



BOOK REVIEW:

**SMES IN THE DIGITAL ERA:
OPPORTUNITIES AND CHALLENGES OF
THE DIGITAL SINGLE MARKET, BY EMANUELA CARBONARA,
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Abstract

The book 'SMEs in the Digital Era: Opportunities and Challenges of the Digital Single Market', edited by Emanuela Carbonara and Maria Rita Tagliaventi, offers a thorough exploration of the current digital transition affecting small and medium-sized enterprises (SMEs) in Europe. Drawing from organizational, economic, and legal perspectives, the volume brings together a range of contributions that examine how SMEs are adapting to digital technologies and what structural barriers still hinder this transformation. The topics covered include the benefits and impacts of artificial intelligence (AI) and digital platforms, alternative financing mechanisms such as crowdfunding, the role of digital technologies in supporting the growth of female entrepreneurship, and the evolving influence of European regulations on business practices and logistics systems. Particular attention is given to issues such as limited access to resources, gaps in digital skills, and the challenges of scaling innovation across borders. The combination of theoretical perspectives and empirical evidence results in a set of concrete suggestions that can help guide both policy development and business decision-making. This makes the book a valuable resource for researchers, policymakers, and practitioners working on the digital transformation of SMEs.

Review

The book '*SMEs in the Digital Era: Opportunities and Challenges of the Digital Single Market*' offers an in-depth exploration of how Small and Medium-sized Enterprises (SMEs) can thrive in an increasingly digitized environment. It examines how they can engage with the Digital Single Market, seizing its opportunities while confronting the substantial challenges that digital transformation entails.

The Digital Single Market, as defined by the European Commission, is an area where the free movement of goods, people, services, and capital is guaranteed. It allows individuals and businesses to access and participate in online activities seamlessly, with fair competition and a high level of consumer and personal data protection, regardless of their nationality or place of residence. SMEs are a vital component of this market, constituting 99% of European Union companies and employing between 50% and 70% of the workforce. Despite their significant presence, many SMEs still struggle to fully participate in the data-driven economy and demonstrate less awareness regarding data protection issues, making them more susceptible to vulnerabilities.

Understanding the reasons behind this gap requires a closer look at how SMEs approach digital transformation and the challenges they encounter along the way.

The process of digitalization for SMEs can be understood as a *multi-stage journey*, where not all phases are necessarily completed, and each implies an increasing organizational impact. This journey begins with *digitization*, which involves converting analog signals to digital ones to enhance overall efficiency, with a limited effect on organizational processes. Following this, *digitalization* signifies a greater integration among information collected and processed in different organizational areas, such as procurement, production, and sales, thereby demanding a more significant organizational impact. Finally, *digital transformation* leverages new technologies to drastically revise the products, services offered, and markets served, consequently modifying business models and organizational structures. Yet only a minority of SMEs reach this more transformative stage, with most remaining in the earlier, less disruptive phases.

The book aims to provide a comprehensive analysis of the opportunities and challenges that this journey presents for managers, entrepreneurs, and academics.

Engaging with the Digital Single Market gives SMEs a valuable chance to strengthen their market appeal, international presence, and capacity for innovation. It helps them overcome common barriers, such as the '*outsider-ship*', which refers to the difficulties SMEs often face when operating abroad due to limited resources. These include intangible assets, like managerial

skills and the ability to build networks, as well as tangible assets, such as financial capital.

In this context, digital platforms play a pivotal role by primarily acting as intermediaries between SMEs and clients, enabling extensive data storage, retrieval, and analysis, which provides insights into company performance and offers both flexibility and scalability due to their combination of fixed and variable components. This function allows for a decoupling between production and consumption, making internationalization strategies more viable and counterbalancing the traditional local focus of SMEs.

Furthermore, digital technologies empower small enterprises to innovate more readily by exploiting the convergence of information and generativity, lessening their dependence on larger corporations and market intermediaries. The adoption of *servitization*, or product-service integration, also becomes more achievable for SMEs through digital means.

These promising advantages are accompanied by a range of substantial challenges that SMEs must confront in the digital transition.

Digitalization introduces considerable disadvantages and challenges for SMEs. Among these, the reliance on targeted public funding represents a critical constraint, particularly for women-led companies, which often face greater obstacles in securing external financial resources compared to their male-led counterparts.

