

TRAJECTORIES TOWARD DIGITAL TRANSFORMATION OF BUSINESS POST 2027 IN ROMANIA

Adriana GRIGORESCU

National University of Political Studies and Public Administration
30A Expoziției Boulevard, 012244 Bucharest, RO
Academy of Romanian Scientists
3 Ilfov St., 050094 Bucharest, RO
adriana.grigorescu@snsps.ro

Cristina LINCARU

National Scientific Research Institute for Labor and Social Protection
6-8 Povernei St., Sector 1, 010643 Bucharest, RO
cristina.lincaru@yahoo.de

Vasilica CIUCĂ

National Scientific Research Institute for Labor and Social Protection
6-8 Povernei St., Sector 1, 010643 Bucharest, RO
vasilica.ciuca@incsmpls.ro

Speranța PÎRCIOG

National Scientific Research Institute for Labor and Social Protection
6-8 Povernei St., Sector 1, 010643 Bucharest, RO
speranta.pirciog@incsmpls.ro

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Abstract

The digital transformation of businesses is a prerequisite and an active factor in building a digital future for Romania. This new era offers an excellent opportunity for a new start for SMEs, especially small ones. The goal of the EU's Digital Compass from its Digital Decade is to reach a significant degree of digital engagement, ensuring inclusion for all. This fresh initiative places SMEs at the heart of digital change, recognizing them as key innovators. The adoption level of digital transformative technologies with radical innovation impact still needs to be higher at the European level and far behind Romania compared to the US and China. We apply a simplified multivariate analysis to visualize the normative distance to European Commission Digital Compass targets for 2030 of the Romanian SMS and generate possible trajectories toward achieving these (targets). The most significant findings indicate that for Romanian SMS, Artificial intelligence is a top priority in terms of normative distance toward the EU 27's 2030 targets of digital transformation of businesses. A national program should fill the funding gap and support enterprises in adopting and using at least one of the AI technologies with radical, disruptive innovation quality. Romania has the best relative perspective for performance, given double the number of startups unicorns. Our addition to existing literature outlines potential paths for Romanian companies to expedite and align with the digital transformation process. We focus on categorizing transformative technologies like Cloud computing, AI, and Big Data in terms of their progression rate and speed.

Keywords

AI; big data; cloud computing; digital compass; digital transformation; SMS; unicorns.

Introduction

Relentless and ongoing technological advancements propel the dawn of a sustainable age. This evolution, described as a persistent and influential force with global repercussions (JRC-Megatrends, 2022), is both unstoppable and impartial. JRC terms such globally impactful transformations as Megatrends. Peering toward the long-term 2050 horizon, the European Commission identifies "Accelerating technological change and hyperconnectivity" as the foremost megatrend (JRC-Megatrends, 2022). Hyperconnectivity describes the intricate network of interactions in the digital realm, linking devices, computers, and data via the internet. As technology leaps forward, we are bridging the gap between the tangible and digital spheres, even forging entirely new online realities. This burgeoning virtual environment, where individuals can have experiences beyond the confines of the physical world, is often referred to as 'the metaverse' (JRC-Megatrends, 2022).

We stand at the brink of the Industry 4.0 era, where the digital integration of production, data, objects, and processes deepens, expands, and is interconnected (Kaymakci et al., 2022).

The digital future of Europe is a certainty, already sketched by a complex strategical framework that generates a normative network of assumed targets:

- EU's Cybersecurity Strategy for the Digital Decade;
- Digital Services Act and Digital Markets Act;
- the European Digital Identity;
- the Media and Audiovisual Action Plan;
- the European Democracy Action Plan;
- the Digital Finance Strategy;
- the Data and AI strategies;
- Platform for Business Regulation;
- Geo-blocking Regulation.

Central to these strategic actions is the data related to Information and Communication Technologies (ICT) usage and e-commerce in businesses. This data, providing harmonized and comparable insights at the European scale (Eurostat, 2023), is gathered through the "European Survey on ICT Usage and e-Commerce in Enterprises." In Romania, the National Institute of Statistics uses a standardized questionnaire in the "ICT survey in enterprises" (CIRCABC, 2022). In 2021 and 2022, on a sample of more than 10,000 enterprises to evaluate the digital transformation.

