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THE EARLY STAGES OF GROWTH IN MICRO-FIRMS

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Abstract:
Micro-firms are a dominant group in every economy. However, in the current literature, little attention has been paid to this SME subgroup. Thus, new context-specific knowledge on the early stages of micro-firm growth is needed to strengthen business environments and to develop business support services. The aim of this study was to investigate the growth of independently owned technology- or service-based micro-firms in northern sparsely populated areas (NSPAs) in Finland. This domain has not been extensively studied.

This study can be condensed into the following research questions: (1) How do the owner-managers of NSPA micro-firms evaluate their firms' current stages of growth? and (2) How do the stage descriptions in the self-evaluation frameworks correspond with the experiences of the micro-firms' owner-managers? This retrospective multiple-case study synthesised two empirically-based stage models into two self-evaluation frameworks—one for technology-based firms and one for service-based firms. We tested the two four-stage frameworks to describe current stages of 62 technology- or service-based micro-firms.

First, we determined the current stage of growth for each micro-firm. Second, we explored the applicability of the self-evaluation frameworks to the experiences of the micro-firms' owner-managers. The results indicated that the self-evaluation frameworks were a relatively good match for the growth experiences of each firm. Both frameworks may help researchers to provide more accurate data on the growth of technology- and service-based micro-firms.

Keywords: stages of growth, micro-firm, micro-entrepreneurship.

1. INTRODUCTION

Since the worldwide economic downturn of 2008, the national markets of the European Union (EU) have seen below-average rates of firm and employment growth. Even more vital are the contributions of micro-entrepreneurs (Muller et al., 2015). The importance of micro-firms (less than 10 employees and revenue less than 2 million €), to the economy of Finland, which represent 94,7 per cent (Official Statistics of Finland, 2014),excluding agriculture, forestry and fishing of firms in Finland, is not well understood. Thus, there is an urgent need for evidence-based knowledge on micro-firms to be able to remove barriers to entrepreneurship and to enhance new types of growth mechanisms at the micro-firm level.

The great majority of the northern parts of Nordic countries can be defined as sparsely populated areas (SPAs). These areas are strongly affected by globalisation, energy supply, climate change and demographic change. Peripherality, cold climate, low population densities and dispersed settlement patterns are characteristic of northern sparsely populated areas (NSPA) (Gløersen et al., 2006). Micro-firms business environment challenges are even more critical in the northern part of Finland. In Northern Ostrobothnia, the share of micro-firms is 95,3 per cent (Bisnode Finland Ltd.).

Supporting SMEs and creating new firms are important parts of the political agendas of many EU countries (Osmonalieva, 2011). EU countries have also expressed increasing interest in the policy areas of innovation and entrepreneurship, especially because of the Lisbon agenda, which emphasises the importance of effectiveness in these policy areas (Lundström & Kremel, 2011). According to Autio et al. (2007), however, even though entrepreneurship have a key focus in industrial policy makers, entrepreneurship as such is not likely to be a magic bullet for economic development.

According to Falk (2014), micro-firms are a dynamic group of firms characterised by a large proportion of young enterprises, higher growth rates and high exit rates. However, one unambiguous finding in the literature was that micro-firms are most often not distinguished from larger SMEs (Falk et al., 2014). The lack of studies on micro-firms is a result of the difficulty of obtaining the relevant firm-specific information (Falk & Hagsten, 2015). According to Delmar et al. (2003), firm growth is heterogeneous in nature and can be measured with a variety of different measures. Delmar (2006, p 65) categorised the most utilised growth indicators of turnover/sales, employment, performance, market share and assets; employment and sales are most often used, because “employment is an important indicator of job creation dynamics.”.

Many studies on firm growth have investigated the upper 10% of firms in terms of employment or sales growth (Storey, 1996). This is motivated by the fact that a few firms create the majority of employment. For example, Storey (1994) mentioned that 4% of the fast-growing firms in his sample employed about 50% of one cohort over a decade.

