





## Innovation and Export



**Smart Innovation Set**

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# **Innovation and Export**

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*The Joint Challenge of the Small Company*

Manon Enjolras

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## Introduction

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Innovation and internationalization have been identified as two of the main driving forces of economic growth (Pla-Barber and Alegre 2007; Bołkunow 2019). And while globalization has changed the competitive playing field for all companies, this is especially true for small organizations within which available resources are limited (Etemad 2004; Szczepanski 2016).

The internationalization of a company can take several forms: import, external growth, direct/indirect export, etc. For this research work, we focus on a specific mode of internationalization: exporting. Several studies point out that exporting is one of the most common ways to enter the foreign market in the early stages of SME internationalization (Bianchi and Wickramasekera 2016). Thus, throughout this book, we will define exporting as the internationalization strategy aimed at positioning our products and services outside the geographic boundaries of our home country.

Exporting provides an additional source of demand via a larger market or by enabling the creation of a new market (Monreal-Pérez *et al.* 2012). In addition, international competitiveness helps boost the domestic market and pushes other companies to internationalize (DiPietro and Anoruo 2006). However, international markets are characterized by much stronger competitive pressure than domestic markets (López *et al.* 2005). SMEs are thus generally hampered by their difficulties in mobilizing the strategic resources needed to enter and succeed in international markets (Etemad 2004). However, if we look at the main figures on the competitiveness of

companies, and more particularly small companies, it appears that despite the difficulties they face, SMEs do export. However, although SMEs employ a large share of the workforce, they are under-represented in global trade relative to their contribution to national economies (OECD 2018), particularly in the industrial sector. Direct exports by SMEs account for only 3% of the total SME manufacturing sales, compared to 14% for large companies (WTO 2016). In contrast, the rate of export participation appears to be clearly correlated with company size. The participation of medium-sized companies<sup>1</sup> (59%) is higher than that of micro or small companies<sup>2</sup> (9% and 38%) and is quite similar to that of large companies (66%) (WTO in English 2016). Thus, it seems necessary to strengthen export support, particularly for smaller structures by helping them better mobilize and optimize their strategic resources.

On the other hand, innovation has always been synonymous with success for companies, but it was generally considered a privilege reserved for some, mainly the large high-tech multinationals. However, the rapid industrial evolution linked to globalization has led all companies to constantly renew themselves in order to more quickly react to the changing conditions they face: shorter product life cycles, changing customer requirements, an evolving technological environment, aggressive competition and environmental regulations, among others. As a result, SMEs, perhaps even more than other companies, are also affected by these challenges. They are therefore forced to integrate innovation<sup>3</sup> into their survival strategy. Nevertheless, managing innovation for small businesses in traditional sectors remains a difficult task. Although an SME is generally considered to be an environment conducive to innovation, it is not always successful (BPI France 2011b). Their flexibility seems to be a major asset, but their lack of access to resources and skills can prove to be a major constraint (Szczepanski 2016). Innovation represents a risk for SMEs, and they are not always able to assume it (European Commission, 2016b). Thus, innovation

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1 As defined by the OECD TEC (Trade by Enterprise Characteristics) database: microenterprises: <10 employees; small enterprises: 10–49 employees; medium enterprises: 50–249 employees; large enterprises: >250 employees.

2 The gap between micro and small enterprises is explained by the fact that the majority of microenterprises are not export-oriented, due to their specific activities (local services, for example).

3 In this book, we use the definition of innovation supported by ISO 56002 (2019): a new or changed product, service, process, business model or organization.

is clearly identified as a success factor for SMEs, but the difficulties they face hinder the proper management of their internal processes.

Supporting SMEs in their innovation and export activities is, therefore, a major challenge. Indeed, SMEs are the most common form of business organization and the largest provider of employment in the world. Indeed, they represent more than 95% of industrial enterprises in OECD countries (European Commission, 2016a). Consequently, they represent an extremely important economic stake and supporting them in their innovation and export efforts is therefore crucial. It seems essential to help them improve their internal practices in order to change their behavior and improve their performance while adapting to the environment in which they operate.

In this respect, there is currently a real political and economic will to take into account the considerable stakes involved in the development of SMEs. All over the world, numerous support services are offered, at the regional or national level, by public and private institutions. However, and despite the important commitment of the European Union and local authorities (innovation and export have been identified as priorities for action at the European level, such as the Horizon 2020 program), support for SMEs in innovation and international activities is not always adapted.