The data related to Information and Communication Technologies is central to these strategic initiatives. The importance of SMEs is underscored by their designation as innovation sources, as outlined in "An SME Strategy for a Sustainable and Digital Europe" (European Commission, 2020). Business digital transformation stands as a pivotal focus for the Digital Decade. According to 2030 Digital Compass: The European Way for the Digital Decade (European Commission, 2023), the assumed targets are:

- Three-quarters of European businesses have adopted cloud computing, big data, and Artificial Intelligence services;
- Over 90% of European SMEs reach at least a basic level of digital intensity;
- Europe aims to expand its roster of innovative scale-ups and enhance its financing opportunities to double the count of unicorns in the region.

Considering the European Union 2023 Digital Compass, the questions for the Romanian authorities are: What is the level of digital transformation of the Romanian business environment? And What should be the effort for Romanian businesses to reach the Digital Compass targets?

The authors' unique contribution provides a perspective on the efforts related to transformation, such as refining processes, operations, or business models concerning the Digital Compass's goals for transformative technologies in Romania after 2027 (Kraus et al., 2022).

Literature review

Digital transformation of businesses

During the COVID-19 crisis, adopting digital technologies became a lifeline for many enterprises. By the dawn of 2030, digital innovations like 5G, IoT, edge computing, AI, robotics, and augmented reality will be auxiliary tools central to fresh products, revolutionary manufacturing methods, and novel business blueprints founded on equitable data sharing. In this digital horizon, the timely endorsement and realization of the Commission's Digital Single Market and Europe's digital future initiatives will expedite the digital metamorphosis of enterprises, fostering a balanced and competitive digital sphere (European Commission, 2021).

This must be complemented by creating a level playing field globally. The transformation of businesses is closely tied to their ability to swiftly adopt new digital technologies across the board, including in lagging sectors. Support from the EU, mainly through the Single Market, Digital Europe, and Cohesion programs, will drive the adoption and application of digital resources, such as industrial data spaces, computing power, open standards, and testing facilities European Union (2023).

Companies should be incentivized to embrace eco-friendly digital solutions and products that enhance energy and resource efficiency. Rapid digital integration should catalyze more innovative resource management, augmenting Europe's material productivity, cutting manufacturing expenses, and mitigating susceptibility to supply disruptions. Pioneering and game-changing innovations should be spotlighted. Even though Europe spawns startups at a pace parallel to the US, it must cultivate a more nurturing environment and a truly integrated Single Market to foster rapid expansion. Despite various mechanisms, the investment disparity for nurturing startups between Europe, the US, and China is significant. While Europe has birthed several unicorns, there is room for enhancement. The inception of a Startup Nations Excellence Standard can streamline cross-border growth, including better financing avenues.

SMEs are the linchpins of this shift, not just due to their dominance in the EU's corporate landscape but also as innovation hotbeds. Backed by over 200 Digital

Innovation Hubs and industrial networks, SMEs should, by 2030, seamlessly access digital tech and data on equitable terms, bolstered by apt regulations, and avail sufficient digitization support. In this vein, the 200+ European Digital Innovation Hubs and industrial consortiums should assist tech-savvy and traditional SMEs, linking digital providers with regional networks. The ambition is to cultivate profound digital immersion, ensuring inclusivity for all. The Commission is set to revamp its Industrial Strategy to expedite the digital metamorphosis of industrial sectors, aligning with the 2030 objectives.

Digital transformation of businesses is already present in the economy by adopting radical new technologies. It is broadly recognized as a critical technological approach and is anticipated to significantly reshape industries, primarily through enhancing the entire value chain (Kilimis et al., 2019). China is a nation that has successfully implemented digital transformation, achieving reduced costs, enhanced operational efficiency, and more significant innovation outcomes (Zhai et al., 2022).

Troise et al. (2022) discovered that agility characterizes successful SMEs. The authors emphasize that digital technology proficiency, relational skills, and innovation capacity are the three precursors to organizational agility.

Simultaneously, Kraus et al. (2022) suggest a cohesive framework connecting present-day digital transformation research to business and management. The authors underscore the profound significance of digital transformation as an emerging paradigm. This transformation extends beyond the advantages for a single company, enhancing the performance of whole sectors and industries, irrespective of a country's developmental stage, provided there is collaboration between them.