The aim of this study is to investigate the growth stage of independently owned technology- or service-based micro-firms that are less than 25 years old (Storey & Tether, 1998) in an NSPA. Study area coves Oulu South and Raahe subregions from Northern Ostrobothnia located in northern Finland. Oulu South regions are Haapavesi-Siikalatva, Nivala-Haapajärvi and Ylivieska-Raahe regions are Raahe, Siikajoki and Pyhäjoki

The research questions of this study are as follows:

(1) How do the owner-managers of NSPA micro-firms evaluate their firms’ current stages of growth?

(2) How do the stage descriptions in the self-evaluation frameworks correspond with the experiences of the micro-firms’ owner-mangers?

2. THEORETICAL FRAMEWORK

In this analysis, both technology- and service-based self-evaluation frameworks were used to determine micro-firms’ current growth stages. To create these frameworks, this retrospective multiple-case study synthesised two empirically-based stage models of technology- (See Muhos et al., 2010; Muhos, 2011) and service-based (Muhos et al. 2017, in press) enterprise growth. In this research, we used the following four stages for the technology-based firm self-evaluation framework (Muhos et al., 2010; Muhos, 2011), which are condensed into Table 2 below (see full stage descriptions in the appendix).

Table 1: The main stages of a self-evaluation framework for the early stages of a technology-based firm

At stage 1, growth through ***conception and development***, the newly established firm is owner-dependent.
Stage 2, growth through ***commercialisation***, begins with early reference customers. The objective is to create a firm and commercialise a product.
At stage 3, growth through ***expansion***, manufacturing and technical feasibility and market acceptance lead to high growth and continual change. The main objective is to manage the firm toward growth and to increase its market share by marketing and manufacturing the product efficiently and in high volume.
At stage 4, growth through ***stability/renewal*****,** the firm faces a slowing growth rate and intense competition in a maturing product market. Effort is needed to launch a second generation of the product and to address effectiveness and efficiency issues.

Similarly, a limited number of 25 empirically-based models have been formed to clarify the early stages of service-based firms. The condensed self-evaluation framework for the early stages of service-based firms is described in Table 3, modified from Muhos et al. (2017):

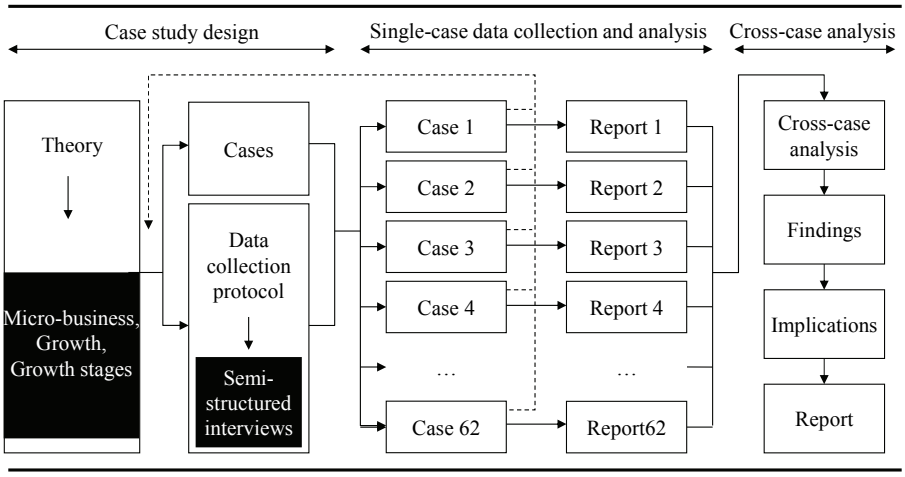
Table 2: The main stages of the self-evaluation framework for the early stages of a service-based firm

At stage 1, growth through ***market exploration and commercialisation of service(s)***. The service-based start-up is focused on the development and delivery of services and building market identity to survive.
At stage 2, growth through ***market acceptance***. Since market acceptance leads a service-based firm to rapid growth and constant change, the primary focus is on growth management.
At stage 3, growth through ***profitability and renewal***. Because of market saturation and increased competition, the focus of a service-based firm shifts to improving profitability and efficiency by formalising rules, procedures and financial controls.
At stage 4, growth through ***diversification***. To gain new momentum, the service-based firms focuses on new service generation, business areas and/or locations and on the development of a uniform firm culture.