For example, it seems that current support services are mainly represented by financial or informational incentives (Enjolras *et al.* 2015). If the main difficulties encountered by SMEs, both for innovation and export, do indeed concern access to resources, it is nevertheless worth questioning the relevance of a temporary increase in resources without the organization and strategy necessary for their proper exploitation being put in place. In the case of incentive schemes, the resources provided to SMEs are mostly *ad hoc*, without the organizational and strategic difficulties associated with innovation and export being really addressed. Several European Commission reports have emphasized that the most effective type of support seems to be individualized support, as it allows direct action on the internal organization of SMEs by improving their skills and strengthening their resources (Francis and Collins-Dodd 2004). By building skills and changing the routine practices and activities of SMEs, the proposed support appears to be more sustainable and effective (European Commission, 2016b). Thus, it would seem that sustainable and targeted support for SMEs is about empowering them with strategic, comprehensive, and cross-cutting skills and resources.

On the other hand, although the Interreg 2014–2020 strategy devotes an entire axis to increasing the cross-border competitiveness of SMEs and 8 billion euros to SMEs, the support initiatives for SMEs tend to adopt a compartmentalized vision of the aid they offer. Support for innovation and export appear to be two disconnected initiatives, whereas a trend towards coupling these types of support is gradually emerging, according to the European Commission (2007). Indeed, recent studies have shown that companies that are able to manage innovation and international activities are simultaneously more profitable and sustainable over time (Love and Roper 2015).

According to BPI France (2011a), more than one innovative SME in two is present on the international market. This observation highlights the existence of a link between innovation and exporting, and innovation clearly appears to be a driver of international activities. SMEs that innovate are indeed more likely to engage in global markets than non-innovating companies. Process and organizational innovation, for example, can increase company productivity by reducing production costs and enabling SMEs to achieve the minimum level of efficiency required to cover fixed export costs. Through product innovation, marketing innovation and innovative branding strategies, SMEs differentiate their products from those of their competitors, allowing them to gain market share in international markets (OECD 2018). In particular, greater flexibility and a strong ability to customize and differentiate products can give SMEs a competitive advantage in global markets over larger companies, as they are able to quickly respond to changing market conditions and increasingly shorter product life cycles. For example, a report on the behavior of European SMEs (FedEx 2015) shows that fast-growing SMEs are almost twice as likely to export as declining or stagnant SMEs. Indeed, some inter-country niche markets are dominated by SMEs, and small innovative companies often become key partners for large multinationals to develop new products or serve new markets (OECD 2018).

From a theoretical perspective, the study of the link between innovation and export in the context of SMEs represents a very important research topic in the current scientific literature (Love and Roper 2015). Specifically, much work focuses on the direction of causality regarding the impact of one on the other. This paradigm is supported by two theories: self-selection (Monreal-Pérez *et al.* 2012; Boso *et al.* 2013; Raymond and St-Pierre 2013) and learning-by-exporting (Kafouros *et al.* 2008; Golovko and Valentini 2014). Self-selection considers that innovation positively impacts exporting.



It is considered a necessary condition for exporting, allowing a company to be sufficiently armed to access international markets. Learning-by-exporting, on the other hand, considers that it is international experiences that promote innovation within companies through the acquisition of technical, commercial, and/or cultural knowledge that enables them to envisage the development of innovations. Whether it is self-selection or learning-by-exporting, these two theories consider the link between innovation and export through a causal relationship. They are interested in the impact of one activity on the other and reason in terms of cause and effect. These two theories coexist in the scientific literature and are regularly tested through numerous empirical studies. However, the results greatly diverge from one study to the next, and it is impossible to validate or invalidate either theory from a general perspective (Enjolras *et al.* 2016).

The study of the link between innovation and export, when studied in terms of causality, thus leads to a controversial debate for which it seems difficult to find a consensus. This is why some studies try to go beyond this causal vision by proposing a vision in terms of complementarities. Innovation and export would not only be activities that have an impact on each other. They would be complementary activities: if we engage in one, it facilitates engagement in the other (Golovko and Valentini 2011). This notion of complementarity also seems to have an impact at the institutional level. There is currently an emerging trend to couple innovation and export support schemes (European Commission 2007), but this is a topic that is very little addressed in the literature. It would seem, therefore, that the study of innovation and export in SMEs requires a different perspective, one that aims to consider them jointly rather than through a cause-and-effect relationship.

By way of summary, given the context of innovation and export in SMEs, three observations can be made:

- the first concerns the limited performance of SMEs on international markets and their difficulty in setting up a successful innovation process. This can be explained by a preponderant constraint directly linked to their small size: the lack of resources and the difficulty to put in place the right conditions to exploit them. Thus, SMEs wishing to progress must structure their internal processes, prioritize their actions and identify adequate improvement levers in view of the means they can mobilize;

– the second observation concerns the incentive nature of the support offered to SMEs. The schemes mostly offer financial support or information, which appears to be one-off assistance rather than real long-term support. It, therefore, seems necessary to offer support based on individual advice, allowing the company's organization to be modified by changing the practices and activities in place, and thus offering more sustainable support;

– the third observation concerns the link between innovation and export. In the scientific literature, this link has traditionally been considered in the form of a cause-and-effect relationship. However, a paradigm shift seems to be emerging, highlighting the need to propose an approach that breaks with this causal vision in order to take into account the complementarity that exists between innovation and export. It is a question of considering these two activities together and not in terms of the impact of one on the other.