Drawing from the instance of Chat GPT as a representation of transformative AI tools, Dwivedi et al. (2023) contend that there is a vital need to pinpoint and establish safeguards against the misapplication and exploitation of generative AI. These new tool types can potentially cut production costs, particularly for SMEs in the banking, hospitality, tourism, and IT sectors, and can amplify business operations such as management and marketing (Dwivedi et al., 2023). However, these authors also note downsides, including disruptions in established practices, risks to privacy and security, and the repercussions of inherent biases, misuse, and the spread of false information. Another group of groundbreaking digital technologies includes the metaverse and augmented and virtual reality tools. Dwivedi et al. (2022) enumerate marketing, education, tourism, and healthcare among the sectors that the metaverse could influence.

Cloud Computing Services

Kaymakci et al. (2022) show that manufacturing-focused small and medium-sized enterprises (SMEs) are increasingly confronted with the hurdles of digital transition, gravitating towards cloud solutions to harness the power of artificial intelligence (AI), particularly machine learning (ML) services.

Among management-focused digital tools, ERPs are prominent, and their effectiveness in business management is gaining more power (Grigorescu & Ion, 2022). A company's ERP system is software that seamlessly integrates essential business services,

consistently refreshes business methodologies and departmental activities in real-time, and thus facilitates efficient management of enterprise assets (Chu & Nguyen, 2022). The digital evolution of business grants SMEs access to Cloud ERP (CERP) solutions, once the domain of more prominent corporations. Chu and Nguyen (2022) observed that effectively rolling out CERP directly influences the restructuring of business processes and the business's overall performance, particularly in the case of SMEs.

The significance of CERP began gaining traction in 2019. In Brandenburg, Germany, most businesses viewed ERP deployment as a top investment priority when seeking the most economically efficient technology (Kilimis et al., 2019). According to Hustad et al. (2019), SMEs witnessed both advantages and obstacles in adopting cloud ERP systems. The digital value was derived from automated work processes, rapid system updates, bolstered data storage security, and enhanced access to crucial business information across various digital platforms. However, difficulties in reaping these benefits were tied to the organization's alignment with standardized solutions and the organizational adjustments required to maximize system utility. While SMEs leaned towards a more casual approach to deriving benefits and extracting digital value from the system, service providers were keen on integrating benefit realization into their structured implementation approach.

Artificial Intelligence

Forradellas and Gallastegui (2021) highlight that AI and digital transformation will become integral to numerous applications and, as a result, will become universally deployed. The authors emphasize the urgent need for establishing unified regulations in line with this emerging reality and new business models. Also, Kitsios and Kamariotou (2021) crafted a theoretical framework and emphasized four key areas for value creation derived from an analysis of eighty-one scholarly articles. These four pillars, crucial from both academic and management perspectives, offer vast potential to spawn innovative management approaches and methods: (1) Integration of AI and Machine Learning within organizations; (2) Synchronization of AI tools and Information Technology (IT) with organizational objectives; (3) The interplay between AI, knowledge management, and decision-making processes; and (4) The relationship between AI, service innovation, and value creation.

Hansen and Bogh (2021) deduced that implementing AI on a machine-specific basis for SMEs is more cost-effective than a comprehensive production-scale rollout. The authors advise that SMEs should first consider machine-specific deployment under the umbrella of the Innovation Factory North, the Danish National Strategy to Industry 4.0 tailored for SMEs. Moreover (Binsaeed et al., 2023a) demonstrated the importance of knowledge sharing for digital transformation and AI adoption for companies. These reflect the need for a new business model for the digital economy and a reshaped organizational culture.

Big Data

The research indicates that European SMEs actively incorporated big data, alongside social media and other technologies, as part of their practices to innovate and reconfigure their business models (Bouwman et al., 2019). The authors deduced that

by dedicating more time and effort to innovation, SMEs can effectively implement the challenges of digitalization and create new business models (Matarazzo et al., 2021; Moeuf et al., 2018).

