in business management. In today's reality, in an uncertain geopolitical situation, in the era of artificial intelligence, developing digitalization, the introduction of new tools by the National Tax Administration, the functioning of enterprises and their management are undoubtedly changing. Companies of all sizes need to be flexible about the ongoing changes, which can be a barrier or a challenge,

especially for the small and medium-sized enterprise sector, but they are necessary and unstoppable.

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