

## GROWTH MANAGEMENT PRIORITIES OF TECHNOLOGY-BASED MICRO-ENTERPRISES IN A SPARSELY POPULATED REGION

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### **Abstract:**

Micro-enterprises represent more than 95% of European enterprises. In the European Union, smaller firms contribute to job creation on a larger scale than larger firms; however, micro-enterprise is only occasionally present as a unit of analysis in the European management literature. In particular, there is a lack of literature concerning the early-stage growth management priorities of micro-enterprises. Furthermore, location is a key factor in business development, and several studies have indicated differences between urban and sparsely populated areas. To address this gap, this multiple-case study aims to answer the following research question: What are the critical managerial incidents that occur during the growth of technology-based micro-enterprises in sparsely populated regions? The study answers this question by analysing and describing in detail the management priorities of the owner-managers of five technology-based micro-enterprises located in a sparsely populated region.

*Keywords: micro-enterprises, management priorities, sparsely populated area, growth management, critical incidents.*

## 1. INTRODUCTION

Micro-enterprises, which are a subset of small and medium enterprises (SMEs), represent more than 95% of European enterprises and are considered a driver of the European Union (EU) economy. The EU defines a micro-enterprise as an enterprise that employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million (European Commission, 2003). Micro-enterprises are a common type of firm (Reid, 1995). In 2015, micro-enterprises accounted for 92.8% of enterprises and 37% of the growth in total employment in the EU, and these numbers are expected to increase (Young, 2013). However, there is little academic research focusing on micro-enterprises (Kelliher & Reinl, 2009), resulting in a considerable gap in the literature regarding the reality of this sector (Samujh, 2011). Specifically, there is a lack of research on micro-enterprises' growth challenges (Gherhes et al., 2016; Heshmati, 2001; Perren, 1999), management development (Devins et al., 2005), innovation practices (Faherty & Stephens, 2016) and profitability determinants (Salman & Yazdanfar, 2012).

Compared to larger businesses, micro-enterprises are intrinsically different in terms of their organisational characteristics and approaches to business challenges and obstacles (Kelliher & Henderson, 2006; O'Dwyer & Ryan, 2000). It is widely acknowledged that micro-enterprises experience resource scarcity, which forces them to operate under financial and expertise constraints (Kelliher & Reinl, 2009). In this context, micro-enterprises are largely influenced by their owner-managers (Burns, 2010). The culture of a micro-enterprise is largely an extension of the owner's personality, as the owner plays a pivotal role in the micro-enterprise's focus and success (Burns, 2010; Kelliher & Reinl, 2009). Micro-enterprises are also managed in an informal and personalised way (Burns, 2010), and decision-making relies on the owner's intuition; thus, there is pressure on the owner-manager to be an expert in all fields of management (Kelliher & Henderson, 2006). De Wit and De Kok (2014) analysed job creation within the different firm size classes for the 27 Member States of the EU. Their analysis showed that, across the EU as a whole, smaller firms contribute to job creation on a larger scale than larger firms. Net job creation rates decrease with each firm size class.

According to Storey (1994), together with a firm's age, sector, size and ownership structure, location is a key influencer in business development. In sparsely populated areas, businesses face particular challenges relating to market size, access to larger markets and infrastructure gaps (Siemens, 2010). Businesses may be less inclined to innovate due to the relative absence of local competitive markets. The low population density is reflected in the scarcity of potential partnerships and more sparsely distributed research and development, business support agencies, educational actors and training providers (North & Smallbone, 2000). The small size and occupational composition of labour markets may impose constraints on rapidly growing enterprises (Smallbone et al., 2002). Furthermore, areas that lack entrepreneurial networks are burdened with knowledge filters and impediments to knowledge spill-overs (Audretsch, 2012).

Micro-business growth can be studied from multiple perspectives rooted in static equilibrium theories (e.g. Coase, 1937), stochastic models (e.g. Gibrat, 1931), transaction cost theories (e.g. Williamson, 1975), economics of growth theories (e.g. Penrose, 1959), resource-based theories (e.g. Penrose, 1959), evolutionary theories (e.g. Nelson & Winter, 1982), organisational ecology theories (e.g. Hannan and Freeman, 1977), strategic adaptation theories (e.g. Sandberg & Hofer, 1982), motivational theories (e.g. McClelland, 1961) and configuration theories (e.g. Churchill & Lewis, 1983; Greiner, 1972). This study focuses on the configuration perspective. Whereas most other perspectives are concerned with the factors that lead to growth, the configuration perspective deals with the actual growth process. According to faherty and Wiklund (2006), the configuration perspective focuses on how managerial problems occur and how they can be dealt with during the presumed growth of a firm in typical stages of development.