3. METHODOLOGY

This retrospective multiple-case study used a holistic research strategy (Saunders et al., 2007; Yin, 2003). We divided the research process into three stages: case study design, single-case data collection, and analysis and cross-case analysis (Figure 1).

Figure 1. The research process



Qualitative research refers to any type of research that produces findings that are not the results of statistical or other means of quantification (Corbin & Strauss, 2007). Multiple data collection techniques may be employed in case studies and are likely to be used in combination with one another (Saunders et al., 2007) Moreover, both qualitative and quantitative evidence can be shown in a case study (Yin, 2003); in fact, Yin (2003) encouraged using both techniques. In line

with Yin's (2003) guidelines, we collected a combination of qualitative and quantitative evidence and focused on qualitative analysis. At the data collection phase, qualitative techniques may include focus groups, individual depth interviews and case studies (Cooper and Schindler, 2010).

The data were collected from semi-structured interviews designed to capture information on the growth stages of the technology- and service-based micro-firms. The interviews were constructed to allow the interviewees to explain and clarify the case and topics discussed. The questionnaire, which included a description of the growth stages, was sent early enough to give the interviewees time to review it in advance. A total of 62 micro-firms owner-managers operating in Northern Ostrobothnia were interviewed by phone, and each interview lasted up to half an hour. All micro-firms owner-managers participate in the ERDF project.

The interviewee and case firm characteristics are presented in Table 3. The following coding was used: *sex*: 1 = male, 2 = female; *position*: self-employed person = 1, entrepreneur = 2, CEO = 3, board member = 4, other = 5; *founder of the firm*: yes = 1, no = 2; and *legal form of the firm*: limited = 1, limited partnership = 2, trade name = 3, open firm = 4, cooperative = 5.

Table 3: Characteristics of the case firms

	Personal characteristics				Firm characteristics			
Case ID	Sex	Position	Work experience (years)	Founder	Firm birth year	Legal form	Number of employees 2015	Revenue [€] 2015
A	2	1	9	1	2007	3	1,0	19 300
B	1	1	5	1	2011	2	1,2	N/A
C	1	1	10	1	2009	1	1,0	209 000
D	1	2	30	1	1985	3	2,0	237 000
E	1	3	25	1	1995	1	6,0	3 600 000
F	1	2	6	1	2010	3	2,0	120 000
G	1	2	3	1	2013	3	2,0	166 000
H	2	3	4	1	2012	2	2,0	302 000
I	1	3	20	1	1996	1	9,0	1 589 000
J	2	3	3	1	2013	1	6,0	240 000
K	1	3	10	1	2007	1	5,0	225 000
L	1	3	10	2	1982	1	7,0	828 000
M	1	3	8	1	2007	1	3,0	260 000
N	1	2	4	1	2012	1	4,0	1 000 000
O	1	3	16	1	1999	1	9,0	500 000
P	1	1	2	1	2014	3	1,0	73 000
Q	1	4	6	1	2010	1	8,0	440 000
R	1	3	10	1	2010	1	7,0	460 000
S	1	2	31	1	1985	2	3,3	265 000
T	1	2	7	1	2009	1	4,0	920 000
U	2	2	4	2	1988	3	3,2	220 000
V	2	2	7	1	2009	4	0,5	40 000
W	1	3	5	1	2010	4	2,0	30 000
X	1	3	35	1	1995	1	11,0	735 000
Y	2	2	20	1	1997	1	2,0	113 000
Z	2	5	10	2	2005	2	3,0	210 000
AA	1	3	3	1	2012	1	9,0	451 000
AB	1	2	30	1	1986	2	3,5	368 000
AC	1	3	11	2	1991	1	8,0	668 000
AD	2	1	6	1	2012	3	1,0	25 000
AE	1	3	5	1	2011	1	6,0	1 391 000
AF	2	2	4	1	2012	1	1,0	30 000
AG	2	4	10	1	2006	1	2,5	200 000
AH	1	3	8	1	2008	1	17,0	1 200 000
AI	1	2	6	1	2010	1	4,5	350 000
AJ	2	2	5	1	2011	1	4,0	236 000
AK	2	2	15	1	2001	1	5,0	409 000