Thus, through this research work, we propose considering the relationship between innovation and export from an original angle. The objective is to formalize the innovation–export relationship in SMEs through the complexity paradigm (Morin 1977). This formalization leads to the identification and characterization of a common conceptual space between innovation and export capabilities. This common space gathers the joint innovation–export activities that an SME must develop in order to simultaneously progress in terms of innovation and export. It, therefore, represents a priority area for action to be promoted among companies in order to encourage them to modify their internal practices to exploit synergies and thus optimize the mobilization of their resources. From an operational point of view, the valorization of this common space requires the proposal of a support tool to evaluate the degree of mastery of the companies concerning the practices, resources and competencies that make up this common space. The first objective of this diagnostic tool is to draw up a profile of the companies evaluated in order to identify the activities they need to develop as a priority in order to successfully complete their export and/or innovation process. The second objective is to propose personalized recommendations based on their strategy to promote the emergence of innovation–export synergies. The implementation of these recommendations allows the company to progress both in terms of innovation and export, relying on synergies to mobilize its resources in an adequate and optimized way.

The ambition of this book is, therefore, to support a joint and complex vision of innovation and export in SMEs and to apply it to the problem of the business world. Initiated in 2013, through a thesis (Enjolras 2016), the work carried out is part of the PRINCIP research chair (research cluster on innovation and SMEs' innovation capability) at the University of Lorraine and was conducted in collaboration with the IDEFI InnovENT-E project (initiative of excellence in innovative training). This research work is also a multidisciplinary initiative between industrial engineering and management sciences, promoting the need for an alliance between the creation of representation frameworks to share vision and meaning (scientific approach specific to management sciences, based on value creation and a cognitive approach to individuals and situations) and access to modeling formalisms from complex systems (a scientific approach specific to engineering sciences that favors instrumental development). Thus, this work exploits the strength of this multidisciplinary combined with a strong field vision provided by numerous partners from the regional SME ecosystem. They have indeed several academic, industrial and institutional forms of support (UIMM<sup>4</sup>, F2I<sup>5</sup>, CNRS University of Lorraine<sup>6</sup>, Lorraine University of Excellence initiative of the PIA2<sup>7</sup>, Lorraine Regional Council, etc.). This book presents the results of this work in order to promote a joint vision of innovation and export, as well as the exploitation of the resulting synergies among both SMEs and institutional support actors. Through the design of a multi-criteria decision support tool aimed at highlighting these synergies, this work proposes a concrete application of this joint vision and its contributions, particularly in terms of resource optimization, which is a particularly crucial issue for SMEs.

The book is composed of five chapters divided into two complementary parts. The first part exposes and justifies the scientific positioning of the research. It, therefore, approaches the problem of innovation and export in SMEs from a theoretical point of view. Chapter 1 aims to introduce and relate the main concepts mobilized in order to arrive at a robust theoretical

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4 *Union des industries et métiers de la métallurgie*, French Union of Metallurgical Industries and Trades.

5 *Fond pour l'innovation dans l'industrie*, Fund for innovation in industry.

6 Primary Support Exploratory Projects (*Projets exploratoires premier soutien*, PEPS) to foster interdisciplinary exploratory research.

7 *Plan d'investissement d'avenir 2 de l'ANR Lorraine université d'excellence*, reference ANR-15-IDEX-04-LUE.

framework. This chapter thus proposes an original vision of the innovation–export relationship by applying the complexity paradigm. The main result of this chapter is the identification of a common innovation–export space at the origin of synergies. Chapter 2 aims to define and characterize the common innovation–export space through the identification of joint activities. It, therefore, presents the process of identifying activities specific to innovation and those specific to export before describing the identification and characterization of joint innovation–export activities that enable SMEs to simultaneously improve their ability to innovate and export.

The second part adopts a more operational stance by seeking to transform the theoretical common space into a repository of joint practices at the origin of a functional decision support tool. The aim is to exploit the conceptual results of Part 1 to give them substance through the development of an evaluation tool (Chapter 3), and then applied through six case studies (Chapter 4). The tool, called “PE2I” (Potential Export and Innovation Index), was thus designed and tested with six French SMEs, from manufacturing or process sectors, of different sizes and technological intensity. This section provides feedback on the evaluation tool, its implementation and the performance of its results in order to identify prospects for improvement (Chapter 5).

PART 1

# The Relationship between Innovation and Export in SMEs