The configuration models developed over the past few decades vary widely in terms of their industry of focus, use of empirical evidence, number of stages and other factors (e.g. Siu & Kirby, 1998). Recent reviews of the literature have shown the existence of numerous stage models (see Levie & Lichtenstein, 2010; Muhos et al., 2010; Phelps et al., 2007). Among these studies, the focused empirical models have produced consistent findings. Empirical studies have mostly examined technology-based firms. Empirical tests by Hanks et al. (1993) and Kazanjian and Drazin (1990), among others, have provided support for the applicability of technology-based, firm-focused models.

Based on an extensive review, Muhos (2011) developed a four-stage self-evaluation framework to synthesise and test the main findings of 14 recent empirically based stage models focusing on technology-intensive companies. Based on an analysis of 14 recent and relatively consistent models (Abetti, 2001; Garengo & Bernardi, 2007; Hanks et al., 1991, 1993; Hanks & Chandler, 1992, 1994; Kaulio, 2003; Kazanjian, 1988; Kazanjian & Drazin 1989, 1990; Mitra & Pingali, 1999; Poutziouris et al., 1999; Smith et al., 1985; Stam, 2007; Swiercz & Lydon, 2002; Van de Ven et al., 1984), the framework identifies the following early stages of technology-intensive SMEs: (1) conception and development, (2) commercialisation, (3) expansion and (4) stability/renewal. The framework was preliminarily tested in Thailand, Finland and Taiwan (Muhos et al. 2014a, 2014b, 2016). The initial findings supported the applicability of the framework in these contexts. Moreover, some context-specific viewpoints were emphasised and further analysed.

The present study aims to explore a new business context and describe the early developmental stages of technology-intensive companies located in a sparsely populated area. There is a lack of literature examining the growth management priorities of micro-enterprises located in sparsely populated areas. To address this gap, this study aims to answer the following research question:

What are the critical managerial incidents that occur during the growth of technology-based micro-enterprises in sparsely populated areas?

An in-depth analysis of the experiences of the managers of case businesses will support an examination of the gaps between the stage models and reality, as well as highlight potential paths for the further development of these models. To clarify the critical management processes used by micro-enterprises in a sparsely populated context, this study focuses on management priorities during the early stages of growth in five technology-based micro-enterprises.

## 2. THEORETICAL FRAMEWORK

The original models presented in the self-evaluation framework (Muhos, 2011) were re-analysed to discover the shared themes and sequential patterns during the early stages of technology-based firms, as revealed in the recent empirical literature. To delineate the findings of the models analysed for the original synthesis, a meta-analysis was conducted that identified main common themes. The shared perspectives were then classified into the following themes: focus, power, organisational structure, decision-making systems, strategic management, product and/or technology development and delivery, marketing, human resources and growth management. The four stages of the revised framework are presented in the following figure:

Theme	Stage 1: Conception and development	Stage 2: Commercialisation	Stage 3: Expansion	Stage 4: Stability/renewal
<b>Focus</b>	The stage begins with the establishment of the company. The objective is product and/or technology development and the establishment of an early customer base.	The stage begins with early reference customers. The objective is the creation of a business and the commercialisation of the product. Resource generation and survival are key issues.	Technical feasibility and market acceptance lead to high growth. The main objective is to manage the company toward growth and increase market share by marketing and manufacturing the product efficiently in high volume.	The company faces a slowing growth rate and intense competition in a maturing product market. The main objectives are developing a 2 <sup>nd</sup> generation of the product and improving the effectiveness and efficiency of the 1 <sup>st</sup> generation.
<b>Power</b>	The newly established firm is owner-dependent.	The firm is dependent on the owner and/or a small number of partners.	The owner and/or partners remain central, but delegate responsibilities to a small management team.	The owner-manager(s) is supported by or replaced by a professional executive or team of executives.
<b>Structure</b>	The organisation functions as a product development team.	The owner and/or a small number of partners form the nucleus of the administrative system.	Specialised functions are considered and added. Efficiency and effectiveness are improved through structures and processes.	A formal structure with defined roles is introduced, and more specialised functions and processes are added.
<b>Decision-making systems</b>	Formal decision-making systems and procedures are almost non-existent	Development of decision-making systems and procedures is started.	The firm moves rapidly from basic decision-making systems to scalable systems.	Strategies, rules and policies become written and supported by professional management systems.
<b>Strategic management</b>	The owner makes the strategic decisions.	The owner and/or a small number of partners make the strategic decisions.	Strategic planning is gradually formalised by the owner and/or a small number of partners.	Strategies, rules, regulations and procedures are standardised and formalised.

