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# **DEVELOPPING AND TESTING A TYPOLOGY OF GROWTH STRATEGIES OF ENTREPRENEURIAL IT SERVICE FIRMS**

Olivier Witmeur

Solvay Brussels School of Economics & Management, Université libre de Bruxelles,  
Belgium  
owitmeur@ulb.ac.be

Alain Fayolle

EM Lyon, France  
fayolle@em-lyon.com

## **ABSTRACT**

Starting from main concerns and gaps identified in literature on growth strategies, the research, based on Miller's seminal work on strategic configurations, elaborates and tests a typology of strategic configurations for young entrepreneurial IT services firms. The approach is longitudinal, qualitative and exploratory by nature. The proposed configuration typology is derived from the academic and professional literature in entrepreneurship. It is then compared with multiple and triangulated data collected in four Belgian firms, according to a rigorous data collection and analysis process. A matching exercise between the typology and the cases assesses the theoretical relevance of each configurational framework in order to explain the diversity of growth strategies and the way they evolve over time. The results open new perspectives and avenues for future research, including further work on the complementarities between the configurational and process approach.

## **1 INTRODUCTION**

Since the growth of entrepreneurial ventures is critical for job creation, but remains the exception rather than the rule, understanding the processes that drive it is an important issue for both academics and practitioners. Research on the growth of entrepreneurial ventures has proliferated over the last two decades. Currently available literature reviews reveal that researchers have adopted multiple theoretical approaches (O'Farrell & Hitchens, 1988; Davidsson, Achtenhagen & Naldi, 2005; Gilbert, McDougall & Audretsch, 2006) and suggest that at least five schools of thought have been used to explain the growth phenomenon. First, the 'traits approach' analyzed the characteristics, motivations and behavior of entrepreneurs to propose different kinds of profiles that can be associated with very different types of growth willingness and aptitudes (Ettinger, 1983; Davidsson, 1989; Gundry & Welsch, 2001 and Delmar & Wiklund, 2003). Second, the ecology of population proposes a more Darwinian view on growth and emphasizes the domination of the environment in the selection of survivors (Hannan & Freeman, 1977). It thereby reduces the role and impact of the entrepreneur in strategic decision-making. Third, the strategic management approach takes the opposite point of view. It identifies strategic behavior and strategic content, including entrepreneurial orientation (e.g. Lumkin & Dess, 1996) and entrepreneurial strategy (e.g. Ireland, Hitt & Sirmon, 2003), leading to competitive advantage (e.g. Miles & Snow, 1978; Porter, 1985) and superior performance in entrepreneurial businesses. Fourth, the resources-based view links growth with the availability of resources. It also focuses on the transformation of resources into dynamic capabilities that support effective performance of the firm (e.g. Brush, Greene & Hart, 2001 and Zahra, Sapienza & Davidsson, 2006). Fifth,

the lifecycle and stage-based models propose single evolution paths, typically divided into 3 to 5 stages of development. Here, the striking principle is that major dimensions of the entrepreneurial ventures evolve from stage to stage and that the successful resolution of problems at one stage sows the seed for future growth which, in turn, creates the next growth crisis (Churchill & Lewis, 1983; Kazanjian & Drazin, 1990; Hanks, Watson, Jansen & Chandler, 1993).

In these research works, most of the individual variables impacting growth have been investigated. Unfortunately, although it is improving, the work performed so far has generated conflicting results, lacked integration, paid insufficient attention to the connection with theory and should have been more longitudinal (Davidsson, Achtenhagen & Naldi, 2005; Davidsson, Delmar & Wiklund, 2006; Garnsey, Stam & Hefferman, 2006). Furthermore, the fact that, on the one hand, growth is a multidimensional and complex phenomenon and that, on the other hand, it can take very different forms on rather different time frames, has intensified the confusion and the need for multidimensional and integrative research. As a consequence, a further deficiency of current research on growth is its inability to explain the heterogeneity of growth patterns observed empirically (Delmar, Davidsson & Garter, 2003; Biga Diambeidou, Gailly & Verleysen, 2007). In other words, entrepreneurship scholars acknowledge that growth patterns of new ventures are not idiosyncratic and recognize that further research is needed to increase our understanding of its how and why.

To deal with the aforementioned concerns, Dess, Lumpkin & Covin (1997), Bantel (1998), Heirman & Clarysse (2004), Wiklund & Shepherd (2005) and Harms, Krauss & Schwartz (2009) advocate a configurational approach. This is attractive because it provides us with an integrated framework for strategy and organization theories (e.g. Miller, 1986; Snow, Miles & Miles, 2005) and offers both a static and dynamic side, i.e. the identification of configurations and the dynamic of configuration change.

The primary purpose of this paper is to propose a theoretical explanation for growth strategies of young entrepreneurial firms and the way these strategies change over time. Using an integrated and dynamic perspective, our research is designed to propose a conceptual framework for the growth strategies of young entrepreneurial ventures. From the literature, we elaborate a typology of strategic ideal types and then compare it with longitudinal case studies. Consequently, the objective of this article is to demonstrate that building a typology of strategic configurations may increase our understanding of growth phenomena and open new avenues for further research. In entrepreneurship research, little attention has been paid to the identification of post-start-up configurations and the few existing papers propose taxonomies, not typologies. This is unfortunate since, "Typologies are based on a unique form of theory building that is intuitively appealing and holds considerable promise for helping management researchers to understand complex, holistic phenomenon [...] (Doty & Glick, 1994, p.248)."

Because of the holistic nature of such exploratory research work, we have restricted our investigations to a specific and reduced area. We have decided to focus on Entrepreneurial IT Services Firms (EISF) with business to business activities because they represent an interesting population. Firstly, because they face three traditional growth options that are not mutually exclusive (Ansoff, 1965/1988; Roberts, 2003), i.e. getting more customers on the same market with the same provision of services (we call it deepening), extending to new territories (we call it internationalization) and/or developing new service offering (we call it diversification). Secondly, because this challenge is augmented by the question related to their possible evolution from a service to a software business model. As a matter of fact, adding a product offering to the initial service offering sounds like an attractive growth

option to many EISF (Kaye, 1998; Nambisan, 2001). Kayes (1998) highlighted that “In many situations, your clients will pay you to develop new technology for them. This is not only exciting and fun; the new technical capabilities you develop will lead to new business opportunities (p.275)”.

The structure of the article is the following. Based on the academic and professional literature, we elaborate, on a step by step basis, a typology of strategic configurations for EISF in section 2. The outcome consists in the detailed description (with 23 items) of seven ideal types, including three that are specific to EISF. In section 3, we introduce four retrospective longitudinal case studies that enable us to observe 15 strategic configurations (using the same 23 items). Section 4 is then devoted to the analysis of the results, i.e. mainly the comparison between the ideal types and the observed configurations, according to a systematic numerical coding technique that allows for the comparison of ideal types and configurations. In section 5, we discuss the results and underline the main limitations. Finally, in the conclusion, we present our contribution to the literature on growth and the main implications of our research.

## **2 TYPOLOGY OF GROWTH STRATEGIES**

In this section, we first of all review the literature on configuration and typology studies both in the fields of management and entrepreneurship (subsection 2.1). We then explain how we have built a typology of strategic configurations for EISF (subsection 2.2) and describe it with more details (subsection 2.3).

### **2.1 Configurations, Typologies and Entrepreneurship**

Configuration studies became popular during the late '70s with the prominent works of Mintzberg (1978) or Miller & Friesen (1984b), for example. The main objective was to isolate coherent, commonly occurring clusters of attributes related to strategy, organizational structure and environment, in order to understand firm performance. The guiding principle in this type of approach is the existence of a minimum level of *fit* or *coherence* between the attributes and to restrict the scope of analysis to a limited number of coherent *configurations*, also called *gestalts* or *archetypes* or *ideal-types*, rather than reviewing all possibilities (Miller, 1981; Meyer, Tsui & Hinings, 1993). From that point of view, the configuration approach differs from the traditional contingency approach. Although both focus on the fit between elements, contingency theory looks for one unidirectional and linear law to explain incremental changes, while configuration adopts a more holistic system view that is reciprocal and non linear (Meyer, Tsui & Hinings, 1993). Also, due to the coherence between the elements of a configuration, “[...] the presence of some attributes can lead to the reliable prediction of the others” (Miller & Mintzberg, 1983, p57). Another important principle of the configuration approach is that configurations are supposed to be stable over time and can only be modified during periods of dramatic changes, sometimes also called ‘revolutions’ or ‘second-order changes’ (Levy, 1986). This is only a logical application of the coherence principle that implies that change in one element automatically entails change in the others.