A significant issue is also the lack of adequate competencies, affecting both management and workers, which can lead to a pronounced '*competence gap*' compared to larger firms. Closely related to this is the challenge of managing customer relationships effectively within the Digital Single Market, which requires not only a shift in mindset but also the strategic use of digital tools, such as social media for e-commerce and marketing. This challenge goes beyond the issue of access to digital infrastructure (the so-called '*digital divide*') and includes the ability to use these tools proficiently.

Resistance to change and difficulties in cultivating an organizational culture that embraces digitalization also represent significant hurdles. Lastly, concerns regarding data security and privacy, coupled with the risks of cybercrime, pose substantial drawbacks. Although leveraging digital platforms and integrating into value chains may offer enhanced security, this often comes at the cost of reduced independence for SMEs.

To explore these multifaceted dynamics in depth, the book is thoughtfully structured into three main thematic parts: *organizational*, *economic*, and *legal*, comprising a total of 12 chapters.

The first part of the volume, '*The Evolution of Organizations in the Digital Era*', includes four chapters that examine how SMEs are adapting their

organizational structures, strategic orientations, and operational models in response to the challenges and opportunities posed by digitalization.

The opening chapter, authored by Giacomo Carli, Jeanette Hartley, and Maria Rita Tagliaventi, offers a detailed analysis of the different stages in the digital development of SMEs: digitization, digitalization, and digital transformation.

Each stage implies a progressively deeper organizational impact, and the authors emphasize that not all firms succeed in reaching the more advanced phases. The benefits of digital engagement are clear, including greater innovation capacity, reduced dependency on larger firms, and enhanced potential for international expansion. However, the chapter also highlights significant barriers that SMEs face. These include difficulties in securing financial resources, the presence of skill gaps, and a lack of cultural readiness for change. Particular attention is given to the role of *digital platforms*, which are presented as both strategic enablers and potential sources of dependence. The authors employ Porter's value chain framework to examine the implications of digitalization across various business functions such as operations, marketing, sales, and human resources. The chapter concludes by noting that many SMEs remain hesitant or unprepared to fully embrace digital transformation, often due to limited knowledge, inadequate resources, or concerns related to data security and privacy.

The second chapter, written by Luisa De Vita, explores the potential of digital technologies to support the growth of female-led SMEs.

The chapter sets out a framework for understanding how digitalization may support *women's entrepreneurship* by facilitating access to new markets, enabling alternative financing methods such as crowdfunding, and opening entry into traditionally male-dominated sectors. At the same time, it critically reflects on how digital spaces can mirror and even reinforce existing gender and social inequalities. Based on a qualitative study of 19 Italian women entrepreneurs, the analysis offers insight into both the opportunities created and the structural challenges encountered. These include the difficulty of gaining visibility in male-dominated industries, the demand for advanced digital competencies, and the persistence of systemic biases. The chapter concludes with policy recommendations that call for targeted national and international funding programs and the creation of inclusive innovation ecosystems that specifically support women's entrepreneurship.

The third chapter, authored by Nicoleta Darra, Aikaterini Kasimati, Michael Koutsiaras, Vasilis Psiroukis, and Spyros Fountas, shifts the focus to the *agri-food sector*.

The chapter considers the broader social and environmental implications of digitalization in agriculture, including improved traceability, enhanced food safety, and increased attractiveness of the sector for younger generations. It explores how digital technologies are being used by SMEs

in agriculture to address the chronic lack of reliable data, which has long hampered strategic and operational decision-making in the field. The chapter presents an overview of the tools currently available to farmers, including drones, remote sensing platforms, and agricultural robots. These technologies offer the potential to improve productivity, profitability, and integration into value chains. However, their adoption is not without challenges. Farmers must contend with limited connectivity in rural areas, high investment costs, and a general shortage of digital skills.

The final chapter in this section, by Marco Marrone, Gianmarco Peterlongo, and Giorgio Pirina, adopts a more critical and reflective perspective on the mainstream narratives surrounding digitalization.

It challenges some of the dominant assumptions, particularly those that associate it with sustainability, flexibility, and economic dematerialization. Drawing on a socio-material approach, the authors argue that the digital economy remains fundamentally reliant on material resources and global labour. Technologies such as smartphones and data centres depend on extractive processes involving minerals like lithium and coltan, as well as on the often-invisible work of miners, factory workers, and delivery drivers. The chapter also questions the widespread narrative of automation, observing that digital technologies frequently lead to the intensification rather than the elimination of labour. However, rather than reducing inequality, digitalization may exacerbate existing disparities along lines of class, gender, and geography. The authors suggest that the myths surrounding machines and digital technologies can legitimise digital transformation by masking its more problematic aspects, and they call for a more grounded and critical understanding of the social and environmental costs associated with the digital transition.

