

THE ACCUMULATION PROCESS OF KNOWLEDGE IN FAMILY FIRMS

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Abstract

This article aims to investigate how ‘knowledge-related human capital’ can be accumulated, i.e. created, shared and transferred, in family business over time. ‘Knowledge-related human capital’ is considered to be a combination of pure knowledge and skill, which family and non-family members working in the family firm have gained and developed through education and experience. Two wine producing family firms from Switzerland and a liqueur family firm from Italy are part of this research. We quote the most significant answers given by the interviewees in order to enable the reader to gain a clear understanding of the issues discussed, reflect upon them, and build his own opinions about them. A tentative knowledge model is developed based upon the review of the literature and the three case studies. It analyses factors responsible for the accumulation process of knowledge in family business across generations.

Key words: knowledge creation; knowledge sharing; knowledge transfer; education; experience; intellectual capital.

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INTRODUCTION

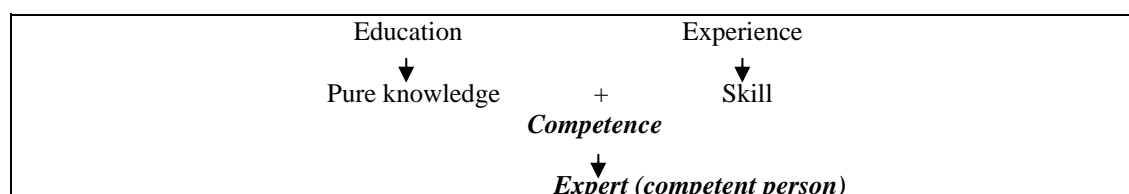
Knowledge is a significant source of competitive advantage, which enables an organisation to be innovative and remain competitive in the market (Polany, 1958, 1967; Nonaka, 1991; Nonaka and Takeuchi, 1995; Grant, 1996; Smith, 2001). It originates in the heads of individuals and builds on information that is transformed and developed through personal beliefs, values, education and experience (Bender et al., 2000; Bollinger et al., 2001). Researchers argue that 90 percent of knowledge in any organisation is embedded and synthesised in peoples' heads (Wah, 1999; Bonner, 2000; Lee, 2000). Knowledge is a non-consumable resource, which means that it is possible to use knowledge without using it up but only if it is updated to avoid obsolescence (Argyris and Schon, 1978; Sadler, 1988; Adler, 1989).

In this research knowledge is viewed as an accumulation and combination of:

- *Pure knowledge*, which is explicit knowledge: information and understanding of fundamental principles acquired through education (e.g. academic courses);
- *Skills*, namely tacit knowledge²: the ability to apply accumulated pure knowledge. The acquisition and development of skills usually require experience (e.g. training, direct observation, active participation in events or activities and so on). Skill also includes *innate skill*, which is the natural ability to do something well, i.e. talent (Schwartz, 1995; Dench 1997; Kaye, 1999). Innate skill is not learned but can be developed and built on. Lunn (1995) argues that training refines and develops talent but it does not create it. Therefore, skills are either acquired or innate. (O'Donnell et al., 1997).

In other words, skill is the ability to carry out a particular task or activity, especially because it has been practiced, whereas pure knowledge is the information needed to apply that skill (Dingle, 1995; Lindsay et al., 1997; Stuart et al., 1997). Krogh et al. (1995: 63) state that: "A person may have acquired a good theoretical understanding of carpentry, but the building of a house requires yet another knowledge, namely the skill of moving a hammer". The expert (competent person) is the person who not only knows but also has the ability to apply what he/she knows effectively and efficiently (Cornford et al., 1995). See Figure 1.

Figure 1. Competent Person.



² *Explicit knowledge* is clearly formulated, articulated or defined and can be embodied in a code, or a language, and as a consequence it can be transmitted and communicated easily (text books, manuals, procedures, databases and so on); whereas, *tacit knowledge* refers to personal knowledge rooted in individual experience and involves mental models, beliefs, perspectives and values. Tacit knowledge is not easy to describe, share and transfer (know-how, skills...) and can be also unconscious as in the case of skills (Polanyi, 1958, 1967; Nonaka, 1991; Nonaka and Takeuchi, 1995; Smith, 2001; Hildreth and Kimble, 2002).

For the purpose of this paper, *knowledge-related human capital (or knowledge or competence) in family business*³ is defined as pure knowledge and skill which family and non-family members working in the family firm have gained and developed through education and experience.

Non-family members are also taken into account, because sometimes a family firm, in order to increase its opportunity advantages, has to behave as an 'open system' to find, exploit and organise external resources not available within the family business (for instance, employing talented non-family members 'skilled people') (Kaye, 1999).

Three main competences can be considered:

- *industry-related competences*, which are usually unique to each particular industry (e.g. specific knowledge and skills in product-making);
- *business competences*, which include ways of running the family business, acquiring/exploiting/developing resources, continuing to make and offer the best products and services, taking calculated risks or avoiding them, resolving problems and conflicts and handling situations of change and/or crisis;
- *ownership competences*, which means being good and active owners and being able to build an efficient government system to direct and control the business. These include: specifying the distribution of rights and responsibilities; adding economic value to the business; producing an overall positive impact on society, so as to maintain a fair balance between various stakeholders (shareholder value and corporate social responsibility).

This research is aimed at investigating the way knowledge-related human capital can be accumulated, i.e. created, shared and transferred in a family business over time. Understanding the above-process may help develop and maintain competitive advantage across generations (see Cabrera-Suarez et al., 2001).