Research on configurations has been closely associated with the development of taxonomies and typologies (Ketchen, Thomas & Snow, 1993; Miller, 1996). More specifically, Ketchen, Thomas & Snow (1993), demonstrated that typologies explain performance better than taxonomies. Nevertheless, many so-called typologies have been criticized because they consist mainly in sloppy categorization analysis (Bacharach, 1989). Doty & Glick (1994)

suggested that this is partly because of semantic confusion between notions such as classification schemes, taxonomies and typologies. While the first two are pure classification systems, typologies refer to “conceptually derived interrelated sets of ideal types (p.232)”. Accordingly, typologies represent a valuable way to develop complex theories and, for the most part, these are middle-range theories. But this is valid only if researchers pay attention to four central concerns that must be addressed by any theoretical proposition: (1°) clear identification of the constructs; (2°) explanation of the relationship between the constructs; (3°) falsifiability and (4°) definition of the validity domain (Bacharach, 1989; Whetten, 1989; Doty & Glick, 1994).

Existing research work in entrepreneurship validates the relevance of the configurational approach. First of all, Miller (1983), Dess, Lumpkin & Covin (1997) and Wiklund & Shepherd (2005) have empirically confirmed that the configuration approach offers better explanations for performance outcomes than traditional one-variable-at-a-time and contingency approaches. Secondly, Vohora, Wright & Lockett (2003) and Garnsey, Stam & Hefferman (2006) have highlighted evidence of the existence of a limited number of development thresholds and crisis. Thirdly, there are important connections between research on lifecycle or staged model and configurations (Miller & Friesen, 1984b; Hanks, Watson, Jansen & Chandler, 1993). As Miller & Friesen (1984a) pointed out: “[...] there is something of a ‘gestalt’ or configural nature to the phases of the lifecycle (p.1176)”. However, entrepreneurship research has paid little attention to the identification of post-start-up configurations. Furthermore, the few existing papers (e.g. Bantel, 1998; Heirman & Clarysse, 2004) refer to empirically inducted taxonomies, not theory deduced typologies.

## **2.2 Development of a Typology of Strategic Configurations**

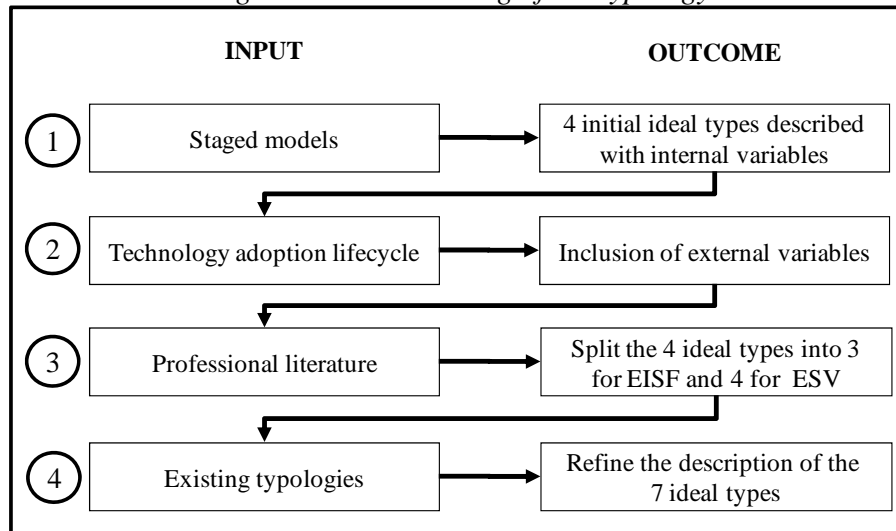
In this subsection, we propose to deduce from the literature ideal types of ‘strategic configurations’ associated with distinctive growth strategies. Each ideal type is described with the mono dimensional constructs frequently used in academic and professional literature about general and hi-tech entrepreneurship.

Over time, academics and practitioners have developed multiple contingency and/or configurational frameworks to analyze the entrepreneurial process (e.g. Sahlman, 1996; Chrisman, Bauerschmidt & Hofer, 1999; Timmons, 1999; Davidsson & Klofsten, 2003). In aggregate terms, these combine the dimensions adopted by the major research streams that focus on growth, i.e.: (1°) the entrepreneurs, (2°) the opportunity (or the activities), (3°) the organizational structure, (4°) the resources, (5°) the environment and (6°) the strategy. Also, a central logic is that the role of the entrepreneur is either to develop a strategy that creates and maintains the fit between these constructs or to change strategy when the fit is not reached. Thus, with regard to the explanation concerning the relations between the constructs, it is clear that, on the one hand, fit is the central concept, while on the other hand, the theoretical roots of the traits approach, lifecycle and staged models, strategic management, ecology of population and the resource-based view of the firm, as listed in the introduction of the paper, explain the relations between the constructs.

Building a typology of strategic configurations for EISF implies the combination of complementary perspectives that provide valuable insights into all the constructs that are necessary to fully describe each configuration. Furthermore, in order to understand a decision that is taken whether or not to adopt a service or software business model, requires us to focus not only on EISF, but also on entrepreneurial software ventures (ESV).

In this context, we have adopted a four-step method to develop our typology. It is summarized in Figure 1 and described with more details in the remainder of this subsection.

Figure 1 – The building of the typology



First of all, we have started the building of the typology with the description of individual stages of growth suggested in staged models specific to hi-tech ventures (e.g. Kazanjian & Drazin, 1990; Hanks, Watson, Jansen & Chandler, 1993). This choice is logical if we take into consideration the multiple shared characteristics and empirical results between generic stages of growth and configurations (e.g. Miller & Friesen, 1984a). As a matter of fact, with the notable exception of environmental variables that are often omitted in staged models, they both, firstly, use the same kind of constructs (i.e. the role of the entrepreneur, the main strategic focus, the resources mix and the organizational structure), secondly, presume the existence of a limited set of discrete states (called ‘stages’ or ‘configurations’) and, thirdly, highlight the importance of disruptive changes from one state to another. Hanks, Watson, Jansen & Chandler (1993) mentioned that “[...] we have chosen to define a life-cycle stage as a unique configuration of variables related to organization, context and structure (p.7)”. We have then started with four presumed successive ideal types described with the internal characteristics of the hi-tech ventures (i.e. the role of the entrepreneur, the nature of activities, the organizational structure and the resources at stake) at the ‘seed’, ‘start-up’, ‘early growth’ and ‘continued growth’ stages.

At the second step, we have introduced the core ideas of the technology adoption cycle (e.g. Rosen, Schroeder & Purinton, 1998; Moore, 1999). This is logical since most IT start-ups start with one single innovative service offering. Here, we have enriched the description of the configurations with insights related to market conditions and evolving customer profiles. An additional conceptual argument for this step is the rich literature that focuses on the fit between strategy and overall environmental conditions. For instance, at the empirical level and focusing on new software ventures, Zahra & Bogner (1999) highlighted the fact that environmental moderators impacted multiple dimensions of technological strategy such as rhythm of introduction of new products, intensity of product upgrade, level of R&D spending, use of external technology sources and the use of copyrights. Unfortunately, we have not found similar research work that has focused on EISF. However, at a theoretical level, Zammuto (1988) coupled the strategic ideal types proposed by Miles & Snow (1978) with an ecological perspective and stated that “it is possible to apply the logic of the ecological approach to better understand constraints on strategic choice (p.112)”. This second step has allowed us to introduce three environmental variables: the type of customers served by the firm, the pattern of condition changes and the competition intensity.

Thirdly, we have compared best practices identified in the practical literature on the management of, on the one hand, IT consulting and professional services firms (Kaye, 1998; Biswas & Twitchell, 2002) and, on the other hand, pure software firms (McHugh, 1999; Hoch, Roeding, Purkert & Lindner, 2000). The comparison between services and software practices highlights significant differences between EISF and ESV (Nambisan, 2001). These refer mainly (1°) to the lower impact of the environment for EISF, especially at early and later stages, (2°) to the fact that ESV need more managerial and financial resources during their early development, (3°) to the priority given to vertical organizational structures in EISF (i.e. linked with career path and project based organization), while ESV pay more attention to horizontal specialization (i.e. separation between development, marketing and support functions) and (4°) to the absence of R&D activities in EISF, while these are mission critical in the early stages of ESV. This comparison has also clarified the type of growth strategy adopted by EISF and ESV over time, i.e. earlier deepening and practice diversification strategy in EISF, earlier internationalization strategy in ESV. As a result, and taking into account the fact that the initial seed stage did not appear to be relevant for EISF, since they get revenues from the start, it was then possible to make a clear distinction between the two types of firms and propose seven configurations. Three presumed chronologically successive ideal types refer to EISF and are coded / named ‘S1 / the expert’, ‘S2 / the local services champion’ and ‘S3 / the diversified services firm’. Four presumed chronologically successive ideal types refer to ESV and are coded / named ‘P0 / the software lab’, ‘P1 / the software workshop’, ‘P2 / the software specialist’ and ‘P3 / the software reference’.

