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Exploring open innovation in entrepreneurial private family firms in low- and medium-technology industries

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OPEN INNOVATION IN PRIVATE FAMILY FIRMS: ANOTHER STORY?

Most innovation nowadays requires extensive knowledge and resources to cope with issues that arise in the various stages of the innovation process. These are often lacking in private family small and medium-sized enterprises (SMEs). Such firms usually do not possess the required diversity of in-house resources and expertise, which makes it extremely difficult for them to rely solely on in-house innovation activities. Opening their boundaries and collaborating are, therefore, essential for innovation success. Open innovation (OI)—strategic collaboration with external partners to develop new technological innovations through sharing, using, and integrating knowledge—involves loosening control and allowing for a high degree of interdependence among the partners in the innovation process.

However, engaging in OI poses major challenges to family firms. Their willingness to engage in OI activities might be seriously hampered by a fear of control loss and/or by multiple and potentially conflicting goals within the family firm and family system. Some family firms successfully meet these challenges, others do not. Therefore, our main objective is to explore a diversity of OI processes in private family SMEs and to examine the ways in which family firms can rise to the challenges and succeed in innovating openly. In this respect, we recognize that OI processes are a specific type of strategic change that may involve various iterative cycles of internal change in which the firm may never reach a final state. The state of openness and the supporting internal characteristics need to be constantly scrutinized and maintained.

Following Chesbrough's original work, most OI research has addressed OI activities in large, R&D-intensive companies that use external technological knowledge to strengthen internal research processes (outside-in) and externalize internal technical know-how that does not support the current business model (inside-out) for generating additional funds. Only a few studies have begun to explore OI in smaller firms and non-R&D driven industries at an early stage. One of the main conclusions of these studies is that the well-established definition of OI, because it was developed for large, R&D-intensive companies, may not always capture the diverse and often creative approaches to OI in low- and medium-technology SMEs. The research on OI approaches in this group of companies has, however, remained sparse. Thus, there have recently been renewed calls for OI research in SMEs and sectors of industry that are classified as low- or medium-technology where the drivers for OI and the resulting dynamics may differ substantially from what we know on the basis of most current OI research. The present paper responds to these calls.

This article features the findings of a study of the OI processes followed by four Belgian private family firms in a wide variety of low- and medium-technology industries. Because little research on the topic has been published in either the family business or the OI literature, we conducted an exploratory, cross-case analysis with a focus on the question of "how private family SMEs successfully apply OI and what factors can account for their success." Our sample of firms was the outcome of a search process that started with the help of all of the Flemish Innovation Centers and local representatives of Flander's Chamber of Commerce and Industry. We purposefully selected privately held family

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SMEs that were recognized as OI champions by them, the press, OI experts, and academics. We then conducted in-depth interviews with the CEOs of the four firms and analyzed documents such as company websites, articles in newspapers, and professional journals. We used a semi-open interview protocol with questions about family dynamics, OI practices, and their interrelationships. With permission, we digitally recorded the interviews and made transcripts. Next, we looked for patterns and themes within and across the cases by taking advantage of pre-existing frameworks while allowing for new discoveries. The findings were shared with the study's participants to ensure the soundness and validity of our interpretations. Our cases illustrate how family SMEs operating in low- and medium-technology industries can successfully engage in OI by handling multiple and conflicting goals within the family firm in particular ways and by taking up orchestration roles within their own OI networks to minimize the concern for the loss of control. Table 1 gives an overview of the case companies Devan (textile chemicals), Curana (bicycle accessories), Dingens (precision barometers), and Boone (adaptable furniture).