Two wine producing family firms from Switzerland (Iurlaro and Cervo) and a liqueur family firm from Italy (Borsci) are part of this research. The Borsci family firm is in the third generation (G3) and the Iurlaro family firm is in the second generation (G2). They are both growing well. The Cervo family firm is in the third generation (G3) and has some problems that will be presented later on in this study. The paper will be organised as follows. After introducing knowledge as enabler of longevity in family business, the methodology of the qualitative research conducted with the research design, data collection and data analysis is presented. This is followed by a section which reports factors influencing the accumulation process of knowledge in family business. In this section we also transcribe the most significant answers given by the family-business members interviewed. The paper concludes with the discussion and conclusions of the main findings and results of the study, limitations and suggestions for further research. A tentative knowledge model which outlines the accumulation process of knowledge in family firms is presented at the end of this research. It is based upon the review of the literature and the case studies analysed (see figure 3).

³ A family business is here defined as a public or private company in which a family (or families related by blood or marriage) controls the largest block of shares or votes, has one or more of its members in key management positions, and members of more than one generation actively involved within the business (Miller and Le Breton-Miller, 2004; Westhead and Cowling, 1999). However, it should also be noted that within such a definition family firms differ both in terms of family generation in power, and in terms of ownership and management structures (cf. Gersick et al., 1997).

KNOWLEDGE AS ENABLER OF LONGEVITY IN FAMILY BUSINESS

Knowledge needs to be created, shared and transferred to generate value over time. This is a major challenge faced by any firm in everyday business life, especially by *family firms*, when the new generation has to take over the business from the previous one (Cabrera-Suarez et al., 2001; Kellermanns et al., 2004). Succession is described as “the lengthiest strategic process for family firms” (Barach and Ganitsky, 1995 p. 131). It is considered to be a slow multistage process that involves an increasing participation of the successor and a decreasing involvement of the predecessor until the real transfer takes place. Succession is more a process over time than an event (Friedman, 1987; Churchill and Hatten, 1987; Farquhar, 1989; Cabrera-Suarez et al., 2001).

A four-stage model of succession in family businesses has been developed by Churchill and Hatten (1987). Stage 1 in this model corresponds to a stage of owner management, where the owner is the only member of the family directly involved in the business. Stage 2 consists of training and development, where the offspring learns about the business and how to run it. Stage 3 is a partnership stage between father/mother and son/daughter. The fourth and final stage corresponds to the transfer proper: the incumbent turns over overall responsibility and authority to the successor. Succession is so central and crucial to the existence of the family firm that Ward (1987) defines a family business as a business that will be passed on from generation to generation (Handler, 1994; Cabrera-Suarez, et al., 2001; Brockhaus, 2004). Family firms can perform well over time when the newest generation is integrated into the family business and the transfer of knowledge from the previous generation to the next takes place (Cabrera-Suarez, et al., 2001; Kellermanns et al., 2004). At the same time the newest generation has to add new knowledge and offer new perspectives (Handler, 1992; Kellermanns et al., 2004). Understanding how knowledge is accumulated through generations is important given that some studies indicate that only a third of family businesses successfully make the transition from each generation to the next, while only 5% of family firms are still creating value beyond the third generation (Miller and Le Breton-Miller, 2004; The Economist, 2004). A survey in the UK shows that only 30 per cent of family businesses reach the second generation; less than two-thirds of those survive through the second generation; and only 13 per cent of family businesses survive through the third generation (Bridge et al., 2003). Most family firms are not able to create value after the second generation and thus may not survive.

Researchers argue that recurring causes of business failure fall under the general category of ‘business incompetence’ caused by lack of knowledge and experience. Dun & Bradstreet (1991) reported that the main cause of business failure in the US is ‘management incompetence of the business owner’. In their survey, over 66% of business bankruptcies were blamed on ‘management incompetence’. Likewise, Gibb and Webb (1980) concluded that the primary failure determinants of over 200 bankrupt firms were lack of skills, knowledge and ‘inattention’ by management (Beaver, 2003). Carroll (1983) also confirmed in a ‘summary of empirical research on organization mortality’ that the main cause of failure falls under the general categories of managerial incompetence and lack of experience. Pennings et al. (1998) pointed out that low levels of human (and social) capital cause a high incidence of dissolution.

Therefore, the statistics showing the failure of family firms after the second generation might be partially explained by the predecessors’ and/or successors’ lack of capacity and/or

willingness to create, share and respectively transfer and acquire the appropriate 'knowledge' from generation to generation (Szulanski, 1996; Cabrera-Suarez, et al., 2001; Kellermanns et al., 2004; Koiranen and Chirico, 2006).

Cabrera-Suarez et al. (2001) underline the importance of knowledge as a source of competitive advantage in family business; and Bjuggren et al. (2001) point out that there is a form of family idiosyncratic knowledge (and loyalty) that makes intergenerational succession within the family more profitable than other types of succession. In other words, knowledge may be seen as an 'enabler of longevity' in family business, i.e., as contributing to the survival of the family business (figure 3). In this respect, Cabrera-Suarez, et al., (2001, p. 39) argue that the "family firm's specific knowledge, as well as the ability to create and transfer it, are considered a key strategic asset that may be positively associated with higher level of performance".

METHODS

Research design

We chose a *qualitative, interpretative* and *exploratory* approach to gain insight into events. McCollom (1990) argues that qualitative research is particularly appropriate to the study of family business.

The research design is multiple-case, embedded study. Multiple cases permit a replication logic where each case is viewed as an independent experiment which confirm or not the theoretical background and the new insights. A replication logic yields more precise and generalisable results compared to single case studies (Eisenhardt, 1989; Brown et al., 1997; Yin, 2003). We relied on informants at two and often three levels of the generational hierarchy to yield a more accurate analysis. Moreover, the reliability of the study conducted was improved by using several levels of analysis, i.e. an embedded design, including family, business and industry (Yin, 2003).