Fourthly, in order to refine the description of each ideal type and to clarify connections with established typologies, we have compared our seven types with the organizational ideal types taken from Mintzberg (1978), the strategic ideal types from Miles & Snow (1978), as refined by Zammuto (1988) and generic strategies derived from Roberts (2003 based on Ansoff, 1965/1988). Table 1 summarized a comparison of these typological research works. For the sake of clarity, it also includes a comparison with lifecycle models.

*Table 1 – Comparison of typologies*

	Lifecycle models	Mintzberg (1978)	Miles & Snow (1978) / Zammuto (1988)	Growth strategy adapted from Roberts (2003)
S1	Start-up	Simple structure	Defender or entrepreneur	Deepening or no growth
S2	Early growth	Between simple structure and professional bureaucracy	Defender or analyzer	Deepening
S3	Continued growth	Between professional bureaucracy and adhocracy	Analyzer	Geographic and/or offering diversification
P0	Seed	Simple structure	Prospector or entrepreneur	No growth
P1	Start-up	Simple structure	Prospector or entrepreneur	Deepening
P2	Early growth	Between simple structure and adhocracy	Prospector	Deepening + early geographic diversification
P3	Continued growth	Towards adhocracy	Prospector or analyzer	Geographic diversification and early offering diversification



### **2.3 The Proposed Typology**

When combined, the four steps provide a full description of the seven ideal types with a set of 23 items related to the entrepreneurial team, the activities of the firm, the resources mix, the organizational structure, the environment and the growth strategy. We have described each of them in a few lines here, while Table 2 describes them in greater detail and lists the typical variables associated with the 23 items. It is interesting to highlight that while the literature frequently suggests mixed service-software business models, there is no description of such hybrid situations. As a consequence, it is not included in the typology. However, mixed business models should be attractive at stages S1 and S2 when EISF consider diversification or are looking for differentiation (Kaye, 1998; Nambisian, 2001).

(S1) The ‘expert’ ideal type is a small service firm typically managed by one IT specialist with deep knowledge in a narrow practice. In fact, he focuses on the long term sustainability of his business. He possibly works with a few employees, typically less than 10, and does not follow any kind of growth strategy. As a consequence, competition has limited impact on the firm. In such firms, everything relates to the entrepreneur: his technical expertise (the entrepreneur is involved in all assignments) and his willingness to control operations with a basic informal and centralized organizational structure. Such expert firms are easily self financed through regular service assignments to customers looking for a high level of technological expertise.

(S2) The ‘local services champion’ ideal type is a more structured, medium sized service firm. It works mainly at a local level, where it is recognized as one of the few specialized players in their field. Such firms operate according to a simple vertical organization where middle managers start playing a role in service delivery that often involves junior consultants. This allows the entrepreneur to take care of and manage the professionalization of the firm and to initiate early formalized management processes. Decision making remains rather centralized. Such firms follow a deepening strategy on their local market. They are able to self finance their growth with the support of banks for their working capital requirement. The typical size of such firms is 30-50 people.

(S3) The ‘diversified services firm’ ideal type refers to a firm that is larger than the local champion firm because it encompasses multiple business units associated with practices diversification and/or internationalization (i.e. multiple local branches). Accordingly, its organizational structure is more complex and combines robust vertical (i.e. clear hierarchy between the consultants) and initial horizontal specialization. In this type of firm, the entrepreneur takes care of the general management of the firm and is no longer involved in front-end operations that are managed by senior managers. Whilst they are growing quickly in favorable market periods, diversified service firms may need the support of external investors. The typical size will be over 100 people. Such firms typically compete with large professional services firms on specialized practices.

(P0) The ‘software lab’ ideal type is a typical seed stage firm, focusing on product development with a very small team of highly qualified technical people. Beyond possible contacts with technology obsessed customers, it has virtually no sales activity and finances its significant R&D efforts with equity raised from angel investors or venture capitalists. The organization is purely informal and not structured. As such, this configuration is not sustainable over the long term.

(P1) The ‘software workshop’ ideal type is a small firm with limited local sales activities aimed at early adopter customers. Accordingly, it has a small dedicated direct sales force and starts by developing a horizontal organization. Nevertheless, operation remains fully under the control of the entrepreneur. Software workshop firms often operate below the break-even level and require additional external capital. When they do manage to break-even, they sometimes stabilize and remain small local firm with a size typically under 10 people.

(P2) The ‘software specialist’ ideal type is a medium sized firm with a growing sales force to address the needs of their first international customers and/or develop indirect distribution channels, most of the time with one single product offering of which intellectual property management becomes mission critical. Accordingly, its organization is less centralized and gets more formal with clear horizontal organizational lines, including specialized departments. Overall operations remain under the supervision of the entrepreneur. Since sales & marketing investments may be important in fast growing market conditions, such firm may raise additional venture capital. Typical size is 30-50 people.

(P3) The ‘software reference’ ideal type refers to a larger firm with diversified sales channels which, when possible, are mostly indirect. Its objective is to be a leading firm on one established maturing global market segment and to compete with international larger software firms on this segment. With international activities and initial product diversification, their operations are more complex. They require a more formalized management style and robust horizontal organization with dedicated senior managers in key positions. If not investing aggressively in geographical developments, such firm may be profitable. When this is not yet the case, they may raise additional capital. Going public may be an interesting option in order to facilitate the withdrawal of the initial investors and/or raise additional money.

Table 2 – Ideal types for EISF and ESV

Dimensions	Items	Typical variables	S1	S2	S3	P0	P1	P2	P3
			Expert service	Local service champion	Diversified service firm	Software Lab	Software workshop	Software specialist	Software reference
Entrepreneurial team	Importance of management experience	Educational and business background (strategy, marketing, finances, HR...), number of year of experience in management positions	Low	Low	Medium	Low	Medium	Medium	High
	Importance of technical experience	Educational and technical background, number of year of experience in technological position	High	Medium	Low	High	High	Medium	Low
	Importance of willingness to grow	Positive attitude towards growth, growth as one specific objective	None	Medium	Medium	Medium	High	High	High
Activities	Importance of R&D	Relative size of the team and/or budget dedicated to R&D	None	None	Low	High	High	Medium	Medium
	Importance of service delivery	Relative size of the team dedicated to service delivery	High	High	High	None	Low	Low	Medium
	Relevance of indirect sales	Relative size of the team and/or budget dedicated to indirect sales, number and types of partnerships, use of indirect marketing techniques	None	None	Low	None	Low	Medium	High
	Relevance of direct sales	Relative size of the team and/or budget dedicated to direct sales, use of direct marketing techniques	High	High	High	Low	Medium	Medium	Low
Resources mix	Relevance of self financing	Fully owned company, importance of bank financing, profitability	High	High	High	None	Low	Medium	Medium
	Relevance of external investor	Presence of business angels, venture capitalist, IPO	None	None	Medium	High	High	High	Medium
	Importance of middle management	Relative number of middle managers	None	Medium	High	None	Low	Medium	Medium
	Importance of senior management	Relative number of senior managers	Low	Medium	High	Low	Medium	High	High
	Importance of IP	Existence of patents, trademarks, copyrights, internal methodologies, non disclosure agreements...	None	None	Low	Medium	Medium	High	High
Organizational structure	Level of central decision making	Locus of control of the entrepreneur, type of decisions taken at senior and middle management levels (delegation)	High	High	Low	High	High	Medium	Low
	Level of formalization	Existence of formal processes (policies, budget...), corporate governance structure (Board of Directors, Executive Committee), type of management system	None	Medium	High	None	Low	Medium	Medium
	Importance of vertical specialization	Distinction between junior/senior/manager in each activity	Low	Medium	High	None	None	Low	Low
	Importance of horizontal specialization	Distinction between R&D, production, sales & marketing and back office functions	None	None	Low	Low	Medium	High	High
	Company size	Sales, headcount	Small	Medium	Larger	Very Small	Small	Medium	Larger
Environment	Type of customers	Typical profile of the customer in terms of technology adoption, stage of technology adoption	Early adopters	Early majority	Late majority	Innovators	Early adopters	Early majority	Late majority
	Pattern of conditions change	Duration of technology lifecycle, importance of switching costs, demand stability, size of growth rate of the industry	Medium	Medium	Slow	Fast	Fast	Medium	Medium
	Competition intensity	Number of competitors, aggressivity of the competition, industry concentration, barriers to entry, availability of substitute products	Low	Medium	High	Low	Medium	Medium	High
Growth strategy	Level of deepening	Focus on the local market with one single offering	High	High	Medium	High	High	Medium	Low
	Level of offering diversification	Number of distinctive business lines (number of practices or software offering)	None	Low	High	None	None	Low	Medium
	Level of internationalization	Number of offices abroad, relative number of people working out of the initial geographical location, relative weight of foreign sales	None	Low	Medium	None	Low	Medium	High

### **3 CASE STUDIES**

In this section, we introduce four case studies. We first expose our methodology (subsection 3.1) and then the empirical material (subsection 3.2).