Case ID	Personal characteristics				Firm characteristics			
	Sex	Position	Work experience (years)	Founder	Firm birth year	Legal form	Number of employees 2015	Revenue [€] 2015
AL	2	1	12	1	2004	3	2,0	142 000
AM	2	3	30	1	1986	1	6,0	552 000
AN	1	3	20	1	1996	1	1,0	40 000
AO	1	3	8	1	2008	1	2,0	100 000
AP	2	2	2	1	2014	1	0,5	21 842
AQ	1	2	3	1	2013	3	3,3	138 000
AR	1	1	3	1	2013	3	1,0	20 000
AS	2	1	6	1	2010	1	1,0	50 000
AT	1	4	4	1	2012	1	5,0	668 000
AU	1	3	8	2	1998	1	1,0	300 000
AV	1	1	4	1	2011	1	1,0	17 000
AW	1	3	11	1	2005	1	3,0	320 000
AX	2	4	3	1	2014	5	5,0	150 000
AY	2	2	4	1	2013	1	3,0	334 000
AZ	1	1	18	1	1998	3	1,0	25 000
BA	2	1	2	1	2014	1	1,0	0
BB	1	3	9	1	2007	1	6,0	1 350 000
BC	1	3	8	1	2008	1	12,0	1 383 000
BD	2	4	16	1	2000	1	6,0	1 125 000
BE	2	2	1	1	2015	1	1,0	62 339
BF	1	2	13	1	2003	3	5,0	335 000
BG	2	3	26	1	1990	1	8,0	657 000
BH	1	3	16	2	1997	1	9,0	1 142 000
BI	1	3	13	1	2003	1	1,5	950 000
BJ	1	3	18	1	2001	2	3,5	628 000

4. RESULTS

First, we studied 62 technology- or service-based micro-firms to determine their current growth stages. The firms' legal structures were: *limited*, 41 (66,1 per cent); *trade name*,12 (19,4 per cent); *limited partnership*, 6 (9,6 per cent); *open firm*, 2 (3,2 per cent) and *cooperative*, 1 (1,6 per cent). The interviewees' roles were as follows: *CEO*, 26 (42,0 per cent); *entrepreneur*, 19 (31,0 per cent); *self-employed person*, 11 (18,0 per cent); *member of the board*, 5 (8,0 per cent) and *other*, 1 (2,0 per cent). The majority of the interviewees (90,3 per cent) were the firms' founders. The firms' ages varied from 1 year to 34 years, the average was 11 years and the standard deviation (SD) was 9 years. Only micro-firms that are less than 25 years old are included in the study. The number of male interviewees was 40 (65 per cent) and the number of female interviewees was 22 (35 per cent). The interviewees' minimum working experience was 1 year, with a maximum of 35 years and an average of 11 years.

At first, we used share of revenue to identify whether a firm's focus was technology- or service-based, which we used to determine which self-evaluation framework to use. In the final phase, each interviewee was asked to say how well the growth stage model in the self-evaluation framework succeeded in describing the firm's growth stages (1 = *not at all*, 2 = *fairly well*, 3 = *relatively well*, 4 = *very well* and 5 = *extremely well*).