The outcomes of Binsaeed et al. (2023b) showed that entrepreneurial readiness mediated between big data analytic capabilities and innovation performance. Since the research of Binsaeed et al. (2023c) aimed to explore the connections between big data analytical capabilities, organizational readiness, digital orientation, and innovation performance, the authors hypothesized that big data analytic capabilities foster organizational readiness, which subsequently boosts innovation performance, validated by the study results. Notably, the results also showed that digital orientation significantly moderates the connection between organizational readiness and IP (Binsaeed et al., 2023c).

Besides capabilities and strategies, the shift to digital also hinges on the accessibility and application of digital technologies (Kraus et al., 2022). Against this backdrop, Unicorns serve as exemplary models for digitally transformed businesses, clearly illustrating that agile companies are among the SMEs that have achieved at least a foundational level of digital engagement.

Digital Intensity Index

Derived from the ICT usage and e-commerce enterprise survey, the Digital Intensity Index (DII) is computed from 12 variables, each scoring a point (Eurostat, 2015). The DII defines four digital intensity tiers for enterprises:

- Enterprises with very low DII: those scoring between 0 and 3 points.
- Enterprises with low DII: those tallying between 4 and 6 points.
- Enterprises with high DII: those accumulating between 7 and 9 points.
- Enterprises with very high DII: those amassing between 10 and 12 points.

Furthermore, the DII's four levels help determine a "basic level" of digital intensity to track the Digital Decade's progress. An enterprise attains this basic level by utilizing at least four of the twelve identified variables. This encompasses enterprises classified under low, high, and very high DII tiers, excluding those with a very low intensity.

The key performance indicators (KPIs) for the Digital Decade Policy Programme 2030 (European Commission, 2023a) are based on the Digital Economy and Society Index that uses the DII.

Kraus et al. (2022) highlight that, notwithstanding recent advancements, studies on digital transformation are still nascent. There is a pressing need to cultivate a universal understanding of digital transformation from a business and management viewpoint. Furthermore, there is a call for in-depth research examining the implications of digital transformation across various organizations and industries. At the same time, the EU has unanimously embraced digitalization as its cornerstone strategy for its actual deployment, especially among SMEs (Kilimis et al., 2019). In the meantime, Hansen and Bogh (2021) identify a literature void concerning IoT and AI, pivotal facets of Industry 4.0, particularly in the context of SMEs. Most existing studies on these subjects predominantly target larger corporations and fewer SMEs. Suggests that while AI offers vast opportunities to tackle challenges, there are still obstacles in its practical

application and a noticeable need for more expertise in using AI strategically for business benefits (Kitsios & Kamariotou, 2021).

As previously noted, the Digital Compass's 2030 objective aims for over 90% of EU SMEs to reach at least a foundational degree of digital involvement, as outlined by the European Commission (2021). The alignment with this goal will be assessed using a composite indicator, which presents a roadmap for digital transformation with specific benchmarks set for 2030 across four key areas: skills, infrastructures, business digitization, and public services.

The present study aimed to address the identified gap in the digital transformation of Romanian businesses (mainly represented by SMEs) in light of the Digital Compass 2030. The research aims to identify trajectories toward Digital Compass targets for Romania as part of the EU.

The hypothesis of the study: *The goals set by the Digital Compass for the business's digital transformation are achievable by Romania.*

Research methodology and data

The methodology for computing the indices of objectives related to long-term trends and megatrends aims to pinpoint priorities for guiding Romania's Cohesion Policy post-2027. This approach uses a Multicriteria Decision based on how Romania's performance deviates from a nationally assumed Normative Value, usually the average level across the EU27.

Decision-making is supported by several standardized tools (European Commission, 2023b; European Commission et al., 2022). Multi-Criterial Decision Analysis is used in priority setting, especially at the beginning of a strategic cycle (Keshavarz Ghorabae et al., 2015; Mathew, 2018; Roman, 2012). Multicriterial decision analysis methods (MCDA) serve to support complex decisions determined by multidimensional problems.