#### **3.1 Methodology**

Four firms were selected from an initial shortlist of 10 Belgian EISF and ESV with business to business activities. For each of these firms, we had at least one introductory contact (at least one hour open-ended interview with the founder/manager about the evolution of his firm) and analyzed secondary data (i.e. annual report, press releases, etc.), in order to identify both major events and strategy changes. The final selection of the four cases was based on ‘purposeful sampling’ (Patton, 2002) according to an initial estimate of the number of observable configurations (i.e. configuration is the actual level of analysis in this research), the coexistence of both service and software business opportunities in order to analyze the tension between these two business models as described in the introduction of this paper, the availability of multiple sources of evidence and the overall heterogeneity of the development patterns. In this context, since our focus is on EISF, we have included three such firms inside the sample. Nevertheless, we have also included one ESV in the final case selection to test the falsifiability of the typology and have maximum variation inside the sample (Neergaard, 2007). The cases can then also be considered as ‘typical’ cases (Yin, 2003). The cases described the evolution of four companies. The first one is *All4it*, an EISF that specialized in data management. From 1997 to 2008, it has focused on services and decided to spin-off a software product development identified in 2007. The second company is *Callatay & Wouters*, an EISF that specialized in banking systems. From 1987 to 2007, the company gradually shifted its business model and eventually became an ESV with international business. The third company is *CODE*, an EISF that focused on human resources management systems. From 1994 to 2003, it tried to develop a software practice but went back to consulting before being sold to a competitor in 2006. The fourth company is *Mobile Token*, an ESV created in 2002 that was specialized in mobile internet solutions. It combined software development and service activities for a few years before deciding to focus solely on its software business.

Beyond initial data collection and preliminary interviews performed before the final case selection, the case study protocol follows the guidelines and recommendations from Paton (2002) and Yin (2003) and includes six distinct steps that allowed for a replication logic from case to case. First of all, we had two 60- to 120-minutes semi-structured interviews with (one of) the founder(s)/manager(s) of the company in order to recreate a chronological overview. People were not informed about the typology at the beginning of the process, but the second interviews included questions about each item used to describe the ideal types and generic processes. In the second stage, we organized an extensive collection of written corporate documents (e.g. financial reports, business plans and board minutes). In the third stage, we triangulated the data from interviews with the documents and, where possible, one additional interview with an external observer of the company (i.e. investor or independent director). Table 3 summarizes the data collected for each case.

Table 3 – Data sources

	All4it	CODE	Callatay & Wouters	Mobile Token
Interviews with entrepreneurs	1 with one founder 1 with one founder for validation	1 with two founders 1 with CFO 2 for validation (one with each of the founders)	2 with one founder 1 with the same founder for validation	1 with one founder 1 with one founder for validation
Interviews with external observers	1 independent director	1 banker	-	2 independent directors
Business plan	2007	1999 + 2001	1997	2002 + 2006
Financial statement and headcount details	Yes	Yes	Yes	Yes
Official annual report with management comments	Not available	2003-2005	2002-2007	Not available
Access to Board of Directors minutes	No	Yes	No	Yes
Number of industry research available	1	5	2	1
Additional sources	1 R&D grant application file	2 R&D grant application files	Multiple press releases	2 R&D grant application files

Fourthly, we reorganized the dataset into a time-ordered matrix (Miles & Huberman, 1994), including all items used in section 2 to describe ideal type and processes. Fifthly, using this matrix, we attempted to identify possible configurations. In the sixth stage, we carried out at least one respondent validation interview. This final step also proved to be an interesting way to perform intra-case analysis. It included an assessment of the configurations, a comparison between the configurations and the proposed ideal types with a systematic match/mismatch analysis of every dimension used in Table 2, coupled with a discussion about of the major fit and gaps. The results of this final step were then used for the cross cases analysis and typology validation described in section 4.

### 3.2 Summary of the four case studies

The cases are chronologically summarized in table 4, in which each line corresponds to one observed configuration (referenced with a two-position code in the first column). Overall, the four cases allow for the analysis and comparison of 15 configurations.

Table 4 – Summary of the case studies

Ref	Description
<b>All4it</b>	
A1	All4it was created in 1997 by Xavier Ghysens (XGH), who has a master's degree in Physics, when he was 25. From 1997 to 2002, the company was mainly a legal vehicle for his services as a free-lance consultant specialized in data quality and business intelligence (BI). By 2002, XGH started recruiting consultants who performed assignments in the BI field. He also broadened the activities to the pharmaceutical sector where data quality is critical. From 2002 to the end 2003, the company grew from 1 to 10 people with operations in Belgium and a limited number of projects in France. The organization was purely informal.

A2	By the beginning of 2004, XGH opened the capital of All4it to a senior partner who obtained 30% of the shares. The new partner headed sales and marketing and helped to extend the scope of activities to system outsourcing. From 2004 to 2006, the company grew from 10 to 70 people with significant development of operations in France. At that time, All4it had no clear organizational structure except practice groups for consultants, headed by one dedicated manager and one sales team. The fast growth was significantly supported by the rapid development of BI and the increasing demand from pharma. Up to 2006, All4it was profitable and fully self-financed without external investors or banks. However, because of the increase in working capital requirement, cash was tight. This tension generated conflicts between the shareholders. Furthermore, by the end of 2005, the pharma consultants started developing an electronic data capture software product, mainly aimed to distinguish the firm from their competitors. This investment was mainly financed with an R&D grant from the local government.
A3	2007 was a turning point for All4it. Increasing tensions between shareholders led to the departure of the senior partner and the need to reorganize the company. XGH bought back all of the shares and recruited one interim manager who set up a new organizational structure and introduced a set of internal processes. The BI and pharma consulting practices were reorganized in each country as independent business units with dedicated managers and a sales force. The back-office functions were shared inside the company. All key people in the management bought shares of the company. In 2007, All4it grew to 100 employees and was financially supported by a bank. All4IT plans to recruit an HR manager and a CFO in 2008.
F1	Also, by the end of 2007, All4it had decided to spin-off the software project into a separate company named Flexcipio. All4it was the main shareholder of the spin-off and decided to finance it through venture capital investors. Two key people received shares in the new venture, while XGH continued managing the project. Flexcipio planned to be able to break-even by 2009, with sales organized through distributors.
<b>Callatay &amp; Wouters (C-W)</b>	
W1	C-W was created in 1983 by Didier de Callatay (DDC) and Godefroid de Wouters (GDW), two engineers with up to 5 years business experience. The company was an IT service provider that focused on banks. From 1983 to 1987, the company had no formal organization and grew from 2 to 10 people through operations in Belgium.
W2	By 1988, C-W adopted a more structured organization with the arrival of new project managers. Over 3 years, the company moved from 10 to 35 people with operations centered on service delivery to Belgian banks. One important project in 1989 included the development of management software that appeared to answer the needs of multiple customers. Software development efforts were financed by customers.
W3	By 1991, C-W opened one branch in Luxembourg. It also created its own pure R&D team by the beginning of 1993. From 1993 to 1995, multiple projects allowed C-W to refine its software offering so that, by 1995, the company was in position to market its first software known as Thaler. From 1995 to 1997, C-W continued growing its consulting practice and managed to close repetitive sales on its own software solution thanks to major marketing expenses. C-W grew to 85 people by the end of 1997.