For the purposes of this paper, it was decided to choose a private Italian family firm from Apulia (Borsci SA) and two private Swiss family firms from canton 'A'*** (Iurlaro SA and Cervo SA), all of which had the potential of yielding interesting insights based on commonalities and differences emerging from comparison amongst them (see Table 1). They all belong to the beverage industry; in particular, the Iurlaro and Cervo family firms belong to the wine industry, and the Borsci family firm to the spirits industry. In those manufacturing sectors, which are dominant businesses both in Italy and Switzerland, the family-business knowledge and traditions have been especially important through generations. Moreover, in each generation, family members of at least two generations have been always involved. Hence, this dataset is ideal for studying the model depicted in figure 3. Names given to firms and other information have been disguised for confidentiality reasons. Table 1 reports the case studies used in this paper and Appendix I reports the family-business histories and family trees.

Table 1. Description of Case Studies.

Family business	Founded	Latest active generation	Country	Industry
Borsci SPA	1840	3 rd *	Italy	Spirits
Iurlaro SA	1944	3 rd	Switzerland	Wine
Cervo SA	19xx**	3 rd	Switzerland	Wine

(*) We decided to consider only the last three generations of the Borsci family firm starting from the point when the artisan activity turned into an industrial business (around 1900).

(**) Some information is not available for confidentiality reasons.

Data collection

Data were collected through personal interviews, questionnaires, secondary sources (newspapers, company internal documents, company slide presentations, company press releases, company web sites and articles from magazines), conversations and observations in 2005 (except for two interviews with a manager of the Borsci SPA in 2004). Semi-structured interviews were conducted with individual respondents who were active family members of the latest generation and of previous generations (managers with a long presence within the firm). Interviews were conducted during several formal and informal meetings with an average length of two-three hours. After each interview the research team discussed its impressions and observations taking notes. The interviews were always taped and transcribed word for word within six hours after the interviews. They were listened to by two or three members of the research team in order to check for consistency of interpretation.

The interviews were conducted in two parts. In the first part, open-ended questions were asked without telling respondents about the constructs of interest in the study in order not to influence them. They had the opportunity to relate their stories of how knowledge has been accumulated over time. During this phase, probing questions were asked to obtain more details related to the stories discussed by respondents. In the second part, closed-ended questions were asked about the accumulation process of knowledge across generations and the role played by specific factors (e.g. collaboration, working outside the family firm, academic and training courses and so forth) on the process as a whole. In addition, respondents had to answer using also a five-step Likert-type scale (from 1 'low value' to 5 'high value') to identify the evolution of several dimensions across generations (e.g. the way knowledge evolved from generation 1 to generation 3). It was a joint effort by members of the research team in order to test for consistency of interpretation. After interviews, telephone calls were made to confirm our understanding of the answers given by the respondents and to complete missing data. We recognise that the anonymity for companies and respondents encouraged sincerity and openness.

Data analysis

Three separate extensive case studies were built from data gathered from primary and secondary sources. Results were consistent with the initial theoretical framework and, in some cases, helped the research team to integrate it. For this reason, data analysis was undertaken using a combination of deductive and inductive methods. The whole process took about five months to complete. The approach was integrated with a growing body of

methodological literature on case study research and cross-case analysis in order to perform cross-case comparisons looking for similarities and differences.

Triangulation of multiple sources of evidence (primary and secondary sources) and the development of case study databases improved the validity and reliability of the study conducted (see Eisenhardt, 1989; Stake, 1995; Miles and Huberman, 1994, Yin, 2003).

HOW TO CREATE, SHARE AND TRANSFER KNOWLEDGE ACROSS GENERATIONS

Knowledge, especially tacit knowledge, is hard to transfer; it is fragile and subject to decay or loss if it is not shared and passed on from generation to generation, primarily in the form of apprenticeship and mentoring. Pure knowledge can be more easily shared and transferred inside a family firm through courses, manuals, procedures and so on. Instead, skill is invisible and highly personal: it needs more complex and longer processes to be shared and transferred (observation, face-to-face interaction, extensive personal contacts between family members/generations and so on).

Nonaka and Takeuchi (1995) point out that knowledge is created and then expanded (shared and transferred) through social interactions between tacit and explicit knowledge and individual and collective knowledge (SECI model: *socialization, externalization, combination, internalization*⁴).

Individual knowledge becomes part of the collective wisdom of the firm (i.e. organisational knowledge embedded in routines and processes) once it is shared and transferred over time (Nonaka and Takeuchi, 1995; Rich and Duchessi, 2001). In a family business context, successors should acquire knowledge from the previous generation but also add new knowledge gained through education and personal experience inside or outside the family firm (Cabrera-Suarez et al., 2001; Kellermanns et al., 2004). An interesting comment was made by Lorenza Borsci⁵ (Generation 3), one of the managers and owners of the Borsci Industria Liquori S.p.A: “*our success depends on the ‘experience’ and ‘knowledge’ gathered and handed down through the generations and acquired from outside*”.

According to the literature and the case studies analysed, knowledge-related human capital is best created, shared and transferred in a *business (and family) environment* in which members of the family firm involved in the succession (predecessors and successors) strongly value the following factors:

⁴ “The first step, socialization transfers tacit knowledge among individuals through face-to-face communication, observation, imitation, shared experience and practice (e.g. apprenticeship). This kind of tacit knowledge sharing takes place between people who have a common culture and can work together effectively. In the next step, externalization is triggered by dialogue or collective reflection and relies on analogy or metaphor to translate tacit knowledge into documents and procedures. Converting tacit knowledge into explicit knowledge means finding a way to express the inexpressible (Stewart, 1997). Combination consequently reconfigures and combines pieces of explicit knowledge by sharing explicit knowledge through meetings, documents... Lastly, internalization translates explicit knowledge into individual tacit knowledge (first verbalised and then absorbed, so that explicit knowledge becomes part of the individual’s knowledge base). For instance, people can re-experience what others previously learned and have the opportunity to create new knowledge by combining their existing tacit knowledge with the knowledge of others by reading documents or training courses” (Nonaka and Takeuchi, 1995).