Totally seven micro-firm (U, D, L, AB, AM, BG and S) interviewed are over 25 year old and marked by italic font in the Table 4. There were two service-based firms (AB and AS) that were not able to determine whether the firm's is a service or a technology based (which framework model to use). Furthermore, because the interviews ran out of time, six case firms (L, V, X, Z, AB and AE) did not finalise their evaluation of the growth model. A summary of the case firms' growth stages and the owner-managers' evaluation of the self-evaluation frameworks are presented in Table 4.

Table 4: A summary of the firms' growth stages and the owner-mangers' evaluation of the frameworks

Case ID	Current growth stage	Stage reached	Firm focus	Firm age	Evaluation of the framework			
					Stage 1	Stage 2	Stage 3	Stage 4
A	1	N/A	2	9	3	N/A	N/A	N/A
Y	1	N/A	2	19	4	N/A	N/A	N/A
AF	1	N/A	2	4	4	N/A	N/A	N/A
AN	1	N/A	1	20	3	N/A	N/A	N/A
AP	1	N/A	2	2	4	N/A	N/A	N/A
AR	1	N/A	2	3	5	N/A	N/A	N/A
BA	1	N/A	2	2	5	N/A	N/A	N/A
BE	1	N/A	2	1	2	N/A	N/A	N/A
G	2	2015	2	3	2	2	N/A	N/A
J	2	2014	2	3	4	4	N/A	N/A
P	2	2015	2	2	2	2	N/A	N/A
U	*2*	*1995*	*2*	*28*	*4*	*3*	*N/A*	*N/A*
W	2	2015	2	6	3	3	N/A	N/A
Z	2	2012	2	11	N/A	N/A	N/A	N/A
AG	2	2010	1	10	3	3	N/A	N/A
AL	2	2010	2	12	2	4	N/A	N/A
AT	2	2015	2	4	2	4	N/A	N/A
AU	2	2011	1	18	4	4	N/A	N/A
AV	2	2015	1	5	4	4	N/A	N/A
AY	2	2014	2	3	2	4	2	N/A
BH	2	2010	2	19	3	3	N/A	N/A
C	3	2010	1	7	3	3	3	N/A
D	*3*	*2000*	*1*	*31*	*5*	*5*	*4*	*N/A*
E	3	2012	1	21	4	4	4	4
H	3	2015	2	4	2	3	4	N/A
K	3	2014	2	9	3	3	3	N/A
L	*3*	*2013*	*2*	*34*	*N/A*	*N/A*	*N/A*	*N/A*
M	3	2015	1	9	1	2	3	N/A
N	3	2015	1	4	2	3	4	N/A
O	3	2008	2	17	1	3	2	3
Q	3	2015	1	6	3	3	3	N/A
T	3	2015	1	7	5	5	4	N/A
V	3	2014	2	7	N/A	N/A	N/A	N/A
X	3	N/A	2	21	N/A	N/A	N/A	N/A
AA	3	2014	2	4	3	4	4	N/A
AB	*3*	*2006*	*2*	*30*	*N/A*	*N/A*	*N/A*	*N/A*
AC	3	2015	2	25	N/A	3	3	N/A
AD	3	2014	2	4	2	2	2	N/A
AE	3	2015	2	5	N/A	N/A	N/A	N/A
AH	3	2014	1	8	5	5	5	N/A
AI	3	2015	2	6	3	2	2	N/A
AJ	3	N/A	2	5	3	2	3	N/A
AK	3	N/A	2	15	2	2	2	N/A
AM	*3*	*2010*	*2*	*30*	*4*	*4*	*3*	*N/A*
AW	3	2011	2	11	3	3	3	N/A
AX	3	2016	2	2	3	4	4	N/A
AZ	3	2012	2	18	3	2	2	N/A
BB	3	2009	2	9	3	2	2	N/A
BC	3	2014	2	8	5	5	4	N/A
BF	3	2010	1	13	3	2	4	N/A
BG	*3*	*1995*	*2*	*26*	*3*	*2*	*2*	*N/A*
BI	3	2011	2	13	3	3	3	N/A
BJ	3	2013	1	15	4	5	4	N/A
B	4	2016	2	5	2	2	2	2