W4	In 1998, venture capitalists invested in C-W to further extend its international operations. From 1998 to 2006, the company opened branches in multiple countries, continued increasing its investment in R&D, extended its software offering and negotiated partnerships with international consultants who were able to install C-W software solutions. As a result of this strategy, the company grew to 400 people in seven countries and managed to have 30% of software revenues. In the meantime, by 2000, GDW decided to stop his day-to-day involvement in the management of the company to focus on strategy.
W5	By 2007, DDC resigned as CEO and appointed his successor from amongst the existing management team. Also in 2007, C-W managed to close a strategic partnership with SAP to further support its international growth. DDC and GDW kept working at C-W board level in order to refine strategy and support business development. By the middle of 2008, C-W had 520 employees and was active in 15 countries.
<b>CONSULTING &amp; DEVELOPMENT (CODE)</b>	
C1	CODE was incorporated in 1997 by four computer engineers with brief consultant experience as employees and a minimal initial capital. CODE initially focused on delivering services associated to the human resources module of SAP (SAP-HR), a leading ERP product. Nevertheless, the purpose of CODE was not only to deliver services, but also to capitalize on identified market needs to develop add-on software solutions to complement SAP-HR. From 1997 to 1999, the provision of services was a cash-cow activity. Since the ERP market was hot at that time, CODE grew from 4 to 16 people (100% growth every year) and generated enough cash to cover the costs of the R&D (mostly included in service projects) and marketing of its first software products, while closing with a small profit. While CODE closed its first sales in France, Spain, Switzerland, UK and USA by 1999, the activities were based in Belgium with no formal structure. At that time, the only financing issue was an increase in working capital requirement, but this was covered by the banks.
C2	By 2000, CODE opened branches with local sales & consulting teams in France and U.S.A. A CFO joined and became a fifth partner. CODE adopted a formal structure and appointed one founding member as CEO. CODE grew again 100% up to 32 people and was still able to break-even. Sales included 70% from services and 30% from software licenses. By 2001, CODE increased its investment in R&D and opened one branch in Spain. By the end of 2001, CODE had 60 people. Each local team had dedicated management, sales teams and consulting staff. There was also one central R&D team and one corporate management team. Sales grew again 100% with licenses accounting for 40% of it. Banks continued to cover every increase in working capital requirement and local research grants financed most of the development expenditure. By 2002, ERP market conditions changed significantly. Sales stagnated and licenses sales dramatically decreased. Since the company continued investing in R&D, it showed significant losses that put CODE at high risk. The financial crisis generated troubles inside CODE and the banks threatened to withdraw their support due to the credit squeeze.

C3	<p>By 2003 and 2004, sales had stabilized with more and more services sales and decreasing licenses sales. The headcount was reduced by 20% through cut backs to the R&amp;D and administration team. In this way, CODE was able to reduce its losses, but the financial position remained tricky. By the end of 2004, in order to reduce costs and risks in a more significant way, CODE decided to appoint a new CEO. The initial CEO agreed to leave and was replaced by another founder who refocused CODE on the services business and on the European markets. By 2005 and 2006, CODE was successful with its service business without extending its geographical scope. Sales and headcount grew by about 15% up to 70 employees and the company was back in the black. The software activities remained marginal, i.e. mainly limited to small opportunistic licenses sales and maintenance tasks. By 2007, CODE was sold to its major local competitor.</p>
<p><b>Mobile Token (MT)</b></p>	
M1	<p>MT was created in 2002 by Lionel Anciaux (LAN), a computer engineer with nine years business experience, and M-Invest, a Belgian venture capital fund specialized in mobile internet services. LAN was also initially associated with one minority part-time partner who resigned by the middle of 2003. The initial plan was to develop applications dedicated to banks. However, MT quickly changed its plan and focused on field marketing. In 2002-03, the company mainly performed R&amp;D and pre-sales activities with two employees.</p>
M2	<p>From 2003 to 2006, MT grew from 3 to 16 people with 13 developers, 2 sales staff and LAN. It also obtained a local R&amp;D grant to support the development of its field marketing product. At the same time, in order to keep cash under control, the company proposed to the majority of its initial customers a project-based collaboration with significantly customized work (i.e. services offering). The organization was informal with most of the IT profiles performing both R&amp;D and consulting. By 2006, M-invest got into trouble and proposed to LAN to buy back their shares at a significant discount. LAN accepted and offered two key-people inside the company the possibility of buying part of the shares. Together, they realized that MT needed more cash to further develop its software offering and managed to get support from another investor early in 2007. In the meantime, MT was dealing with an increasing number of projects, each of them with quite different requirements. Because of this diversity, MT found it difficult to deliver and faced internal organizational issues. However, a positive learning from this experience was to identify another product opportunity for companies working with large numbers of off-site technicians, a much larger market than the initial field marketing sector. By the end of 2007, MT had 20 people.</p>
M3	<p>By the end of 2007, MT managed to resolve its organizational problems and decided to refocus its R&amp;D effort on the field technicians business. The company recruited a marketing manager to develop an aggressive plan in order to market the new product through an international network of resellers. MT also decided to continue selling its field marketing solution on a local basis with a limited internal sales force and considered this activity as a cash-cow. By the beginning of 2008, MT was reorganized to support this mix of activities.</p>



#### 4 RESULTS AND ANALYSIS

In this section, we compare the theoretically deduced ideal types (Table 2) and the observed configurations (Table 4).

To do so, we have developed a systematic coding and matching process. First, all ideal types and configurations are coded with the same technique and then become comparable. Then, we compare ideal types with each other and do the same with configuration. Finally, we compare ideal types with configurations. This process is explained in greater detail in the remainder of this subsection.

In order to create comparable datasets, all ideal types and configurations were numerically coded according to a 4-levels scale summarized in table 5.

Table 5 - Scoring gridline

Score	Importance/ relevance/level of	Pattern	Type of customers	Size
0	None		Innovators	Very small
1	Low	Slow	Early adopters	Small
2	Medium	Medium	Early majority	Medium
3	High	Fast	Late majority	Larger

Table 6 presents the outcome of this exercise according to the 7 ideal types and the 15 configurations. It also includes the duration of each observed configuration. We would like to highlight here that this coding technique is not an attempt to quantify a qualitative dataset. In our view, it is only a way to organize and generalize a rigorous comparison between ideal types and configurations or, in other words, a way to organize ‘cross case displays’ (Miles & Huberman, 1994).

Table 6 – Codification of the ideal types and observed configurations

		Ideal types						Observed configurations															
		S1	S2	S3	P0	P1	P2	P3	A1	A2	A3	C1	C2	C3	F1	M1	M2	M3	W1	W2	W3	W4	W5
<b>Entrepreneurial team</b>	Importance of management experience	1	1	2	1	2	2	3	0	1	2	1	2	3	2	1	1	2	1	2	3	3	3
	Importance of technical experience	3	2	1	3	3	2	1	2	2	2	3	2	1	2	2	2	2	3	3	3	2	1
	Importance of willingness to grow	0	2	2	2	3	3	3	1	3	3	3	3	2	3	3	2	3	2	2	3	3	3
<b>Activities</b>	Importance of R&D	0	0	1	3	3	2	2	0	0	0	2	3	1	3	2	2	2	0	0	2	3	3
	Importance of service delivery	3	3	3	0	1	1	2	3	3	3	3	3	3	1	1	3	1	2	3	3	3	2
	Relevance of indirect sales	0	0	1	0	1	2	3	1	1	1	0	2	1	1	0	1	2	0	0	0	1	2
	Relevance of direct sales	3	3	3	1	2	2	1	2	2	3	3	2	3	2	2	3	2	2	2	3	3	2
<b>Resources mix</b>	Relevance of self financing	3	3	3	0	1	2	2	3	2	3	3	2	3	0	0	2	1	3	3	1	2	3
	Relevance of external investor	0	0	2	3	3	3	2	0	0	1	0	2	0	3	3	1	3	0	0	3	2	1
	Importance of middle management	0	2	3	0	1	2	2	0	1	2	0	2	3	0	1	1	2	0	0	1	2	3
	Importance of senior management	1	2	3	1	2	3	3	0	2	3	1	3	2	2	1	2	3	1	2	2	3	3
	Importance of IP	0	0	1	2	2	3	3	0	0	1	2	2	1	2	2	1	2	0	0	2	3	3
<b>Organizational structure</b>	Level of central decision making	3	3	1	3	3	2	1	3	3	2	3	2	2	3	3	3	2	3	3	3	2	2
	Level of formalization	0	2	3	0	1	2	2	0	1	2	0	2	3	1	1	1	2	0	1	2	2	3
	Importance of vertical specialization	1	2	3	0	0	1	1	0	1	2	1	2	3	0	0	1	1	0	1	3	2	2
	Importance of horizontal specialization	0	0	1	1	2	3	3	0	0	1	1	2	1	2	1	0	2	0	0	1	2	3
	Company size	1	2	3	0	1	2	3	1	2	3	1	3	3	1	0	1	2	0	1	2	3	3
<b>Environment</b>	Type of customers	1	2	3	0	1	2	3	1	2	3	1	1	2	0	0	1	1	2	2	1	2	3
	Pattern of conditions change	2	2	1	3	3	2	2	3	2	1	2	3	1	2	3	3	2	2	2	3	3	2
	Competition intensity	1	2	3	1	2	2	3	1	2	3	2	2	3	1	1	2	2	1	2	2	3	2
<b>Growth strategy</b>	Level of deepening	3	3	2	3	3	2	1	1	2	2	2	1	3	2	2	2	1	2	3	2	2	1
	Level of offering diversification	0	1	3	0	0	1	2	0	1	2	2	3	1	0	0	1	2	0	1	2	2	1
	Level of internationalisation	0	1	2	0	1	2	3	0	1	2	1	3	2	0	0	0	1	0	0	1	2	3
<b>Duration (years)</b>								7	3	?	3	3	4	?	2	4	?	5	4	6	10	?	