⁵ Borsci Industria Liquori S.p.A., Taranto, Italy.

- Working within the family firm: ties, cooperation and collaboration enhanced by trust;
- Motivation and commitment;
- Emotional attachments 'psychological ownership';
- Academic courses and practical training courses;
- Working outside the family firm;
- Employing/using talented non-family members.

The text that follows can be read by researchers as hypotheses and suggestions for further research, and by managers as possible factors needed to accumulate knowledge in order to be successful across generations (see figure 3). We will quote the most significant answers given by the interviewees in order to enable the reader to gain a clear understanding of the issues discussed, reflect upon them, and build his own opinions about them.

Working within the family firm: ties, cooperation and collaboration

Working within the family firm is important in order to acquire experience and develop skills day by day. People make mistakes and learn how to resolve problems. Ties, cooperation and collaboration allow face-to-face interactions and more generations to work together before and during the transition process (Daft and Lengel, 1984). Coleman (1988) analyses social capital as creator of human capital and Kusunoki et al., (1998) posit that the dynamic interaction of knowledge, as processes of knowledge accumulation, depends largely on the social context within the organisation.

Indeed, strong relationships between the two generations positively contribute to the stage 'training and development of the successors' described by Churchill and Hatten (1987) in their four-stage model of succession (Lansberg, 1988; Chrisman et al., 1998; Nahapiet and Ghoshal, 1998; Cabrera-Suarez et al., 2001; Le Breton-Miler et al., 2004).

Several researchers (e.g. Gersick et al., 1997; Cabrera-Suarez et al., 2001; McClendon & Kadis, 2004; Kellermanns et al., 2004; Salvato, Pernicone and Chirico, 2006) argue that successful strategic and knowledge development over time is facilitated by communication and cooperation between and within the generations of the family business. The above-mentioned processes may be facilitated in family firms, compared to non-family firms, thanks to the intense social interactions between family members (see Tagiuri and Davis, 1996; Cabrera-Suarez et al., 2001). For instance, Tagiuri and Davis (1996) argue that the emotional involvement, the lifelong common history and the use of a private language in family businesses enhance communication between family members. First, this allows them to exchange knowledge (especially tacit knowledge) more efficiently and with greater privacy compared to non-family businesses (Tagiuri and Davis, 1996; Cabrera-Suarez et al., 2001); second, it develops idiosyncratic knowledge which remains within the family and the business across generations (see Coleman, 1988; Bjuggren et al., 2001; Cabrera-Suarez et al., 2001; Kellermanns et al., 2004). In successful multigenerational family firms the previous and following generation exchange ideas and encourage mutual learning (Handler, 1991; Cabrera-Suarez et al., 2001; Kellermanns et al., 2004).

Goldberg (1996) demonstrated the importance of 'appropriate experience working together' in his study made of 63 family business CEOs. Effective successors had many more years of experience working in the family business than did the less effective group of his study. The mean age effective successors entered the business on a full time basis was 23 years old, while their counterparts joined at a mean age of 29 years old.

The following comments reflect the importance of ‘working within the family firm’ and of ‘family relationships’ in family business:

Giuseppina Borsci⁶ (Generation 3): *“I have learned almost everything working within our family business, acquiring knowledge from the previous generation and developing and sharing it with the present generation. ‘Overall Knowledge’ acquired through experience working together across generations and within the same generation. My cousins and I worked for about 25-30 years in the family firm with the previous generation until 1997. We started with simple tasks, very boring sometimes but important in enabling us to understand better from the bottom-up how to run the business and how to make it work. Every generation brings something more which creates value in the business. We have grown up in the family firm as persons, managers and now owners. The second generation was able to teach us directly and indirectly all the tricks of the trade in production, administration and distribution. Our parents also taught us how to communicate and cooperate with each other and solve problems”.*

Lorenza Borsci: *“My father and uncles were very good and active as owners. They used to invite us to the meetings of the Board of Directors to teach us how to run the business. We govern our business with the same behavioural ethics of honesty and respect learned from the previous generation”.*

Claudio Iurlaro⁷ (Generation 2): *“The firm was small and not well developed in G1. I remember how I started working and now I know where I am. A lot of work has been done to achieve such results. I learned from my mistakes how to produce wine of high quality...My nephew, Mattia (G3) is acquiring and adding new knowledge working in the family firm day by day, in a learning-by-doing process. Mattia also has a sense of responsibility for the family firm and works hard for it. Cooperation and collaboration are essential to create, share and transfer knowledge in the long run”.*

Carlo Cervo⁸ (Generation 3): *“My father had been working with my grand father for 15 years learning all the ‘tricks of the trade’ from him... I joined the business when I was 22 years old... I have learned and I am still learning a lot from my father. The basis of my knowledge was learned at school but, of course working in the family firm allowed me to learn day by day how the business works and how to make it work better”.*

Hence, ‘working within the family firm’, having ‘face-to-face interactions’ and ‘more generations which work together’ allow family (and non-family) members to create and share their knowledge. Offspring have the opportunity to learn directly from the old generation in a ‘learning-by-doing process’ how to run the family firm, how to be a good ‘family owner’ and, more importantly, all the tricks of the trade related to the business (Coleman, 1988; Nonaka and Takeuchi, 1995: see Nonaka’s spiral of knowledge ‘socialization’; Cabrera-Suarez et al., 2001).

Certainly, such interaction between generations should begin when offspring are growing up in order to ensure sufficient training and not when they are about to take over the firm (Longenecker and Schoen, 1991; Chrisman et al., 1998).

⁶ Borsci Industria Liquori S.p.A., Taranto, Italy.

⁷ Iurlaro SA, Switzerland.

⁸ Cervo SA, Switzerland.