<b>Product and/or technology development and delivery</b>	Development is begun on a working technology and/or a prototype.	The stage is characterised by early manufacturing and initial technical challenges. The company learns to make and produce the product.	The company must produce and distribute the product at an increasing volume.	New product generation(s) and profitability improvements help to maintain growth and reasonable market share.
<b>Marketing</b>	The main activities relate to the business idea, market identification and resource mobilisation.	The stage is characterised by early marketing activities.	The company must sell the product at an increasing volume. New customers and new market channels require constant attention.	The identification of new markets is essential for company renewal.
<b>Human resources</b>	The management style is informal, flexible and creative. Communication is face-to-face.	The management style is participative and coordinative.	A sense of hierarchy increases. High growth leads to personnel problems.	Employees become specialised, non-risk-takers.
<b>Growth management</b>	The cash flow falls into the red due to the lack of a product.	The amount of negative cash flow decreases.	Positive cash flow increases rapidly.	The growth of cash flow decreases.

### 3. METHOD

This retrospective multiple-case study identifies the viewpoints highlighted by the managers of technology-based businesses. Business incidents and events reveal managers' priorities, which researchers can measure by focusing on how managers pay attention to, weigh and use available information to solve problems (Smith et al., 1985).

This study is designed as a retrospective multiple-case study (Saunders et al., 2009; Yin, 1989). Examining multiple cases allows an issue to be examined from different perspectives. Compared to single-case studies, multiple-case studies yield more reliable results (Baxter & Jack, 2008; Miles & Huberman, 1994). Multiple-case studies are also considered to be more robust and helpful in both generating and testing explanations (Herriot & Firestone, 1983). Moreover, multiple-case studies provide a stronger basis for theory-building than single-case studies (Yin, 1989).

In this multiple-case study, five cases in sparsely populated areas were analysed using the critical incident technique (CIT) and semi-structured interviews conducted during 2016. Cases were selected based on their technology focus, strong revenue growth during the micro-enterprise size phase and sparsely populated location. This study uses Gløersen et al.'s (2006) definition of a sparsely populated European area as one with a maximum population density of 12.5 inhabitants/km<sup>2</sup>.

To triangulate the data, the authors explored three managerial viewpoints in each case company: one in company management, one in operations management and one in marketing management. The interview frame comprised two sections: managers' open-ended stories of their micro-enterprises' growth and detailed descriptions of the positive and negative incidents experienced during this growth.

The case reports in this study are based on separate case studies. The results were drawn from interview data on critical incidents during the micro-enterprise size phase that were recalled by the owner-manager of the selected technology-based enterprises. The main characteristics of the case companies are summarised in Table 1:

**Table 1:** Main characteristics of the case companies in 2015

Case	Founded (year)	Number of employees	Revenue (€)	Technology
Case A	2003	5	335 000	Plant propagation technology
Case B	2007	3	260 000	Steel product manufacturing for site preparation
Case C	2008	17	1 200 000	Mechanical and process engineering design
Case D	2009	1	209 000	Design and manufacture of accessories for motor vehicles
Case E	2010	8	440 000	Manufacture of wood and of products of wood

This study seeks to clarify what happens during the very early stages of growth in technology-based micro-enterprises in the context of a sparsely populated region in Finland. Cases were selected based on their technology focus, strong revenue growth during the micro-enterprise size phase and sparsely populated location. The case companies were analysed using SIT and semi-structured interviews conducted in 2016 (Edvardsson & Roos, 2001; Fisher & Oulton, 1999; Flanagan, 1954). A critical

incident was considered to be an extreme behaviour that was either outstandingly effective or outstandingly ineffective with respect to attaining the general aims of the activity (Fisher & Oulton, 1999).

## 4. RESULTS

In this section, case-by-case analyses of the technology-based micro-enterprises are presented. By analysing the critical managerial incidents taking place in these micro-enterprises, this study seeks to clarify the management priorities of micro-enterprises in a sparsely populated area in Finland during their growth processes. The results were drawn from interview data on critical incidents recalled by the owner-managers.

### 4.1. Case A

Case A was established in 2003 and operates in the plant propagation technology industry. According to the self-evaluation, at the time of the interviews, Case A had reached stage 3.

Figure 1: Case A workforce and revenue development.