The codified<sup>1</sup> dataset made it possible to perform systematic matching measurements through the calculation of the absolute difference between two items (e.g. if one item scores 1 in one configuration and 3 in another, the result of the matching is 2, i.e. the absolute value of the difference between 1 and 3). The comparisons between ideal types and configuration were then organized according to a 3-step process.

First of all, we have compared the theoretically deduced ideal types with each other in order to measure to what extent they really differ. This was also a way of checking if our coding technique fitted with the disruptive change assumption associated with the configurational approach and an opportunity to establish benchmarks for the next matching exercises. Table 7 presents the result of the calculation.

*Table 7 – Differences from one ideal type to another*

	From one ideal type to another												S1- S3	P0- P2	P0- P3
	P0- P1	P1- P2	P2- P3	S1- S2	S2- S3	P0- S1	P1- S1	P1- S2	P2- S2	P2- S3	P3- S3				
Management experience	1	0	1	0	1	0	1	1	1	0	1	1	1	2	
Technical experience	0	1	1	1	1	0	0	1	0	1	0	2	1	2	
Willingness to grow	1	0	0	2	0	2	3	1	1	1	1	2	1	1	
R&D	0	1	0	0	1	3	3	3	2	1	1	1	1	1	
Service delivery	1	0	1	0	0	3	2	2	2	2	1	0	1	2	
Indirect sales	1	1	1	0	1	0	1	1	2	1	2	1	2	3	
Direct sales	1	0	1	0	0	2	1	1	1	1	2	0	1	0	
Self financing	1	1	0	0	0	3	2	2	1	1	1	0	2	2	
External investor	0	0	1	0	2	3	3	3	3	1	0	2	0	1	
Middle management	1	1	0	2	1	0	1	1	0	1	1	3	2	2	
Senior management	1	1	0	1	1	0	1	0	1	0	0	2	2	2	
IP	0	1	0	0	1	2	2	2	3	2	2	1	1	1	
Central decision making	0	1	1	0	2	0	0	0	1	1	0	2	1	2	
Formalization	1	1	0	2	1	0	1	1	0	1	1	3	2	2	
Vertical specialization	0	1	0	1	1	1	1	2	1	2	2	2	1	1	
Horizontal specialization	1	1	0	0	1	1	2	2	3	2	2	1	2	2	
Company size	1	1	1	1	1	1	0	1	0	1	0	2	2	3	
Type of customers	1	1	1	1	1	1	1	1	1	1	0	2	2	3	
Conditions change	0	1	0	0	1	1	1	1	0	1	1	1	1	1	
Competition intensity	1	0	1	1	1	0	1	0	0	1	0	2	1	2	
Deepening	0	1	1	0	1	0	0	0	1	0	1	1	1	2	
Offering diversification	0	1	1	1	2	0	0	1	0	2	1	3	1	2	
Internationalisation	1	1	1	1	1	0	1	0	1	0	1	2	2	3	
<b>TOTAL</b>	<b>14</b>	<b>17</b>	<b>13</b>	<b>14</b>	<b>22</b>	<b>23</b>	<b>28</b>	<b>27</b>	<b>25</b>	<b>24</b>	<b>21</b>	<b>36</b>	<b>31</b>	<b>42</b>	
Average	16,0					24,7						36,3			

Table 7 highlights the fact that ideal types couples in the presumed chronological sequence (e.g. P0-P1, P1-P2, S1-S2) significantly differ, i.e. there are differences in more than 50% of the 23 items used to describe the ideal types. This result fits with the idea that moves from one ideal type to another involve changes in every major dimension and must then be analyzed as ‘second order’ changes (Levy, 1986). Another interesting fact is that the differences increase when we compare ideal types related to different activity orientation (e.g. P1-S1, P2-S2). This is in line with the idea that product and service configurations, even when they relate to presumed equivalent maturity/size stages, are very different from each other. Thus, a unique lifecycle approach as suggested by traditional lifecycle or staged

<sup>1</sup> The coding is inevitably partly arbitrary, but we have performed sensibility analysis tests that reveal that a modest bias does not change any of the conclusions.

models, is not sufficiently refined to deal with the heterogeneity of these business models and associated growth strategies. An additional insight comes from the fact that all lines in Table 7 contain non-zero values. This validates the choice of the 23 items, even if the items associated with the entrepreneurs and the activities vary less than the others. Finally, the differences between ideal types also increase when we compare presumed chronological distant stages inside one homogeneous activity orientation (e.g. S1-S3, P0-P3). This suggests that jumping/missing one stage in the presumed sequence requires more changes and will then be more difficult to manage.

The second step was to compare the successive configurations adopted by each firm. Table 8 presents the result of this calculation that reveals that successive configurations also significantly differ from each other (e.g. A1-A2, A2-A3, C1-C2) and that this occurs with the same magnitude as change from ideal type to ideal type in the first part of table 7. It is also important to observe that no line includes only zero-values. This offers strong support for the configurational approaches (including that which states that reaching coherence implies changes at every level) and the associated second-order change approach. Indeed, this also assesses the relevance of our selection of items to describe configurations. As a matter of fact, both theoretical ideal types and empirical configurations can be discriminately described with the same set of items.

*Table 8 – Differences between successive configurations*

	From one configuration to another									
	A1- A2	A2- A3	C1- C2	C2- C3	M1- M2	M2- M3	W1- W2	W2- W3	W3- W4	W4- W5
	Management experience	1	1	1	1	0	1	1	1	0
Technical experience	0	0	1	1	0	0	0	0	1	1
Willingness to grow	2	0	0	1	1	1	0	1	0	0
R&D	0	0	1	2	0	0	0	2	1	0
Service delivery	0	0	0	0	2	2	1	0	0	1
Indirect sales	0	0	2	1	1	1	0	0	1	1
Direct sales	0	1	1	1	1	1	0	1	0	1
Self financing	1	1	1	1	2	1	0	2	1	1
External investor	0	1	2	2	2	2	0	3	1	1
Middle management	1	1	2	1	0	1	0	1	1	1
Senior management	2	1	2	1	1	1	1	0	1	0
IP	0	1	0	1	1	1	0	2	1	0
Central decision making	0	1	1	0	0	1	0	0	1	0
Formalization	1	1	2	1	0	1	1	1	0	1
Vertical specialization	1	1	1	1	1	0	1	2	1	0
Horizontal specialization	0	1	1	1	1	2	0	1	1	1
Company size	1	1	2	0	1	1	1	1	1	0
Type of customers	1	1	0	1	1	0	0	1	1	1
Conditions change	1	1	1	2	0	1	0	1	0	1
Competition intensity	1	1	0	1	1	0	1	0	1	1
Deepening	1	0	1	2	0	1	1	1	0	1
Offering diversification	1	1	1	2	1	1	1	1	0	1
Internationalisation	1	1	2	1	0	1	0	1	1	1
<b>TOTAL</b>	<b>16</b>	<b>17</b>	<b>25</b>	<b>25</b>	<b>17</b>	<b>21</b>	<b>9</b>	<b>23</b>	<b>15</b>	<b>15</b>
Average	18,3									

The third step is, of course, the comparison between the 15 configurations and the 7 ideal types. Table 9 summarizes this calculation (only the total differences are shown).