FAMILY FIRMS AND OPEN INNOVATION: A MARRIAGE FULL OF CHALLENGES

For years, OI has been a hot topic in both academic publications and the popular literature. Despite this abundant attention, the OI literature has remained fairly sparse on issues that hamper or facilitate low- and medium-technology family SMEs' OI efforts to create new value. Only a few scholars (e.g., Kotlar, De Massis, Frattini, Bianchi, & Fang, 2013) have reached across disciplines and started to examine this innovation management topic from both an OI and a family firm perspective. Family-owned SMEs often have substantial resource constraints and less formalized R&D processes, which hamper their ability to turn internal R&D into a strategic asset. SMEs can, however, largely overcome these challenges by opening up their boundaries and using and integrating the necessary technological know-how from external collaboration partners. Therefore, investing in OI activities may be a beneficial strategy for family-owned SMEs.

However, choosing the road to open innovation is not self-evident in family-controlled SMEs. Private family firms are usually characterized by a powerful combination of family involvement in ownership, management, and governance, which gives the family owners the discretion to determine the goals and strategic options of the firm. As the boundaries between the family and the business are often blurred, the family firm's goal set may be a mixture of economic as well as non-economic family-oriented goals. Therefore, family owners are concerned not only about pecuniary benefits but also about their non-economic utility, which has been labelled in the family-business literature by Gómez-Mejía and colleagues as the family's "socioemotional wealth" (SEW). Research has found that strategic decision-making in family firms is driven by the preservation of the family's SEW as the primary frame of reference. Thus, non-financial objectives such as maintaining authority, control, and influence over the family firm or perpetuating the family dynasty seem to be critical reference points in strategic decision-making.

The salience of non-financial objectives in family firms often makes the engagement in an OI strategy difficult. OI may lead to obvious advantages like risk sharing and lower R&D expenditures for the individual firm, but it also enhances opportunity risk, unwanted spillover effects, uncertainty, knowledge appropriation, and concern for the loss of control. An OI strategy implies that the family firm loses control over aspects of the innovation process (e.g., knowledge appropriation concerns), which may hamper the family's SEW and consequently its willingness to engage in collaborative innovation practices. However, non-financial objectives have several dimensions, which may have different effects on innovation. For example, the objective of keeping "family control and influence" may hamper innovation activities whereas "dynastic succession intentions" imply a long-term orientation, continuity, and growth, which are more likely to be achieved by greater investment in innovation. Thus, although family firms generally may benefit from an OI strategy, it is clear that they have to overcome several challenges in safeguarding their SEW. How family firms handle these challenges is an open question. Fig. 1 gives an overview of the key findings from our cross-case analysis in terms of the main drivers of OI, the most important challenges while engaging in OI, and the mechanisms for meeting these challenges.

In the next sections of the paper, we will explore and expand on the key findings of our study. Based on the lessons learned from the cases, we will explain how and why our exemplary case companies took the road of OI, achieved goal congruence between the family and the business system, overcame potential tensions within the family system itself, and orchestrated their OI activities to minimize perceived control losses, thus reconciling the seemingly conflicting objectives of the business and the family system. The lessons learned are of importance to both practitioners and academics as innovation is an essential driver of competitive advantage and firm performance.

ON THE ROAD TO OPEN INNOVATION: DECLINING PERFORMANCE AND LONG-TERM COMPETITIVE CHALLENGES

An important unsolved question is what drivers influence the choice of family SMEs to take the road of OI. Table 2 presents the internal and external drivers, collaboration structures, and outcomes of OI in each of the cases. As to the external OI drivers, the four cases faced harsh market conditions in terms of rapidly increasing commoditization, globalization, or unexpected and detrimental new government regulations that forced these family firms to find new ways to create value and even to protect themselves from financial distress and liquidation. We observed two different kinds of external OI triggers. In two cases (Curana and Dingens), the external factors (fierce price competition and a legal ban on the primary raw material) caused a *substantial short-term performance hazard* and had an imminent continuity-threatening effect. For the other two cases (Devan and Boone), *a long-term orientation and strong concern about the declining competitive position* of the firm during an intra-family succession or acquisition event initiated the search for new business models. Because the SMEs under study did not