F	4	2015	2	6	3	4	4	4
I	4	2014	1	20	3	3	3	3
R	4	2013	2	6	3	3	3	3
S	*4*	*2000*	*1*	*31*	*4*	*3*	*3*	*3*
AQ	4	2015	2	3	4	3	2	3
BD	4	2004	2	16	4	3	2	2
AO	N/A	N/A	2	8	N/A	N/A	N/A	N/A
AS	N/A	N/A	2	6	N/A	N/A	N/A	N/A

There are 15 companies which are technology-based and under the age of 25 years. 10 of the technology-based micro-firms (67 per cent) were at stage 3 (growth through expansion). Three of the firms was between 0 and 5 years old, seven firms were between 6 and 15 years old, five firms were between 16 and 25 years old.

Similarly, 38 companies are service-based and under the age of 25 years. 18 of the service-based micro-firms were at stage 3 (47 per cent), while 8 (21 per cent) were at stage 2 (growth through market acceptance). 17 firms were between 0 and 5 years old, 13 firms were between 6 and 15 years old, eight firms were between 16 and 25 years old. It is noteworthy that only two micro-firms were not able to evaluate their stages of growth.

5. CONCLUSION

It is evident that micro-firms' impact on the national economy is substantial (Muller et al., 2015). Micro-firms are numerically dominant in every country's economy. Even though micro-firms account for a large majority of SMEs, they remain comparatively under-researched (Gherhes et al., 2016). We tested two four-stage frameworks, one for technology-based and one for service-based firms, through interviewing 62 micro-firm owner-managers located in an NSPA.

First, we assessed all of the firms' current stages of growth. All owner-mangers from technology-based firms (15 total) were able to identify their firms' current stage of growth based on the framework provided. On the other hand, two of the owner-mangers from the 40 service-based firms were not able to identify their firms' current stage of growth using the framework provided.

Second, we explored the applicability of the self-evaluation frameworks to the experiences of the micro-firms' owner-managers. The results revealed that the average evaluation rating of stages is *relatively well*, indicating that the self-evaluation frameworks match well with the firms' growth experiences.

Both frameworks may help researchers to provide more accurate data on the growth of technology- and service-based micro-firms. Thus, this study creates new context-specific knowledge on the early stages of micro-firms' growth, which is needed to strengthen business environments and to develop business support services.

This study is limited to Northern Ostrobothnia in northern Finland. Therefore, some of the findings may be region- or country-specific. It would be interesting to compare the results of a similar analysis of micro-firms in the rural areas of other EU countries, Asia or the United States.

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7. APPENDIX: THE SELF-EVALUATION FRAMEWORKS

Table 5: The self-evaluation framework for the early stages of a technology-based firm