In this way, each succession adds considerable new experience to the family firm (Cabrera-Suarez et al., 2001). But, this significantly occurs from the first to the second generation when family values, beliefs, traditions and commitment are very high (see Carlo Cervo's speech in the section 'Motivation and Commitment'), as reported by Astrachan et al. (2002).

Furthermore, the most important issue for cooperation and collaboration is trust (see, for instance, Argote, 1999; Nahapiet and Ghoshal, 1998; Faustine, 2001; Salvato, Pernicone and Chirico, 2006). Family firms are often depicted as being high in trust (LaChapelle and Barnes, 1998; Steier, 2001). The greater the level of trust, the greater the level of openness (which enables cooperation and collaboration) and the better the opportunities and willingness, especially for tacit knowledge to be created, shared and transferred over time (Dyer, 1986; Lehman, 1992; Mayer et al., 1995; Tagiuri and Davis, 1996; Faustine, 2001; Koskinen, 2003). 'Openness' refers to the free flow of truthful information between family-business members (see figure 3).

Excerpts from interviews provide insights as follows:

Giuseppina Borsci: *"The previous generation knew that relations among cousins are not easy sometimes. This is why they gave us some rules and we just respect them in order to avoid problems between us. We respect and trust each other (G3) thanks to the effort put in by the previous generation. Trust was, and still is, essential to work well together"*.

Claudio Iurlaro: *"Trust is considered an important value enabler of cooperation and collaboration. We trust each other and work for the success of the firm"*.

Carlo Cervo: *"My father and my uncles (G2) were able to build a solid firm which has been growing since the 1960s. Trust was a key factor for their success. Nowadays, the business is divided into three parts: administration, production, and distribution. Each member of the third generation works with his father (except for 'son3' and 'son4' who work with 'owner3') in a specific area of business (see Appendix I)". Our relations are not very good. It seems that relations between family members are not strong and cousins (G3) do not trust each other so much.*

Motivation and Commitment

A recipient and/or a source's lack of motivation to keep the business as a family firm and a low degree of commitment to the family business may negatively effect the accumulation process of knowledge within the business (see for instance Nonaka and Takeuchi, 1995; Barach and Gantisky, 1995; Szulanski, 1996; Astrachan et al., 2002; Sharma et al., 2001; 2003; Le Breton-Miler et al., 2004; Koironen and Chirico, 2006).

Koskinen (2003) posits that motivation generates commitment, which is the willingness to work hard and give time and energy to an activity. Particularly, a family's commitment to the business concern refers to the extent to which family members desire the perpetuation of the business in the family (Sharma et al., 2003).

As pointed out by Carlock and Ward (2001), commitment encompasses: personal belief and support of organisational goals and visions; willingness to contribute to the organisation; and desire for good relations with the organisation. Thomas (2001) argues

that not every family member can have the same degree of commitment and interest in the family business, especially after the second or third generation. In fact, family relationships generate unusual motivation, commitment and loyalties, and increase trust although values, beliefs, traditions and commitment tend to decrease after the second or third generation when usually problems arise (Tagiuri and Davis, 1994; Astrachan et al., 2002; see the Carlo Cervo's speech) (see figure 3).

Comments from interviewees are given below:

Giuseppina Borsci: *“Motivation and commitment have always been very high. There is (and was) an easy flow of information within and between generations”*.

Claudio Iurlaro: *“As for me...the business is my life. My nephew, Mattia (G3) is also very motivated and committed to the family firm. He is acquiring and adding new knowledge to the business”*.

Carlo Cervo: *“Motivation and Commitment are some of the first things that family members must have. When I retire, I will need a successor – my cousin(s) – very motivated and committed to the business. I do my best to share and transfer all my know-how to my cousins (G3) even though sometimes it is not easy because young people are more disorganised, less concentrated, and have a lot of interests”*. It appears that Carlo's cousins (G3) are not as motivated and committed to the business.

Emotional attachments ‘psychological ownership’

Psychological ownership is the psychologically experienced-phenomenon in which owners, managers and employees develop possessive feelings that the family firm is ‘mine’ or ‘ours’. In other words, it refers to the family and non-family members’ possessive emotional feelings over the family business with a strong sense of identity, belonging and responsibility over the business (Koiranen, 2006: adopted from Pierce et al., 2001, 2003). For instance, strength of identifying oneself with the family business, sense of belonging to the family business and strong feeling of responsibility over the family business. In particular, investing a lot of energy, time, money, and/or emotions during an activity is part of family members’ identity and culture which increase their feeling of possession over the business. In other terms, it is a state of mind, feelings and attitudes (Hall, 2005). The hope is that future generations will feel the same strong emotional attachment to the family business, which makes it easier to acquire, create, share and then transfer knowledge across generations (Reagans et al. 2003; Chirico, 2007) (see figure 3).

The following examples show the importance of psychological ownership in family business:

Giuseppina Borsci: *“The business has always been a big part of family members’ life. I remember my father and uncles who used to spend 15 hours a day in the firm. Their life was the Borsci family firm. Nowadays, we still work hard and we are very committed to the family firm (product-line-extension, diversification, acquisition of Astrelino, etc.) but we also have time to enjoy our life. In addition, we are more specialised in our area and we are able to better control the business”*.