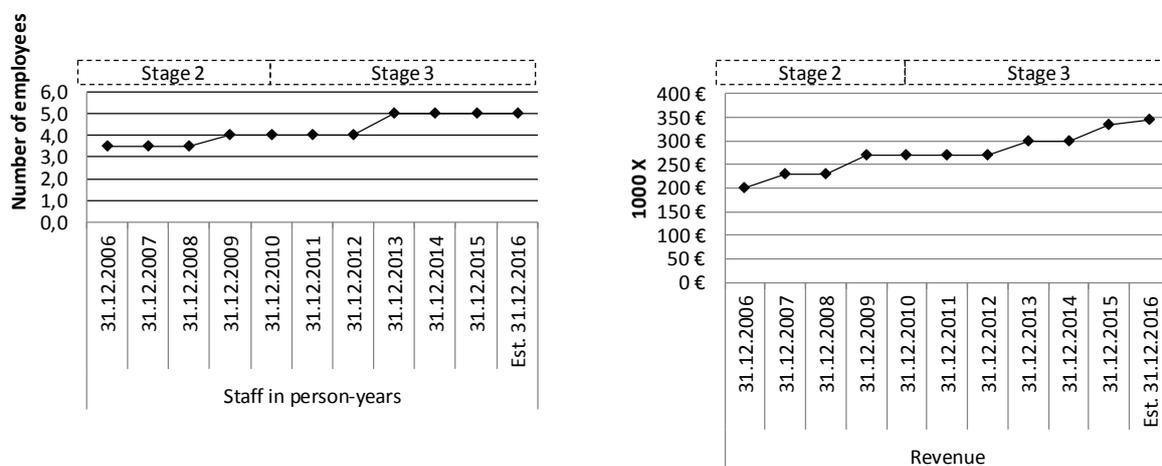


Table 2: Case A critical managerial incidents.

Positive incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<ul style="list-style-type: none"> <li>+ The owner-manager selected the latest production technology from the beginning to build a company ready for scaling.</li> <li>+ The owner analysed product sales and focused on high-demand products to generate economies of scale.</li> <li>+ <i>The sudden failure of production facilities due to heavy weather conditions forced us somewhat luckily to improvements in the production process.*</i></li> </ul>	<ul style="list-style-type: none"> <li>+ The owner-manager was assertive in developing his management skills.</li> <li>+ Key personnel developed high skill levels and became well-established in the firm.</li> <li>+ The company was able to find employees for seasonal work.</li> </ul>	<ul style="list-style-type: none"> <li>+ The expansion of e-commerce increased sales.</li> <li>+ Logistics services were added to the service portfolio to improve the company's competitiveness in the market.</li> <li>+ Technology was added to logistics to make it more effective.</li> <li>+ The company found logistics solutions that support reaching customers farther away in both home and overseas markets.</li> </ul>	<p><i>N/A: The company had not yet reached this stage</i></p>
Negative incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<ul style="list-style-type: none"> <li>- The risk management concerning information management failed in the beginning. E.g. a computer hard drive was accidentally damaged and some critical information was hacked.</li> </ul>	<ul style="list-style-type: none"> <li>- The market faced challenges, and demand fell.</li> <li>- A hard-working and trained employee left the company.</li> </ul>	<p><i>No critical negative incidents were recalled during this stage</i></p>	<p><i>N/A: The company had not yet reached this stage</i></p>

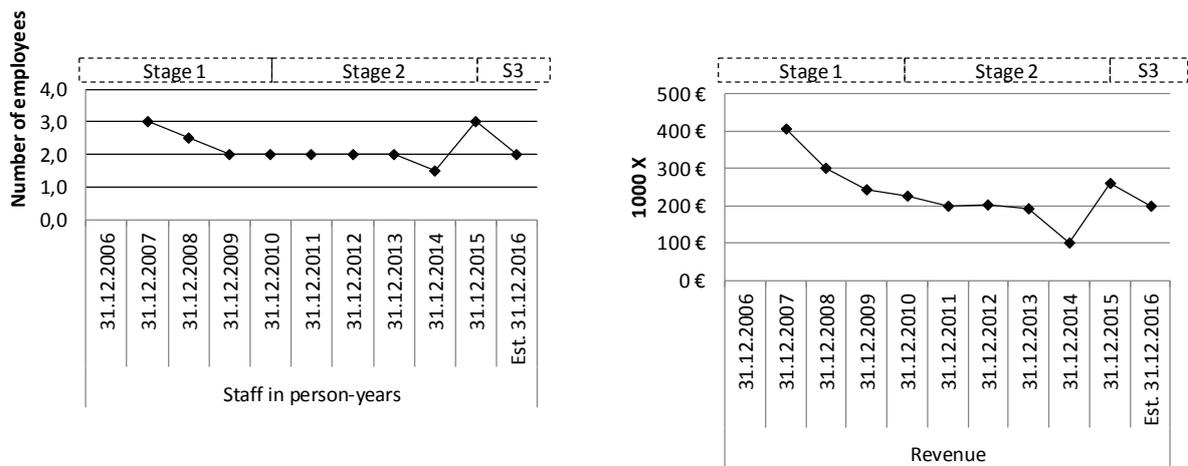
- *Anticipating production volumes was challenging.*
- An unexpected accident in the production facilities radically reduced production capacity.
- There was too much variance in the availability of seasonal employees.
- *Keeping prices on a target level was challenging.*

*\*italicized text represents participant quotes*

## 4.2. Case B

Case B was established in 2007 and operates in steel product manufacturing for the site preparation industry. It focuses on large-scale structures. At the time of the interviews, Case B had reached stage 3.