The main steps of the methodological framework are:

- ✓ Selection of the best criteria to be considered in the analysis.
SMEs aim to meet a minimum of four out of the twelve DII criteria and to incorporate at least three additional digital tools. Given prior research emphasizing the significance of cloud computing, big data, and AI in enhancing innovation performance and redefining business models, these are the most suitable criteria. The criteria are evaluated on a qualitative scale of value.
- ✓ Building the Decision Matrix
 X_{ij} is the performance value for alternative i against criterion j . Criteria are categorized as either beneficial or non-beneficial. Higher values are desired for beneficial criteria, while lower values are preferred for non-beneficial criteria.
- ✓ Criteria standardization
The criteria are standardized using the formula (1) and (2).
Beneficial criterion =
$$\frac{X_{ij}}{\text{Max}(X_{ij})} \quad (1)$$

$$\text{Non-beneficial criterion} = \frac{\text{Min}(X_{ij})}{X_{ij}} \quad (2)$$

- ✓ Construction of the Normalized Performance Decision Matrix $[C_{ij}]$ (3)

- ✓ Assignment of weights. In this case, the Equal weights were considered. All criteria are equally important among the n criteria considered:

$$w_j = 1/n * 100 \quad (4)$$

$$\sum_{j=1}^n w_j = 100\% \quad (5)$$

- ✓ Construction of the Weighted Normalized Performance Decision Matrix

$$P_{ij} = w_j * C_{ij} \quad (6)$$

- ✓ Performance score calculation

$$P_i = \sum_{j=1}^n P_{ij} \quad (7)$$

- ✓ Allocation of ranks according to performance scores - $P_i * 100$ – using a standard scale 0 minimum (non-beneficial), 100 maximum (beneficial)

Data used in the study were gathered from Eurostat and presented in Table 1.

Table 1. Criteria considered and the indicators' values (Source: Eurostat, 2022)

Indicator	UM	cod indicator	UE 2022	UE 2030	Ro 2022	Ro 2030	Ro 2035
Cloud computing services by size class of enterprise - Buy cloud computing services used over the internet	Percentage of enterprises	ISOC_CICC E_USE	41%	75%	14.1%	75%	100%
Big data analysis by size class of enterprise		ISOC_EB_B D	14%	75%	5.1%	75%	100%
Artificial intelligence by size class of enterprise - Enterprises use at least one of the AI technologies		isoc_eb_ai	8%	75%	1%	75%	100%

Indicator	UM	cod indicator	UE 2022	UE 2030	Ro 2022	Ro 2030	Ro 2035
SMEs with at least a basic level of digital intensity		isoc_e_dii	55%	>90%	28%	90%	100%
startups unicorns	Number of Firms		222	444	3	6	8

Results and discussion

Implementing the Digital Compass across all business organizations, especially SMEs and micro-enterprises, requires viewing targets from a managerial perspective. The management journey is multifaceted. It encompasses evaluating the present metrics (as seen in Table 2), setting tangible performance goals along with their timelines, assessing current performance against these goals, gauging the gap from the set benchmark, and strategizing how to bridge this gap in terms of time, resources, and more. At the same time, performance approaches:

- Striving for vertical excellence is crucial, especially among top-performing businesses. This suggests "unicorns" – entities that set global standards for organizational success.
- As for horizontal excellence, it ensures consistent performance across all businesses in every sector, irrespective of their prior affiliations with the IT domain. This includes both related and unrelated technologies.

We have covered the Digital Compass targets into two main facets for all organizations:

- a) The first facet outlines the various categories of technologies that can be adopted. Each technology, whether Cloud computing, Big Data, or AI, is individually presented. They all share a common metric - representing 75% of businesses adopting these technologies, as illustrated in Figure 1.
- b) The second facet delves into the combined impact of the three aforementioned technology categories. This component highlights companies classified as "Unicorns" and "Future Unicorns". We consider them outliers and exemplary cases, symbolizing pinnacle achievements, as depicted in Figure 2.