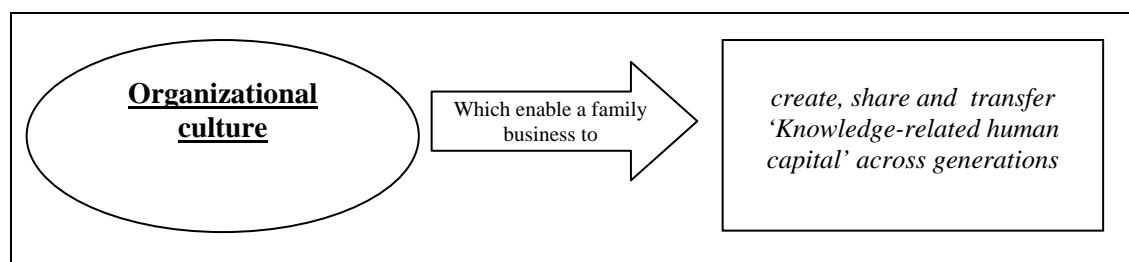
Claudio Iurlaro: *“I have been working all my life in the family firm - since 1968. I identify*

myself with the family firm. I feel part of it and a strong responsibility to it...I follow the production of wine from the land to the label in order to guarantee the final product consumed by the customer. Mattia also feels responsible for the family firm and works hard for its success”.

Carlo Cervo: *“I have been working for more than 30 years in the family firm. I do not have anything else than my business and I have given all my life to the business, I made a lot of sacrifices for it...my motivation and commitment are very high. I feel this is my own place. I am glad when I go on holidays but I miss my place. It was the same in the second generation, with my father and uncles, and in the first generation with my grand father. My father is 81 years old and he is still active in the business. His main interest has always been the wine business. The same is true of my uncles. I do not know about the future...when I retire and my father and my uncles die... ‘we will see’ if the Cervo firm will go on. Moreover, I am not married, I do not have children, and my cousins’ sons are not interested in the firm...maybe the business will shut down after this generation”.*

The study of more than forty family firms made by Gibb (1988) indicates that a family-business culture plays an important role in determining whether the firm continues successfully beyond the first generation. The family-business culture stems from the combination of different patterns (see Dyer, 1986; Zahra et al., 2004) which result from the social relations within the family business and the beliefs, values, commitment and emotions embedded in the family. Astrachan (1988: 166) underlines that “culture is thus a manifestation of relationships among people”. It creates a sense of belonging to a group where the group is a part of the individual and the individual is a part of the group. The factors mentioned earlier (ties, cooperation, collaboration, motivation, commitment and psychological ownership) allow a family firm to develop a strong *organisational culture* of continuous improvement and learning in which cooperation and collaboration carry a lot of weight in the accumulation process of knowledge from generation to generation (Schein, 1983; Hall et al., 2001; Swee, 2002; Zahra et al., 2004) (see figures 2 and 3). Indeed, a learning organisation is the one in which the *culture* is maximised in order to increase knowledge creation by sharing and transferring it (Kim, 1993; Hall, 2001). Garvin (1993: 51) defines a learning organisation as “an organization skilled at creating, acquiring, and transferring knowledge, and modifying its behavior to reflect new knowledge and insights”; and Alvesson (1993: 2, 3) defines ‘culture’ as a “shared and learned world of experience, meanings, values and understanding, which inform people and which are expressed, reproduced and communicated in a partly symbolic form”.

Figure 2. Organisational Culture as Enabler of Knowledge Creation, Sharing and Transfer Process.



Furthermore, according to the literature and the case studies analysed, knowledge is also

created ‘working outside the family firm’ and created, shared and transferred through ‘academic courses and practical training courses’ (Rosenblatt et al., 1985; Dyer 1986; Ward, 1987; Lansberg, 1988; Churchill and Hatten, 1987; Lansberg and Astrachan, 1994; Nonaka and Takeuchi, 1995; Barach and Gantisky, 1995; Cabrera-Suarez et al., 2001; Le Breton-Miller et al., 2004).

Academic courses and practical training courses

Academic courses and practical training courses are a form of learning activity by which people, in the case in point the members of the family firm, can re-experience what others previously learned and have the opportunity to create new knowledge by combining their existing tacit knowledge with the knowledge of others (Nonaka and Takeuchi, 1995: see Nonaka’s spiral of knowledge ‘internalization’).

Particularly, *academic courses and practical training courses outside the family firm* in schools, universities, firms, institutions, and so on, allow people to acquire ‘pure knowledge’ and develop ‘skills’ respectively which, once brought into the family firm, must be shared with and transferred to the other members of the firm. Conversely, *practical training courses within the family firm* allow people to acquire, share and transfer knowledge across generations (Dyer 1986; Ward, 1987; Churchill and Hatten, 1987; Barach and Gantisky, 1995; Goldberg, 1996; Le Breton-Miller et al., 2004) (see figure 3). In small-to-medium family businesses, practical training courses within a family firm can be simply translated into ‘activities of working together’ (see Dyer, 1986; Cabrera-Suarez et al., 2001; Le Breton-Miller, 2004) by which members of the firm create, share and transfer knowledge (especially tacit knowledge) day by day often unconsciously (e.g. apprenticeship). For this reason, *practical training courses within the family firm* are included in the box ‘working within the family firm: ties, cooperation and collaboration’ in figure 3. Internal apprenticeship can be viewed as an excellent training in traditional industries which do not operate in environments of rapid change. Outside training is, instead, essential when the market changes very quickly (Le Breton-Miller et al., 2004).

Comments reflecting the importance of academic and training courses in family business are reported below:

The managers of the family firms interviewed recognise that the basis of their knowledge has been developed at school. Dyer (1986: 27) believes that “the college or technical degree is the first hurdle that potential successor must overcome”. Lorenza and Giuseppina Borsci have followed several specialisations in Business Economics. Claudio Iurlaro has a Diploma in Economics (Lugano) and a Diploma in Oenology (Lausanne). He has also followed several courses in continuing education at the University of Bordeaux (1989/90 - 2000). Carlo Cervo has a Diploma in Economics (School of Geneva: École Supérieure de Commerce) and a Diploma in Viticulture and Enology (School of Lausanne: École Supérieure de viticulture et oénologie).

Giuseppina Borsci: “*Knowledge is also acquired through training courses within and outside the firm (in production, management, and so on) provided for family and non-family members, for managers and shop-floor workers*”.