**Figure 2:** Case B workforce and revenue development.



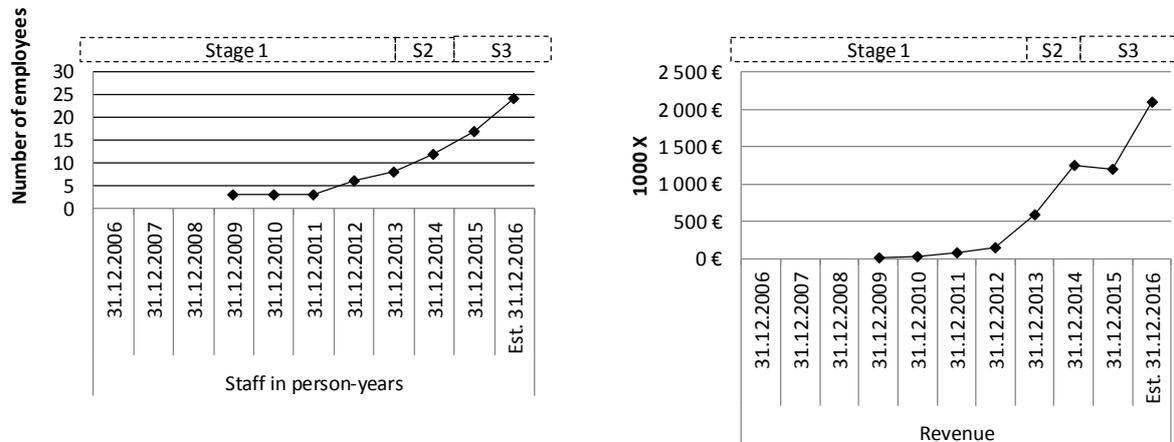
**Table 3:** Case B critical managerial incidents.

Positive incidents			
Stage 1	Stage 2	Stage 3	Stage 4
+ The company's board was reorganized early in the company's development.	+ The owner strengthened his business know-how through a course. + <i>Standardisation requirements forced us company to develop processes and quality.</i> + New customers were found to be reliable business partners.	+ An industry-specific standardisation certificate boosted sales. + External mentoring and peer-to-peer support helped to develop the business. + Sales increased rapidly.	<i>N/A: The company had not yet reached this stage</i>
Negative incidents			
Stage 1	Stage 2	Stage 3	Stage 4
- A co-founder introduced serious mistakes in the bookkeeping, forcing the owner-manager to let the co-founder go. - The owner experienced serious overload due to doing everything himself for a long period.	- An expansion to technical consulting services was planned, but resources were insufficient to implement it. - Competitive solutions arrived in the market. - Market competition intensified. - Market demand decreased.	- When projects were running at full pace, arriving tenders could not be addressed. -The owner began to feel too old and grew tired of developing the company.	<i>N/A: The company had not yet reached this stage</i>

## 4.3. Case C

Case C was established in 2008 and operates in mechanical and process engineering design. At the time of the interviews, Case C had reached stage 3.

**Figure 3:** Case C workforce and revenue development.



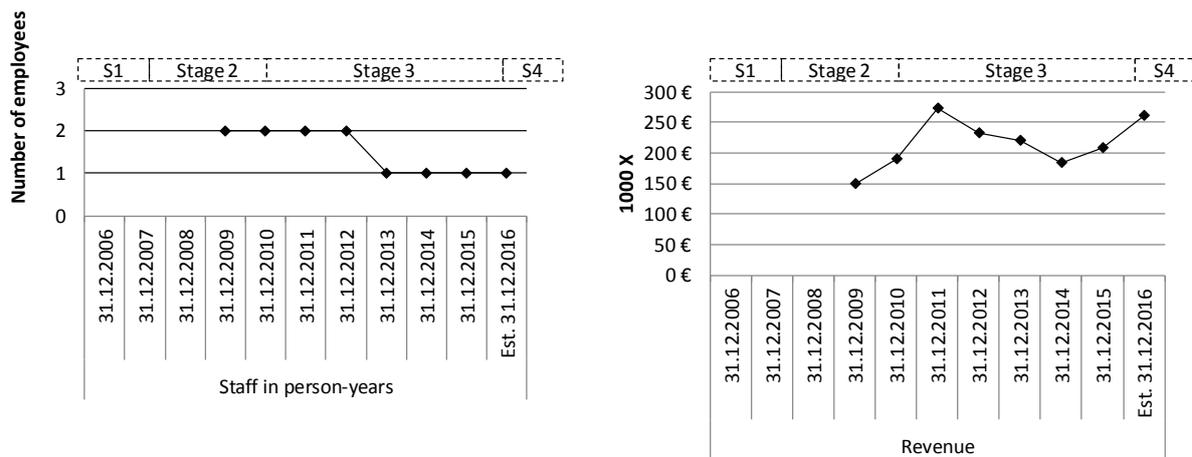
**Table 4:** Case C critical managerial incidents.