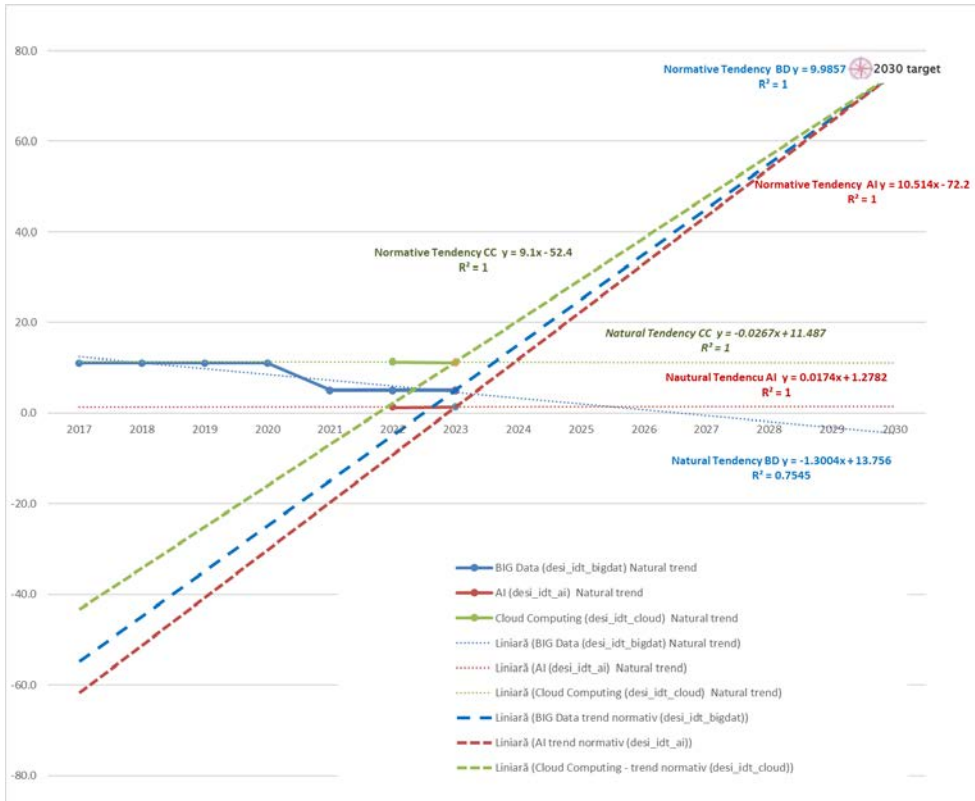


Figure 1. Romania - Natural and Normative Tendencies toward Business Digital Compass 2030 targets: Cloud, AI, and Big Data 75% (Source: Authors' own research results)

Figure 1 indicates a refutation of the Hypothesis for component 1. There's a discrepancy concerning comparing the ideal or expected trajectory to the current, ongoing trend. This comparison is somewhat constrained due to the limited data series available. Cloud Computing (CC), Big Data (BD), and Artificial Intelligence (AI) are technology sectors that have recently surged in prominence in the business realm. This is further underscored by the introduction of EUROSTAT metrics specifically for Digital Compass targets, particularly for 2022 and 2023 (preliminary data).



Figure 2. Romania - Natural and Normative Tendencies toward Business Digital Compass 2030 targets: SME taking up Tech 90% (Source: Authors' own research results)

Figure 2 indicates a confirmation of the Hypothesis for component 2. The natural trend is compared with the normative one for the indicator of at least a basic level of digital intensity- SME taking up Tech 90%.

According to Table 2, the largest gap in terms of distance to the target, compared on a normalized adimensional scale, is for AI-type technology of 98.7. For BD, this distance is a little lower, namely 93.2, and for the third type of technology, this distance is 81.2. From a managerial perspective, a measurement of the effort in comparable terms, the disruptive digital technology of the CC type is the easiest to implement, followed by the BD, which is only in last place for the AI technology type. Under the hypothesis that we have equal annual increases, AI technology presents both the need to achieve the highest speed, an increase of 10% of companies/year, followed by BD with a normative speed of 9.98%/year and CC with a speed of 9.1% year. We compare the normative trend with the natural trend and notice that the most feasible seems to be the target for AI technologies. It is the only type of technology that presents a natural positive trend, with a speed of 0.017% of companies/year that use AI technologies. For BD, the natural trend is -1.3% per year; for CC, the natural trend is -0.0267.

Table 2. Gap to the targets of Digital Compass 2030

Business digital transformation direction	Normative distance 2022-2030
Artificial intelligence by size class of enterprise - Enterprises use at least one of the AI technologies	98.7
Big data	93.2
Cloud computing services by size class of enterprise - Buy cloud computing services used over the internet	81.2
SMEs with at least a basic level of digital intensity	68.9
Number of startup unicorns	50

Source. Calculated by authors.