Claudio Iurlaro: “*My nephew (Mattia) did several internships in wine firms and will do another one abroad soon. Moreover, Mattia will attend a School of Oenology for two years*”

(2007/2008) in order to improve his competencies and add new value to the family firm”.

Carlo Cervo: *“We do not have training courses at the moment even though I admit that they are important and especially needed in our firm...we operate in a dynamic market”.*

Working outside the family business

Working outside the family firm gives a more detached perspective over how to run and how to introduce changes and innovation in the business. As reported by Brockhaus (2004), many consultants recommend spending at least three to five years in another business. Experience outside the family firm helps the successor to develop a knowledge-base and a sense of identity. It prepares him/her for a wider range of problems that can occur later in the family business (Barnes, 1988; Barach et al., 1988; Correll, 1989; Barach and Gantisky, 1995; Le Breton-Miller et al., 2004). Ward (1987) adds that working outside the family firm is crucial because it gives offspring experience in developing new strategies, adding formal management systems and building new management teams in the business. For this reason, knowledge acquired outside the family firm must be shared and transferred within the family business over time (see figure 3).

This view is consistent with the following comments:

Giuseppina Borsci: *“We have learned and we are still learning a lot from outside, working and cooperating with external partners. My nephew, Roberto, worked for other companies in order to acquire more experience before joining the Borsci family firm in 2005”.*

Claudio Iurlaro: *“I worked for six months in a wine firm in Germany and for six months in a wine firm in Switzerland before starting the business. Such experiences have also taught me how to run my business...My nephew has also worked in other firms”.*

Carlo Cervo: *“If you want to learn something more, you have to leave home for a while. You need to go outside, have a different view of your business and of how to do business. I worked for nine months in a wine firm in South Africa and six months in a wine firm in Germany. Unfortunately, my cousins do not have work experiences outside the family firm”.*

Employing/using talented non-family members

Knowledge can be also acquired by employing/using talented non-family members (skilled people) who work for or have relations with the family firm. In fact, sometimes, in order to increase its opportunity advantages a family firm has to behave as an ‘open system’ which finds, exploits and organises external resources not available within the family business (Lansberg, 1988; Dyer, 1988; Keough and Forbes, 1991; Kaye, 1999; Le Breton-Miller et al., 2004). Employing/using external members is an indication of the openness and flexibility of the family firm (Ward, 1987; Alderfer, 1988; Malone, 1989; Jaffe and Lane, 2004) (see figure 3).

This view is also suggested by the following comments:

Giuseppina Borsci: *“We have learned a lot from external experts who joined our business. I have personally acquired knowledge working with the new sales manager employed in*

the 1970s (Mr Franco Rovida, from the company Ramazzotti). Today, the sales director and managing director are non-family members. They are really an important asset". Knowledge in creating blends of liqueurs (product-line-extension and diversification) and in management improved with the new generation (G3) and with the new, skilled non-family members employed in the 1970s. The family firm also resorts to, and benefits from, consultants. The family firm has always been open to acquiring skills from outside, but never more than today. Giuseppina Borsci: "Some entrepreneurs from the South of Italy think they know everything; but it is not possible. External assistance is needed. We continually invest money in acquiring knowledge from outside. Research was and still is important. The best place in which research can develop is the university. We have good relations with some universities and we draw advantage from their studies and surveys into our sector, into what we produce. For instance, we are cooperating with a Professor on the creation of new kinds of Astrelino chocolate".

Claudio Iurlaro: "Knowledge is also acquired from outside the family. We have an engineer who is responsible for the vineyards and an expert oenologist who is responsible for the cellar. Strong relations are established with research centres and universities (a professor of the University of Bordeaux follows the tasting of wines every two years. Researches have been conducted in order to learn how to produce high-quality young wine and white wine from red grapes), with specialists in management (e.g. an Italian specialist of sales and marketing every week helps us to increase sales. We are acquiring new competences in management through this kind of cooperation and a six month long training course. The cost was about 30,000 Swiss francs) and so on".

Carlo Cervo: "Today, we rely more on internal human resources".

DISCUSSION AND CONCLUSIONS

The purpose of the present research was to make a contribution to the understanding of the critical factors that influence the accumulation process of knowledge in family business.

The **Borsci** family firm is in the third generation (G3) and is growing well. Cooperation, collaboration and trust are still very high as well as motivation, commitment and psychological ownership. As noted by Giuseppina Borsci, "*the second generation did a great job of building and maintaining a positive and friendly environment within the family and the business. There is (and was) an easy flow of information within and between generations*".

In addition, the Borsci family firm also pays great attention to training courses, working outside the family firm and employing/using external family members. As a matter of fact, its overall level of knowledge has increased from generation one to generation three, as shown in Table 2.

The **Iurlaro** family firm is in the second generation (G2) and it, too, is growing well. All factors influencing the creation, sharing and transfer process of knowledge are very high, as can be interpreted through the comments recorded in this paper. The overall level of knowledge has risen from generation one to generation two (see Table 2).

Power is centralised under Claudio Iurlaro who appears to be good at directing and controlling the family firm and at distributing rights and responsibilities to family and non-

family members. According to Claudio Iurlaro's comments, knowledge is expected to go on increasing in G3 (with Mattia, who joined the business in 2003). For instance, Claudio Iurlaro recognises that his nephew, Mattia (G3), is acquiring and adding new knowledge by working in the family firm day by day, in a learning-by-doing process. Mattia seems to be very motivated and committed to the family firm and works hard for it. He did several internships in wine firms and will attend a School of Oenology for two years (2007/2008) in order to improve his competencies and add new value to the family firm.