Positive incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<ul style="list-style-type: none"> <li>+ The products were developed and tested in the right environment.</li> <li>+ We understood that we need faster-selling products.</li> <li>+ We worked hard to make the pilot projects successful.</li> <li>+ With claws and teeth we caught the references.</li> <li>+ Customers were very pleased with the products.</li> </ul>	<ul style="list-style-type: none"> <li>+ The entrepreneurs understood the need to invest in sales. <i>We have such good products that we are now seriously going to sell.</i></li> <li>+ The company recruited its first professional seller.</li> <li>+ Sales expertise was increased by training.</li> <li>+ Key people were committed to ownership.</li> <li>+ A growing number of customers increased customer understanding.</li> </ul>	<ul style="list-style-type: none"> <li>+ The sales team was established.</li> <li>+ A skilled sales manager was found and sales models were built.</li> <li>+ We have invested in the development of corporate culture, values and strategies.</li> <li>+ Training and consulting were acquired for sales and financial management.</li> <li>+ Enterprise resource planning (ERP) evolved.</li> <li>+ The organisational structure was clarified. Responsibility and decision-making were clearly divided across several people.</li> <li>+ Systematic management team work gradually began.</li> <li>+ The company engaged in effective marketing with partners.</li> <li>+ Systematic processes simplified recruitment and orientation.</li> <li>+ Production output evolved continuously.</li> </ul>	<p><i>N/A: The company had not yet reached this stage</i></p>
Negative incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<ul style="list-style-type: none"> <li>- Funding was scarce.</li> <li>- Employees were overloaded.</li> <li>- There was not enough expertise to acquire funding.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>We made ownership arrangements that took resources.</i></li> <li>- <i>We did a product development that required a lot of resources.</i></li> <li>- <i>Demand fell on the market.</i></li> <li>- <i>We tried to build a resale model, but it was the wrong choice.</i></li> <li>- <i>We have made poor recruitments to the sales tasks.</i></li> </ul>	<ul style="list-style-type: none"> <li>- Finding suitable jobs for all employees was challenging.</li> <li>- The lack of a sufficient understanding led to the acquisition of a sub-optimal ERP system.</li> <li>- Decision-making slowed.</li> <li>- The implementation of new decisions slowed, and decisions needed to be made more carefully.</li> <li>- Employees were divided into two different locations.</li> <li>- <i>In special cases, we are not able to serve the customers as well as we would like to.</i></li> </ul>	<p><i>N/A: The company had not yet reached this stage</i></p>

#### 4.4. Case D

Case D was established in 2009 and operates in the design and manufacture of accessories for motor vehicles. At the time of the interviews, Case D was on the edge of stage 4.

**Figure 4:** Case D workforce and revenue development.



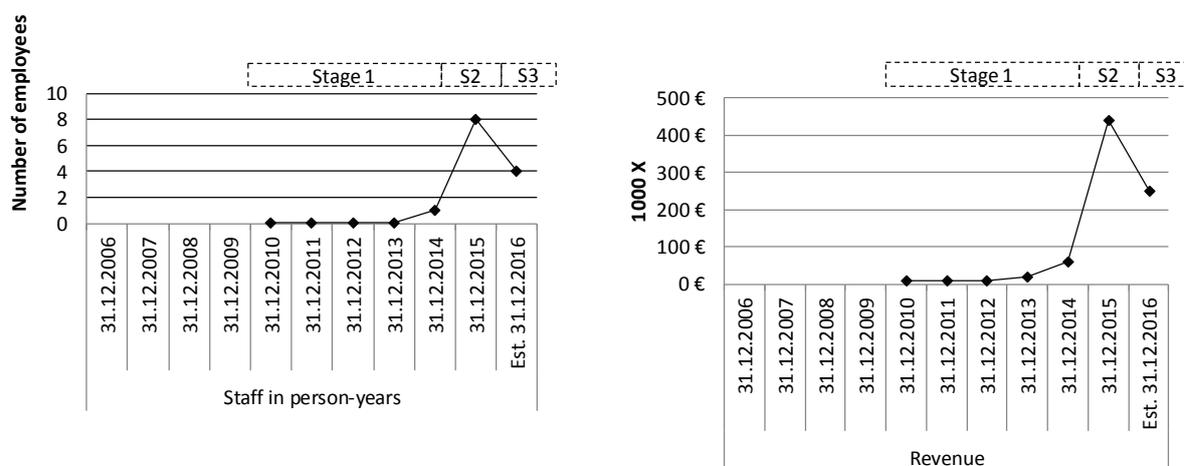
**Table 5:** Case D critical managerial incidents.