The second part of the volume, *'An Economic Viewpoint: Artificial Intelligence, Platforms, and Economic Policies'*, includes four chapters that shift the focus to the economic dimensions of digitalization. It examines the impact of emerging technologies, market dynamics, and regulatory frameworks on small and medium-sized enterprises.

The first chapter in this section – chapter five – is authored by Emanuela Carbonara and Enrico Santarelli. It examines the implications of artificial intelligence and robotics for SMEs and entrepreneurship.

The analysis positions these technologies as a *'double-edged sword'* capable of generating both risks and benefits. Empirical studies are cited to support the claim that initial adoption often leads to reduced employment and lower wages, particularly in manufacturing sectors. However, the authors challenge this reductionist view, arguing that it fails to account for the broader systemic dynamics of technological change. Rather than viewing AI purely as a driver of labor displacement, the chapter proposes a more comprehensive approach that considers AI as both a process innovation

adopted by firms and a product innovation developed by specialized companies. While AI may not yet represent a radical technological revolution, it has the potential to reduce production costs, improve decision-making, and increase demand for experienced entrepreneurs. The authors suggest that dynamic capabilities, defined as the ability to integrate, build, and reconfigure internal and external competencies, are essential for SMEs to successfully adopt AI. Entrepreneurial ecosystems also play a critical role by providing access to human capital, institutional support, and technological resources. The chapter concludes with a set of policy recommendations, including targeted subsidies, tax incentives for high-skill employment, and investment in STEM and entrepreneurial education.

Chapter six, by Giuseppina Gianfreda and Luisa Scorciarini Coppola, examines mergers and acquisitions in the digital economy, focusing on the *Meta/Kustomer case*.

The case is presented as a paradigmatic example of how digital markets are reshaping competition policy. The chapter highlights how acquisitions of small, innovative firms have come under increasing scrutiny due to their potential impact on competition. The authors compare the divergent approaches taken by the European Commission and the UK Competition and Markets Authority. While the Commission conducted an in-depth investigation and imposed conditions based on concerns about market foreclosure and data accumulation, the UK authority cleared the transaction without restrictions. This comparative analysis reveals the complexities of regulating digital mergers and underscores the need for greater alignment in the assessment of competitive effects within digital markets.

The seventh chapter, written by Matteo Alvisi, provides an in-depth exploration of multi-sided digital platforms and the competitive challenges they pose.

The chapter introduces the concept of *network effects*, whereby the value of a platform increases with the participation of multiple user groups. It also discusses the '*tragedy of the anticommons*', a situation in which excessive fragmentation of complementary goods or services leads to reduced overall efficiency and consumer welfare. This concept is applied to digital markets, where independent platform owners may collectively set higher prices, limiting access and innovation. In some cases, greater market concentration through mergers could paradoxically enhance welfare outcomes. The analysis further distinguishes between substitute platforms and complementary platforms, illustrating how pricing and innovation strategies differ across these models. The discussion also addresses patent complementarity and the role of patent pools, particularly in emerging ecosystems such as the Internet of Things. The chapter concludes by emphasizing the need to reassess competition policies in light of the complex interdependencies that characterize contemporary digital markets.

Chapter eight, which concludes the second part of the volume, is authored by Alice Guerra and examines the issue of *taxation* in the digital economy.

The chapter outlines the difficulties that governments face in ensuring fair and effective wealth redistribution in an era of capital mobility and transnational transactions. It examines how large multinational corporations often engage in aggressive tax planning practices, exploiting gaps and inconsistencies in national tax regimes to minimize their obligations. These strategies are typically beyond the reach of SMEs, placing them at a relative disadvantage. Particular attention is devoted to the challenges faced by gig economy workers, who often struggle with ambiguous tax regulations and reporting requirements. The chapter calls for stronger international coordination and improved information exchange between tax authorities, as well as measures such as a global corporate income tax. A multi-level approach is proposed, addressing the problem at individual, corporate, and institutional levels. The chapter closes with an appeal for further research into the causal mechanisms linking digitalization to tax avoidance and for regulatory solutions that can restore fairness and transparency to the fiscal system.