Stage 1	At stage 1, conception and development, the newly established firm is owner-dependent. The objective is product and/or technology development and the establishment of a customer base. The main activities relate to the business idea, identification of a market and resource mobilisation. Development of a working prototype begins. The management is informal, flexible and creative; communication is face-to-face; and the decisions are made by the owner. The organisation functions as a product development team. The cash flow falls into the red because there is not yet much to sell or offer.
Stage 2	Stage 2, commercialisation, begins with early reference customers. The objective is to create a firm and commercialise a product. The stage is characterised by early manufacturing and marketing and initial technical challenges. The firm learns to produce the product. The management style is participative and coordinative. The nucleus of the administrative system is dominated by the owner and/or a small number of partners. Resource generation and survival are key issues. The amount of negative cash flow decreases.
Stage 3	At stage 3, expansion, manufacturing and technical feasibility and market acceptance lead to high growth and continual change. The main objective is to manage the firm toward growth and to increase its market share by marketing and manufacturing the product efficiently and in high volume. The firm needs to produce, sell and distribute the product at an increasing volume, white creating efficient and effective structures and processes. New customers and new market channels require continual attention. Personnel problems result from high growth. The owner and/or entrepreneurial team are central, though a sense of hierarchy increases. Budgets are moderately utilised for communication. More specialised functions are considered and added. Positive cash flow increases rapidly.
Stage 4	At stage 4, stability/renewal, the firm faces a slowing growth rate and intense competition in a maturing product market. Effort is needed to launch a second generation of the product and to address effectiveness and efficiency issues. The identification of new markets is essential for firm renewal. However, cost control and productivity become the main concerns. Growth and a reasonable market share are maintained by the resulting product generations and profitability improvements. The owner is usually supported by or replaced by a professional manager or a management team, and professional management systems are added. Strategies, rules, regulations and procedures are standardised and formalised. Employees become specialised non-risk takers. Specialised functions are added. The stage is characterised by a decreasing growth of cash flow.

Table 6: The self-evaluation framework for the early stages of a service-based firm

Stage 1	At stage 1, the service-based start-up is focused on the development and delivery of services and building market identity to survive. Decision-making is owner-dependent, as owner-manager(s) lead a small group of employees. The structure is informal, simple and owner-centred. Formal decision-making systems and procedures are almost non-existent. New firms focus on attracting early customers, and the development and delivery of innovative services are everyone's job. Everyone is involved in everything in a small start-up. At this point, owner-manager(s) lack time for strategic planning. In terms of growth, the firm moves from challenges to meet cash demands to cash flow that breaks even with support from early customers.
Stage 2	At stage 2, as market acceptance leads a service-based firm to rapid growth and constant change, the primary focus is on growth management. The owner-manager(s) maintain control but delegate responsibilities to a small management team. The structure of the firm is formalised gradually through task specialisation. The firm moves rapidly from basic decision-making systems to scalable systems that are compatible with the growing firm. The firm delivers and scales services efficiently to meet increasing market demand as the number of sectors, activities and client types increases rapidly. From an employee perspective, hierarchy and decreased involvement coincide with fast-track career opportunities. Strategic planning is focused on maintaining continuous growth. In terms of growth, market acceptance leads to fast growth and positive cash flow; cash flow and/or debt is used to finance growth.

Stage 3	At stage 3, because of market saturation and increased competition, the focus of a service-based firm shifts to improving profitability and efficiency by formalising rules, procedures and financial controls. The original owner-manager(s) and the management team are often supported by professional executives. A formal structure with defined roles and responsibilities is introduced. Enterprise strategies, rules and policies become written and supported by extensive operational systems. The firm takes an organisational approach to improving employee efficiency and effectiveness. To avoid stagnation, fresh innovation methods are needed, as are new market knowledge and ideas to maintain the current market position, to renew the market position and/or to expand into new markets. Strategic management is both formalised and supported by financial resources. The growth of cash flow starts to decrease in a highly competitive and saturated market.
Stage 4	At stage 4, to gain new momentum, the service-based firms focuses on new service generation, business areas and/or locations and on the development of a uniform firm culture. Owner-manager(s) are often supported or replaced by professional leaders with corporate experience. A sophisticated organisation structure with formalised functions and processes is introduced. Strategies, rules and policies are developed, codified and communicated by analytical mechanisms. Innovative culture enables the implementation of diversified service-market strategies. Simultaneously, a uniform corporate image is maintained within diverse markets through professional marketing. Standardised career tracks and training/hiring are used to build the firm's approach and culture. Strategy development and implementation are routine at corporate headquarters. Growth momentum is regained, and cash flow growth accelerates.