Positive incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<ul style="list-style-type: none"> <li>+ <i>The first customer was satisfied, and demand increased.</i></li> <li>+ There was a need for increased subcontracting due to a rapid growth in demand.</li> <li>+ <i>It was an interesting time to develop new products.</i></li> </ul>	<ul style="list-style-type: none"> <li>+ Production and methods evolved.</li> <li>+ <i>Switching to e-commerce was a big investment, but now it's the key factor of the business.</i></li> <li>+ The modularity of the products increased, and parts were designed for use in multiple products.</li> </ul>	<ul style="list-style-type: none"> <li>+ The company participated in a national television broadcast and gained significant brand awareness.</li> </ul>	<ul style="list-style-type: none"> <li><i>N/A: The company had not yet reached this stage</i></li> </ul>
Negative incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<ul style="list-style-type: none"> <li><i>No critical negative incidents were recalled during this stage</i></li> </ul>	<ul style="list-style-type: none"> <li>- Marketing was very expensive.</li> <li>- Personal life influenced the entrepreneur's resources, and he was unable to focus on the business.</li> <li>-The entrepreneur felt stress due to shouldering full responsibility and solitary decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>The whole time I was expanding my own limits. It was sometimes unclear whether the business is in control or not. It's stressful.</i></li> <li>- The entrepreneur was unsure of the company's ability to quickly respond to customer needs.</li> <li>- Growth in customer service increased the demand for resources.</li> <li>- The company had to learn how to better address complaints.</li> <li>-It was difficult to find good employees.</li> <li>-The entrepreneur was afraid of working with employees. <i>I'm used to doing [things] myself, and if I'm losing the freedom I had a self-employed entrepreneur?</i></li> </ul>	<ul style="list-style-type: none"> <li><i>N/A: The company had not yet reached this stage</i></li> </ul>

#### 4.5. Case E

Case E was established in 2010 and operates in the manufacturing of wood and wood products. At the time of the interviews, Case E had just reached stage 3.

**Figure 5:** Case E workforce and revenue development.



**Table 6:** Case E critical managerial incidents.

Positive incidents			
Stage 1	Stage 2	Stage 3	Stage 4
<i>No critical negative incidents were recalled during this stage</i>	+ Production was ramped up through the acquisition of the first big customer. + Export started. + The employees took on more responsibility.	+ Packaging was developed, and cost effectiveness was improved. + Two new shareholders increased human and financial capital.	<i>N/A: The company had not yet reached this stage</i>
Negative incidents			
Stage 1	Stage 2	Stage 3	Stage 4
- The cost structure was unclear, and company experienced negative results. - Growing orders caused production problems. - Production was inefficient, and the costs were too high. - Sales did not work systematically. - The entrepreneur felt that he did not get any help from the board. - The company was unable to move things forward. <i>Yes, we were planned, but not implemented.</i>	- Orders for the company's largest customer could not be delivered, and the customer was lost. - There were problems getting raw materials. - The company needed to invest to boost growth, but could not afford it. - Employee changes caused problems.	<i>No critical negative incidents were recalled during this stage</i>	<i>N/A: The company had not yet reached this stage</i>

## 5. CONCLUSION

This study aimed to answer the following research question: *What are the critical managerial incidents that occur during the growth of technology-based micro-enterprises in sparsely populated regions?* The study answered this question by analysing and describing in detail the management priorities of the owner-managers of five technology-based micro-enterprises located in a sparsely populated region.

This multiple-case study examined the management processes of five technology-based micro-enterprises within the context of a sparsely populated area. The research question concerned the critical management-related incidents that occurred during micro-enterprises' growth. The research question was answered by analysing the positive and negative incidents experienced and recalled by the managers of the case companies. A condensed version of the distribution of context-specific critical incidents is shown in Table 7 (see Muhos et al., 2011):

**Table 8:** Managerial priorities in the analysed cases (positive incidents = +, negative incidents = -)

	Case A	Case B	Case C	Case D	Case E	Total
Focus	+	-		-		+
Power	+	+	+-	--	--	+++
Structure			++			++
Decision-making systems	--	+	++			+++
Strategic management	+		++			+++
Product and/or technology development and delivery	+++	++	+++++	++++	+++	+++++
Marketing	+	+	+++++	+++		+++++
Human resources	+++	++	++		+	+++++
Growth management					+	+

The managers of the technology-based micro-enterprises located in the sparsely populated regions in Northern Finland highly prioritised both *product and/or technology development and delivery* and *marketing*. As presented in the Table 8, *product and/or technology development* had the highest number of critical incidents, suggesting that the managers prioritised it above all else. Most of these incidents were positive; however, there were also several challenges. *Marketing* was also highly prioritised during the micro-enterprises' early stages as the managers sought their first reference customers and later sought to achieve higher volumes within their selected target markets. The share of negative experiences within the *marketing* context was slightly higher than that in the *product and/or technology development* context.