The third part of the volume, *'Regulating Digitalization: The EU Approach'*, includes four chapters that focus on the role of regulation in guiding the digital transition of SMEs within the European Union framework. It examines the evolving legal, financial, and infrastructural conditions required to support innovation while safeguarding competition, transparency, and inclusivity.

Chapter nine, which opens the third part of the volume and is authored by Maria Alessandra Stefanelli, outlines the European Commission's efforts to create a legal environment that keeps pace with technological innovation.

The chapter emphasizes the importance of a unified and proactive regulatory framework capable of supporting SMEs while maintaining legal certainty and common standards. Two key instruments are discussed in detail. The first is the *'European Digital Innovation Hubs'*, presented as centralized support structures that offer SMEs access to technical expertise, experimentation opportunities, financing guidance, and training. The second is *'regulatory sandboxes'*, defined as supervised environments where companies can safely test innovative solutions, particularly in the financial technology sector. The chapter highlights the strategic importance of standardization and emphasizes the need to strengthen SME involvement in the development of standards and open-source solutions. It concludes by advocating for anticipatory regulation, conceived as a collaborative and future-oriented approach that aligns legal adaptation with the fast pace of digital technological change.

The tenth chapter, written by Beatrice Bertarini, explores the *disintermediation of SME* financing in the digital era.

The analysis begins with a definition of disintermediation as the removal of traditional financial intermediaries, enabling direct interactions between investors and entrepreneurs. This process is largely facilitated by technologies such as blockchain and by the growth of financial technology solutions. The chapter discusses how these developments have given rise to new forms of financing, including crowdfunding and crypto-assets, which offer faster, more flexible, and potentially more inclusive alternatives to traditional bank lending. Particular attention is devoted to the European Union's regulatory framework for *crowdfunding*, which includes investor protection measures such as transparency requirements, risk assessments, and cooling-off periods. The *Markets in Crypto-Assets Regulation* is presented as a significant step toward regulating digital assets, although the author notes that the associated administrative and compliance burdens may limit participation among smaller firms. The chapter concludes by recognizing that digital disintermediation is not eliminating intermediaries, but rather creating new forms of digital intermediation that continue to evolve within the financial ecosystem.

Chapter eleven, by Stefano Zunarelli, addresses the impact of digitalization on the logistics industry, with a particular focus on *transport SMEs*.

The chapter examines how technological innovations have improved terminal productivity, streamlined communication, and reduced cargo handling times. A central theme is the role of '*Port Community Systems*', defined as digital platforms that facilitate the exchange of documents and data among public authorities and private operators within port areas. These systems are shown to enhance coordination and accelerate administrative procedures. National initiatives are cited as examples of efforts to modernize logistics infrastructure. The chapter also introduces the concept of '*Controlled Customs Corridors*' and the adoption of electronic transport documentation, such as the e-CMR, which is intended to reduce costs and increase transparency. Despite these advances, the author highlights several challenges faced by SMEs, including the high costs of technological investment and the need for continuous training of personnel. The risk of market concentration is also noted, as smaller firms may struggle to keep pace with larger competitors that are better equipped to adopt and manage digital tools.

Chapter twelve, written by Umberto Michele Carbonara, concludes both the third part and the entire volume.

It analyzes the implications of *Directive 2019/1151* on the digital formation of companies. The directive aims to simplify the procedures for setting up limited liability companies and registering branches across EU member states, primarily by allowing online incorporation and eliminating the

need for physical presence. The chapter explains that the directive requires member states to provide standardized templates for incorporation and to ensure the interconnection of national business registers. These measures are intended to reduce administrative burdens, lower costs, and encourage cross-border entrepreneurship.

The analysis also points to several risks. Among these are the need for effective fraud prevention mechanisms, reliable identity verification, and safeguards against abuse. The flexibility granted to member states in implementing the directive may lead to disparities, potentially triggering regulatory arbitrage and cost polarization.

The Italian case is examined, highlighting how the continued reliance on notarial procedures may undermine the directive's goals of efficiency and competition. The chapter concludes with a call for a more harmonized and innovation-friendly approach to company law that balances legal certainty with accessibility.