An optimistic perspective of achieving the targets is illustrated by comparing the desired, normative trend with the natural trend. The lack of data series limits these comparisons. We identify the smallest gap (except for the target for unicorns) in terms of distance to the target, with 68.9%. In terms of the effort, if the natural trend is maintained, the target will be fulfilled earlier, on the horizon of 2024-2025. This bulk achievement refers to at least four of the twelve DII criteria. The unicorns target must be considered individually, being a special component of Digital Compass 2030, where Romania already has two companies, and there are plenty of opportunities to double the number soon. We have identified the highest normative speed of 30.27% per year if we consider equal annual increases in the synergistic effect of using CC, BD, and AI technologies together. It was noticed that it is the most feasible target compared to the analysis of the adoption of individual CC, BD, and AI technologies; for this component, we have a natural positive trend, with a speed of 5.35% yearly, that a basic level of digital intensity.

Conclusions

The assumed hypothesis of the study was that achieving the targets for the digital transformation of business set by the Digital Compass was feasible. The findings show at least two scenarios:

Scenario 1 – The hypothesis is refuted, given the mass capacity of companies and especially SMEs to adopt and use, including to create added value; if we consider individual adoption of the CC, BD, and AI disruptive technologies as an example, BD is not handy for SMEs (Grigorescu et al., 2022).

Scenario 2 – The hypothesis is confirmed for SMEs with at least a basic level of digital intensity for the 2024-2025 horizon, even earlier. This could be explained by the powerful synergistic effect of using CC, BD, and AI, or by the less minimal four disruptive technologies adopted. For the unicorn target, the relative distance from the norm is 50% - respectively, the target proposes to double the performance.

The Digital Compass concepts and goals need to be conveyed in a manner that's accessible to a broader audience. These objectives are universally far-reaching, entail significant costs, and have a rapid timeline. Central to the Digital Compass is the digital

transformation of SMEs, particularly in Romania, where over 99.7% of companies are active. It's crucial to recognize that the Digital Compass Targets serve as a multifaceted management tool for sustainability, addressing the economy, skills, society, and institutions simultaneously. Digital transformation implies that every SME will employ at least 4 out of 12 key disruptive digital technologies, focusing on Cloud Computing, Big Data, and AI.

The gap Romanian SMEs need to bridge to meet the Digital Compass 2030 target varies based on the type of disruptive technology in question: Cloud Computing, Big Data, or AI. Adopting these groundbreaking disruptive technologies signifies automating the informational process encompassing data.

The business digital transformation goals should be perceived as a managerial aim to foster a comprehensive understanding of multilevel strategies. This perspective aligns with Kitsios and Kamariotou (2021), suggesting that digital disruptive technologies can yield value when seamlessly integrated into theoretical and managerial frameworks, offering vast opportunities to birth new management methods and practices. Digital business transformation is a strategic undertaking that warrants further exploration, especially concerning the conditional likelihood of selecting specific technologies.

Notable constraints of our current study are the use of Digital Compass data for 2022 and interim predicted for 2023, the bulk approach of the business environment (no discrimination of size or economic sector). Moreover, the associated costs of the implementation and their correlation with the transformation speed still need to be explored. Our research doesn't address microenterprises (SMEs with less than ten workers and a turnover of less than 2 million euros).

One direction of further development is the analysis of the trajectory of digital transformation and the development of Roadmaps at the local, regional, and national levels for SMEs and especially Micro-enterprises as a whole and by sector. The sectoral analysis can be detailed from the perspective of substitution effects, mainly generated by the creation and destruction of economic sectors, especially because of the increase in the absorption capacity of technological progress. Development and consolidation of Digital Transformation Management the "hive" paradigm of thinking. Consolidation of sectoral management.

Another direction to be explored in future studies is the financing capacity for companies to adopt and use disruptive digital technologies in various combinations and the expected transformation speed. The new competencies needed for the effective implementation of the digital transformation of business organizations, quickly and on a large scale, are also topics to be considered, as is the readiness of human resources.

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