*Human resource management* was the third-most commonly management priority among the owner-managers. In addition to critical leadership issues, such as workforce management, employee commitment and recruiting, the findings reveal the importance of owner-managers' self-management, including their self-development, self-care and time management. These findings are very similar to those of Saarela et al. (2018, in press), who examined the management processes of five service-based micro-enterprises within the context of sparsely populated areas within the same time window in the Finnish context. In early-stage micro-enterprises, owner-manager development is frequently concurrent with business development (see e.g. O'Dwyer & Ryan, 2000). All of the owner-managers in the present reported negative experiences related to personnel changes and failures in recruiting key personnel.

The next most commonly referenced group of management themes prioritised by the owner-managers included *power*, *growth management* and *decision making systems*. The managers were more likely to

refer to all three of these in negative rather than positive senses. *Growth management*, in particular, was described almost entirely through negative events.

Finally, *strategic management*, *focus* and *structure* were the least commonly mentioned management priorities in the examined tech-based micro-enterprises. The *development of organisational structure* was prioritised only in the fastest-growing case.

Overall, the owner-manager of the largest and most rapidly growing micro-enterprise (Case C) recalled the most positive events. Moreover, the incidents recalled by this manager were relatively evenly spread across all but one of the central themes synthesised from the stages of growth literature. This finding may reflect this entrepreneur's increased capability (through experience) to understand his business from different perspectives. Furthermore, Case C had a clear growth strategy from its very early stages, taking a systematic approach to sales growth from the very beginning. Many of the experiences related to sales investments were recalled as positive. In other cases, sales and marketing played less visible roles. Case C also leveraged external support through professional consultants and training services, facilitated a peer-to-peer network of entrepreneurs and experimented with new types of growth strategies (e.g. a successfully implemented employee ownership strategy, servitisation experiments, etc.). Compared to the owner-manager of Case C, the owner-managers of the four smaller firms recalled less positive events. However, this discrepancy may be caused by other issues including shorter experienced life-cycle of the company, memory and personality variances etc. as well. It is important to note that all of the owner-managers' experiences while navigating through the management challenges of early-stage growth provide rich benchmarking opportunities for the owner-managers of other small businesses in similar contexts.

Most of the cases mentioned some type of resource scarcity as a negative growth-related experience. A lack of resources often especially affected the firms' owner-managers, who tried to compensate by overloading themselves with work. In these situations, entrepreneurs may become bottlenecks for the growth of their own enterprises. Furthermore, many cases suffered an unclear revenue generation logic and cost management strategy, which prevented the implementation of an effective growth strategy.

Overall, in this explorative stage of analysis, the critical incidents recalled by the managers fit the revised version of Muhos' (2011) framework of management priorities. The study findings highlight the need to provide training and advisory services to the owner-managers of micro-enterprises. They also suggest that support activities, such as management development programmes designed for and provided to micro-enterprises, should focus on enhancing owner-managers' well-being and self-management. Furthermore, the results suggest that, in addition to a clear focus on product technology and sales marketing, growth-oriented tech-based micro-enterprises should pay attention to human resources as a main area of development.

Regarding the regional development of sparsely populated areas, small business development is vital. Such development, of course, depends on owner-managers' preferences, managerial skills and desire to grow. The data collected using the CIT approach were applied in an open-ended analysis of the management priorities of the case companies. Analytic generalisation (i.e. generalisation to a theory) can be used to build context-specific frameworks that are applicable to sparsely populated areas. The results of this multiple-case study may not be generalisable to other contexts.

The research focus of this study is limited to the studied context and the number of the cases. The findings cannot be directly generalised to other countries or business contexts, and they depend on the time of the data collection. Reproducing the same case study in the same environment at a later time would change some of the findings. However, the case study followed established protocols and developed a database to support further testing of the findings.

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Appendix 1. Distribution of management priorities—Cases vs. stages (positive incidents = +, negative incidents = -).

	Stage 1	Stage 2	Stage 3	Stage 4
Case A	+++ ---	+++ ----	++++	N/A
Case B	+ --	+++ ----	+++ --	N/A
Case C	+++++ ---	+++++ ----	+++++ -----	N/A
Case D	+++	+++ ---	+ -----	N/A
Case E	-----	+++ ----	++	N/A