*Table 9 – Difference between ideal types (rows) and configuration (columns)*

	A1	A2	A3	C1	C2	C3	F1	M1	M2	M3	W1	W2	W3	W4	W5
<b>P0</b>	25	31	42	22	35	42	12	8	23	28	19	26	25	36	43
<b>P1</b>	27	21	30	20	21	32	8	12	17	14	25	22	15	22	29
<b>P2</b>	36	20	19	25	14	25	19	23	22	7	32	27	20	13	14
<b>P3</b>	43	29	20	32	15	26	32	36	31	16	41	36	27	14	11
<b>S1</b>	10	16	29	13	38	29	27	25	16	35	8	9	28	37	42
<b>S2</b>	20	8	15	17	26	15	31	29	14	25	16	9	20	23	28
<b>S3</b>	38	26	9	29	20	9	37	39	26	25	36	29	24	17	20

In order to highlight matches and patterns in configuration changes (or trajectories), we have decided to stylize each result. In order to do so we have marked the differences that were under 9 (i.e. the rounded half of the average difference between two ideal types in the first part of table 6) with \*\*\* (strong match), those that were between 9 and 12 with \*\* (medium match) and those between 13 and 16 (i.e. the rounded average difference between two ideal types in the first part of table 6) with \* (low match). All other differences (no match) are not displayed. Table 10 presents the results.

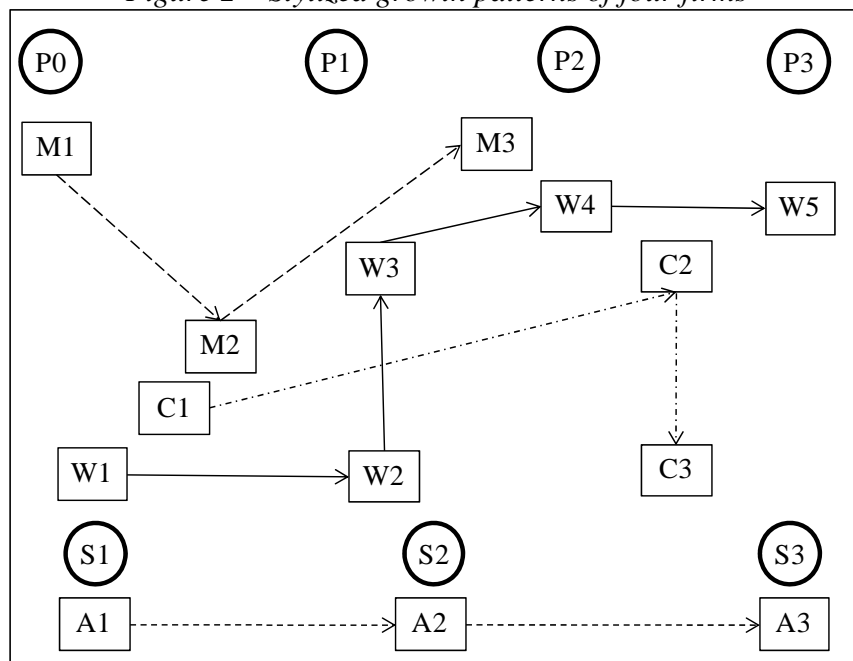
*Table 10 – Identifying matching and change patterns*

	A1	A2	A3	C1	C2	C3	F1	M1	M2	M3	W1	W2	W3	W4	W5
<b>P0</b>							**	***							
<b>P1</b>							***	**		*			*		
<b>P2</b>					*					***				*	*
<b>P3</b>					*					*				*	**
<b>S1</b>	**	*		*					*		***	**			
<b>S2</b>		***	*			*			*		*	**			
<b>S3</b>			**			**									

Table 10 shows 4 strong matches (A2, M1, M3, and W1), 6 average matches (A1, A3, C3, F1, W2, and W5) and 5 low matches (C1, C2, M2, W3, and W4). These observations give rise to five comments. Firstly, all observed configurations match with one ideal type. This confirms that a typological approach to growth strategy is possible (i.e. strategy changes are not idiosyncratic) and that the proposed typology makes sense since it fits with actual configurations. In other words, the proposed ideal types seem to be relevant even though a further quantitative approach is necessary to ensure that there are no additional ideal types that we may have missed. Secondly, most of the successive matches for each firm correspond with a presumed chronological sequence, i.e. a typical service pattern with S1-S2-S3 or a typical product pattern with P0-P1-P2-P3. This is very clear in the evolution of All4it that follows pure service pattern, in the beginning of the evolution of Callatay & Wouters that also follows a service pattern and in its later evolution that fits with a product pattern. Thirdly, a very interesting point is that the ‘low match’ cases correspond with instances where firms were changing from service- to product-pattern (C1, C2, W3 and W4) or the other way around (M2). This suggests that a move from one pattern to another requires going through some kind of hybrid configurations. Unfortunately, since these hybrid configurations do not share regularities, it is not possible to describe them in greater detail at this stage of the research. Nevertheless, the fact that the three companies adopted the next configuration in line with those of the typology suggests that hybrid configurations are of a temporary nature. Fourthly, the fact that CODE failed in its attempts to move from a service to pure product

business model and that Mobile Token went back to its product business model, confirms the idea that changing business model is a complicated endeavor due to the need for very significant changes at multiple levels. This can be seen in table 8 where the total difference of the moves C1-C2, C2-C3, M2-M3 and W2-W3 are above the average. This suggests some kind of ‘heredity effect’ that makes it very difficult for business model changes to succeed. A more detailed analysis of table 8 reveals that major differences frequently occurred at the resources level. This refers to one of the core ideas of the resource based view of the firm that states that companies differ because of variation in their resources endowment that is at the origin of its competitive advantage. It is then possible to propose that the failed transitions are associated with significant changes in resources that deeply modify the very nature of the company and put it in a rather difficult situation. In other words, this suggests that these companies had internal difficulties managing so many changes and preferred to return to what they had initially mastered. Fifthly, the four companies may well have adopted rather clear trajectories, i.e. pure service pattern for All4it, aborted transition from service to product for CODE, aborted transition from product to service for Mobile Token and successful transition from service to product for Callatay & Wouters. Figure 2 stylized these evolutions (ideal types are designated by circles, actual configurations by boxes and the distance between circle and boxes refer to the matching score in table 9).

Figure 2 – Stylized growth patterns of four firms



Taken together, the findings in this subsection support the idea that configurations adopted by EISF clearly differ from those of ESV. They also confirm the relevance of the configuration typology proposed in Table 2 that enables us to predict how the elements evolve when firms change their growth strategies.

## 5 DISCUSSION

In the light of our research methodology and results, this section develops a discussion about the relevance of our configuration approach (subsection 5.1), the theoretical quality of the proposed typology (subsection 5.2), the dynamic of configuration changes (subsection 5.3) and the limitations of the research (subsection 5.4).

## **5.1 Relevance of the Configuration Approach**

Miller (1996) deplored that “what is often missing in configuration literature is the search for configuration itself (p. 505)”. We believe this paper echoes his call and provides proponents of the configuration approach with additional arguments. As a matter of fact, from a theoretical point of view, this research is a validation of the configuration approach in entrepreneurial settings, at least when dealing with mid- or long-term issues (see section 5.3. about limitations). Our argument is threefold and follows the most important features that have been highlighted by configuration theorists. First of all, we are able to derive distinctive ideal types from the literature and to match them with observed configurations. This confirms that “[...] there are ties that unite strategy and structure; that given a particular strategy there are only a limited number of suitable structure and vice versa (Miller, 1986, p.234)”. Secondly, the observed configurations tend to be stable over time. Indeed, their durations vary from 2 to 10 years (see Table 6) with an average of 4.6 years (the calculation does not include the configurations that were still observable at the end of the study period). Thirdly, observed changes in configuration involved second-order type of changes, i.e. changes to many (if not all) of the dimensions used to describe it. The combination of these two last comments clearly points to the relentless debate between proponents of configuration versus the contingency approach and suggests that the first one is more relevant to study the strategies adopted by entrepreneurial ventures, at least in the case of long term changes.

## **5.2 Is the Proposed Typology a Theoretical Contribution?**

Since this article is about proposing a typology, we believe it is useful to discuss to what extent the proposed typology matches or does not match the criteria of a middle range theoretical contribution as introduced earlier in this paper. First of all, regarding the identification of the constructs, we believe that both the ideal types and the variables used to describe them are clearly articulated and connected with existing research. Of course, descriptions could have been refined, but we consider that this is not the main purpose of this paper. Secondly, with regard to the explanation of the relationship between the constructs, we again rely on existing research and, of course, on the concept of fit. Fit is quite clearly associated here with a *gestalts* logic and is “criterion-free and minimally precise (Venkatraman, 1989, p.432)”. We recognize that it is possible to further develop this argument, but this goes beyond the objectives of this exploratory research. Thirdly, with regard to falsifiability, our sampling strategy was important. Indeed, the necessity to check falsifiability was the very motivation for the inclusion of the Mobile Token case (i.e. an ESV) that did not adopt the configurations that were expected for an EISF. This case clearly confirms that our typology is falsifiable. Fourthly, the definition of the validity domain needs further explanations since it has not been addressed so far. Basically, in our view, the validity domain of the typology is associated with the entrepreneurial nature of the business. Of course, this raises a major definition issue that points to endless debates between entrepreneurship scholars. We will not engage in this debate, but will only mention that we rely on the definition suggested by Bruyat & Julien (2001) and Fayolle (2007) that is based on a constant dialogic between the entrepreneurs and the characteristics of their projects. Taking into consideration the exploratory dimension of this paper, we believe that the proposed typology is valid since it meets the main characteristics of theoretical contribution, even though there are avenues open for further refinements.