Taken together, the contributions presented in the volume offer a multifaceted perspective on the benefits and tensions that define the digital transformation of SMEs. Building on the insights developed in each chapter, the following synthesis distills the main themes and critical reflections that emerge across the book, laying the groundwork for the concluding considerations.

On one hand, digital technologies undeniably offer significant potential for internationalization, innovation, and efficiency. For centuries, SMEs have struggled with limited access to both tangible resources, such as funding, and intangible ones, such as managerial expertise. The emergence of the Digital Single Market has substantially increased the feasibility of internationalization strategies for SMEs.

Digital platforms, acting as powerful intermediaries, help SME overcome geographical boundaries by providing them with unprecedented access to new markets and broader customer bases. Digitalization drives innovation by consolidating fragmented information and creating an environment conducive to experimenting with new features in products and services. In traditionally conservative sectors, digital technologies offer solutions to the long-standing challenge of reliable data collection, enabling more informed strategic decisions and potentially improving the social standing of farmers. Operational efficiencies are equally notable, ranging from the reduction of administrative costs through electronic documents to the optimization of logistics. While often perceived as a threat, AI also creates entirely new entrepreneurial opportunities and product innovations, enabling SMEs to reduce costs related to information and prediction.

The volume also highlights that this promising landscape is shadowed by considerable hurdles.

Embracing digital transformation demands significant investments, a common Achilles' heel for SMEs, which often find external funding harder to secure compared to larger firms. The high cost of advanced hardware and software can be a daunting barrier, particularly for sectors like agri-food and transport.

Beyond mere technology acquisition, there is a pressing need for new competencies. SMEs frequently suffer from a competence gap, lacking the updated knowledge required at both managerial and lower-level worker echelons. This necessitates continuous learning, vigorous re-skilling and up-skilling programs, and a fundamental shift in organizational culture to embrace agility, innovativeness, and analytical thinking.

The book further highlights the complexities inherent in the current regulatory environment.

A unified, forward-looking regulatory approach is crucial to incentivize SMEs' digital engagement and internationalization. Tools like regulatory sandboxes and Digital Innovation Hubs are emerging as vital for promoting innovative experimentation and facilitating technology adoption, creating safe spaces for SMEs to test new solutions. The European Union's efforts to simplify online company formation and to regulate new financing avenues like crowdfunding and crypto-assets are clear steps towards this goal.

The text also draws attention to possible shortcomings, particularly in areas where the lack of coordination or inconsistent implementation may jeopardize the effectiveness of EU policies. For instance, the ongoing absence of international alignment in tax regulation enables aggressive tax planning by large multinationals, disproportionately increasing the burden on domestic SMEs. Likewise, diverging implementation of EU directives across Member States risks creating a polarized Europe with fragmented procedures, potentially undermining the very goal of a seamless single market.

Finally, the volume encourages a critical reflection on the often-overlooked ecological and social implications of digitalization, challenging the dominant narratives that surround it. Regarding the environmental dimension, it deconstructs the idealized notion of a dematerialized and environmentally sustainable digital economy, revealing instead that digital processes frequently entail substantial resource extraction and significant ecological harm.

From a social perspective, digitalization can deepen existing inequalities related to geography, gender, and social class. It may lead to the displacement of low-skilled workers, widen wage gaps, and intensify the exploitation of often overlooked laborers involved in the digital economy. The '*digital divide*' does not only concern access to technology, but also the ability to use digital tools effectively. This challenge is particularly significant for women entrepreneurs, even though digital technologies offer new possibilities for business development and growth.

To conclude, the ability of SMEs to thrive in today's digital landscape depends on how effectively they can respond to a complex set of economic, regulatory, and organizational dynamics. This goes beyond investing in technology and infrastructure. It requires a genuine openness to change, a commitment to continuous learning, and a willingness to confront the deeper social, economic, and environmental implications of digital transformation. By developing a broad and critical perspective and adopting flexible and forward-looking strategies, SMEs can turn today's challenges into meaningful opportunities and strengthen their essential contribution to the economy of the future.

Recognizing the need for a comprehensive and dynamic perspective, the volume '*SMEs in the Digital Era: Opportunities and Challenges of the Digital Single Market*' is well worth reading. It offers an in-depth examination of the ongoing digital transformation, portraying a complex and interconnected landscape of advantages and limitations faced by SMEs. Rather than depicting a simple or linear progression, the digital journey of these key economic actors is revealed as a multifaceted process that demands strategic vision, adaptability, and critical engagement.