### **5.3 Analyzing Configuration Changes**

When it comes to analyze changes, Van de Ven & Engleman (2004) recommend a process or event-driven approach. Indeed, it represents a relevant framework to understand change in general and configuration change in particular. As a matter of fact, configuration change is one type of event that can be analyzed as a complex multi-motor process. Furthermore, the possibility to link the major research streams that focus on growth with process-types, adds to the complementarities with the configuration approach (Van de Ven & Poole, 1995 and Witmeur, 2007).

Miller (1987) proposes that configuration adoption is driven by four successive 'imperatives', i.e. "those of environment (including technology), organization structure, leadership and strategy (p.686)". These imperatives can be compared with the four types of 'process theories' or 'motors' to analyze organizational change suggested by Van de Ven & Poole (1995), i.e. respectively evolution, lifecycle, dialectic, and teleology. However, available research on the links between configuration adoption and processes is very limited. Taking this into consideration, we do not believe it is possible, at this stage, to propose generic growth patterns (i.e. move from one configuration to another) associated with the relative importance of multiple generic processes. Nevertheless, the aforementioned suggestions and the literature mentioned earlier in this paper enable us to suggest five processes that may be driving configuration changes. First of all, the traits approach refers to a dialectical process related to the willingness to grow or stay stable. Secondly and thirdly, the ecology of population and the technology adoption cycle refer to two evolutionary processes related to, on the one hand, 'market acceptance' and, on the other, 'investor acceptance' (Heirman & Clarysse, 2005). Fourthly, organizational changes and the need for professionalization refer to a staged organizational structuring process. Finally, and last but not least, the strategic management perspective and the resource-based view refer to a teleological process in which, in which, first of all resources acquisition and transformation (Lichtenstein & Brush, 2001) and, secondly, comparison between expected and actual performance (Gersick, 1994), play a central role.

A closer analysis of the case suggests four propositions. First of all, willingness to grow is more often associated with moves towards product configurations. Secondly, 'market acceptance' drives the adoption of service configurations from the beginning of the company, while 'investor acceptance' drives adoption towards early product configuration. This is logical since the starting process of a product venture frequently includes a prototyping stage before reaching the market. Thirdly, organizational structuring does not appear to be relevant at the beginning for firms adopting service and product configurations, but increase its influence at later stages. Fourthly, strategic planning does not appear to be relevant at the beginning for firms adopting service configurations, but increase its influence at later stages. It seems to be more constant and important in product configurations.

Overall, willingness to grow and 'market acceptance' seem to be the most important processes. Indeed, organization structuring and strategic planning seem to follow them, while 'investor acceptance' seems to be only important when products are not yet ready for market entry or when growth (linked to strategic intent) requires more resources than those generated by operations.

#### **5.4 Limitations of the Research**

Because of its exploratory and cases-based nature, this research suffers from clear limitations. First of all, there is no definitive best research practice to develop typologies (Miller, 1996). The way we have developed ours (i.e. the steps, the selection of items, their rating and the coding of the dataset) is of course debatable since it is directly subject to the interpretation of the researcher. Secondly, despite the cautious case protocol, we have not been able to completely avoid classical issues associated with case studies such as reinterpretation, partial remembering, and limited existence of external or written evidences and, once again, the personal biases of the researcher. Thirdly, and along the same lines, while the validity of qualitative research rests on the concept of *theoretical saturation*, we cannot definitively claim for it with 4 cases and 15 configurations. Fourthly, because retroactive research over multiple years is not sufficiently refined to detect small incremental changes, we may have overlooked small adaptive decisions and events. This means that our findings are relevant to test the existence of second-order changes, but cannot be used to refute the importance of adaptive or first-order changes. In other words, while configuration appears to be stable on a mid-term horizon, our research does not eliminate the possibilities of smaller adaptive and/or incremental change over shorter-term periods. Fifthly, this research does not even try to crack the code of any of the black boxes associated with problems such as the way business people perceived their environment, analyze fit or coherence between elements and evaluate performance. Sixthly, the selected cases are only about internal growth strategy. As a consequence, merger and acquisitions have not been analyzed. Finally, we paid no attention to growth measurement issues.

### **6 CONCLUSION**

The primary purpose of this paper was to focus on the building of a theoretical explanation for growth strategies of young entrepreneurial firms and the way these strategies change over time. The typology that we have developed, and its matching with case studies, reinforces the idea that a configurational approach is relevant in order to analyze growth strategy adoption in entrepreneurial settings. An additional contribution is the insight that a set of predefined processes may help to provide a better understanding of configuration changes.

As a matter of fact, at a theoretical level, ideal types are possible to define while, at an empirical level, configurations and changing importance of various processes were isolated. One of the contributions of this paper is to propose a systematic approach to compare them or, with other words, to test the typology. The fact that the observed configurations were quite similar to hypothesized ideal-types confirms that the approach “makes it possible for us to order our world of organizations in a rich and holistic way (Miller, 1986, p.235).” In other words, this article proposes to researchers a kind of middle-range theory that delivers clear insights into the conditions and implications of growth strategies available to entrepreneurial ventures.

At a practical level, the research has interesting implications for practitioners since it contributes to a better understanding of the growth strategies adopted by EISF. The typology indicates, and the cases confirm, that beyond the entrepreneur’s profile and willingness to grow, the adoption of strategies such as deepening, practice diversification and internationalization, must be associated with different sets of activities, market conditions, resources endowment and organizational challenges. The research also suggests the driving forces that generate changes of these elements. More specifically, even if the diversification



to software is frequently highly desirable, the very different nature of service- versus product-based configurations explains why this business model shift must be analyzed carefully and is so difficult to carry out in a successful manner.

Anderson & Atkins (2002) pointed out: “[...] the process of configuration and reconfiguration is likely to be the quintessence of successful small-firm planning (p.A1)”. This paper could be the starting point for the development of a practical tool to assist entrepreneurs during this endeavor. As a matter of fact, the description of ideal types and the possibility of comparing them with actual configurations, suggest the development of a diagnostic toolkit where differences can be analyzed and contextualized. In such a tool, positive differences may point towards future configurations that are more elaborated, while negative differences may point towards specific aspects that may require further attention from a management point of view.

At a more general level, this research highlights that fact that growing a business is about managing dynamic fit involving multiple elements and multiple processes. We believe that understanding the issues associated with each ideal type and monitoring the five processes analyzed in this paper will help managers to focus their attention.

We hope that our work will be echoed by other researchers. Due to its exploratory nature, it suggests multiple avenues for future research. The first such avenue is to replicate this project across other types of new ventures. While the extension to ESV is the most natural step, moving to other industries is possible with the same kind of research design. A second important endeavor is to address the limitations mentioned at the beginning of this section. With regard to the typologies, this means testing alternative ways to develop and/or formulate them. We believe that grounded theory protocols are probably an interesting way to do so (Eisenhardt, 1989). At the case study level, this implies more in-depth and real-time case research. Ideally, this also points to a future quantitative approach. Thirdly, and along the same lines, insights from the case studies may also be used to further refine the typologies (e.g. the selection of the elements, the definition of the ideal-types and the associated explanations) and to understand the processes or *imperatives* that drive configuration changes (Miller, 1987). Fourthly, it could also be interesting to take a more detailed look at the analysis of correlations between strategic configuration and growth or performance measurement in general.

Finally, this research can also be considered as a step towards a more comprehensive and dynamic framework combining configuration and process approaches to understand changes of growth strategy in entrepreneurial firms. Although currently available research does not offer many insights into how to perform this integration, our results support the ideas that, first of all, configuration changes are driven by multiple processes, secondly, that the influence of these processes changes over time and thirdly, that this influence is not idiosyncratic since regularities appear. Of course, at this stage, the findings are very preliminary but they do echo work provided by Mintzberg (1983) and Miller (1987) who suggested typical transitions from one configuration to another. Van de Ven & Engleman (2004) suggested that researchers “must isolate meaningful elements that lead to the outcome and then derive a narrative process story that ties these elements into a coherent whole (p. 356)”. We believe that this exploratory research is an attempt to begin to take up this challenge.

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