The **Cervo** family firm is in the third generation (G3) and problems are growing mainly because of the low degree of trust, collaboration, motivation, commitment and psychological ownership between members of the third generation (in particular, Carlo Cervo's cousins). In addition, the Cervo family business is not paying enough attention to training courses, working outside the family firm and employing/using external family members in G3. As a consequence, the overall degree of knowledge has decreased from the second to the third generation (see table 2). Knowledge has not been completely lost in the third generation thanks to Carlo Cervo who is still very motivated and committed to the business. He states: *"I have acquired new knowledge in business and wine making. In the last twenty years I have participated in different conferences related to the wine market. It is important to know how the grapes grow and how to take the best from them in wine making"*. He feels he belongs to the second rather than the third generation. He gives the impression, that he does not believe that his cousins have a strong motivation, commitment and psychological ownership to the family firm. He says: *"My cousins do not own the business but just work for it"*. The ownership of the family firm is in the hands of G2 including Carlo Cervo. Further, each member of G3 works with his father (except for 'son3' and 'son4' who work with 'owner3') in a specific area of the business (see Appendix I). It appears that cousins (G3) do not trust each other so much and, as a result, cooperation and collaboration are not very strong. Consequently, the sharing and transfer process of knowledge is not easy to realise.

The future appears to be very uncertain and knowledge is likely to be lost with Carlo Cervo's retirement. In fact, Carlo Cervo seems to be quite sceptical about the continuity of the family firm after his retirement. He underlines that he usually does his best to share and transfer his know-how to his cousins (G3). But he also admits that this is not an easy task to accomplish because his cousins are not enough motivated and committed to the family business. He concludes that: *"I am not married, I do not have children, and my cousins' sons are not interested in the firm... maybe the business will shut down after this generation"*.

Table 2. Level of Knowledge across Generations.*

BORSCI SPA			
	G1	G2	G3
Industry-related competences (e.g. specific knowledge and skills in product-making)	3	4	5
General business competences (for running the business 'management, marketing, finance...')	3	4	5
General ownership competences (for being a good and active owner 'governance, control...')	3	4	5
IURLARO SA			
	G1	G2	G3**
Industry-related competences (i.e. specific knowledge and skills in product-making)	1	5	n.a.
General business competences (for running the business 'management, marketing, finance...')	2	4	n.a.
General ownership competences (for being a good and active owner 'governance, control...')	3	4	n.a.
CERVO SA			
	G1	G2	G3
Industry-related competences (i.e. specific knowledge and skills in product-making)	2	4	3
General business competences (for running the business 'management, marketing, finance...')	3	4	3
General ownership competences (for being a good and active owner 'governance, control...')	2	3	3/2

(*) Five-step Likert-type scale from 1 'low value' to 5 'high value'

(**) G3 is represented by Mattia who joined the business recently (year 2003)

The three case studies highlight the importance of specific factors whose combination enhances knowledge across generations even though it does not imply that all of them are essential or have the same amount of importance. For instance, Lorenza Borsci says: *"Learning-by-doing is (and was) more important than academic courses in our company"*. In particular, our sample shows that high level of emotional involvement of family members and intense social interactions between them facilitate the accumulation process of knowledge in family business. In contrast with Astrachan et al., (2002), the family firms analysed (except for the Cervo SA) are still very committed and proactive for the wealth of the family business although they passed the second generation. For instance, Giuseppina Borsci underlines that *"the history of Borsci entrepreneurs is continuing. After the second generation family businesses usually start to maintain what they already have. We did the opposite by starting the product line-extension and the diversification of our products (which are both knowledge-based), and by acquiring a new company, the Astrello Maestri di Cioccolato, S.p.A."*

To conclude, knowledge can be depicted as the most important strategic resource of any firm. The ability to acquire, develop, share, transfer and apply it enables a firm, in the case in point a family business, to generate higher value of performance over time (Grant, 1996; Cabrera-Suarez et al., 2001; Kellermanns et al., 2004). This is why, family firms should be more careful in sustaining, maintaining and developing knowledge across generations.

We encourage family firms to enhance their own knowledge, viewed as 'enabler of longevity', by creating, sharing and transferring it across generations. A *tentative knowledge model* related to the accumulation process of knowledge in family firms is depicted in figure 3. It is based on the review of the literature and the three case studies analysed. It summarises concepts and relationships explored in this research. As already mentioned, the causal relations indicated in figure 3 can be read by researchers as hypotheses and suggestions for further research, and by managers as possible factors

needed to accumulate knowledge in order to be successful across generations.

As depicted in figure 3, the accumulation process of knowledge is positively related to the longevity of the family firm. At the top of the model lie the factors which positively influence the acquisition of knowledge from outside the organisation: academic courses and practical training courses outside the family business; working outside the family business; and employing/using talented non-family members. At the bottom of the model are the factors which positively influence the accumulation process of knowledge within the family firm: working within the family firm; ties, cooperation and collaboration; motivation and commitment; and emotional attachments - 'psychological ownership'.

For multigenerational family firms to succeed, the new generation needs to acquire knowledge from the previous one while at the same time adding new knowledge and offering new perspectives for the sustainability of the family firm over time (Kellermanns et al., 2004). Indeed, Cabrera-Suarez et al., (2001) and Bjuggren et al., (2001) underline the importance of knowledge as a source of competitive advantage in family firms.

Although it was beyond the scope of this paper, we recognise that our study was limited in that it did not take into consideration the reluctance of the previous generation to accept new knowledge and management approaches (Lansberg, 1988; Davis and Harveston, 1999) and the reluctance of the new generation to recognise the previous work and knowledge brought by the previous generation (Cabrera-Suarez et al., 2001).

The 'working within the family firm: ties, cooperation and collaboration's construct' depicted in figure 3 is of vital importance to overcome the problem described above. Sharma (2004, p. 13) posits that "a supportive relationship characterised by mutual respect enables the smooth transition of knowledge" across generations.

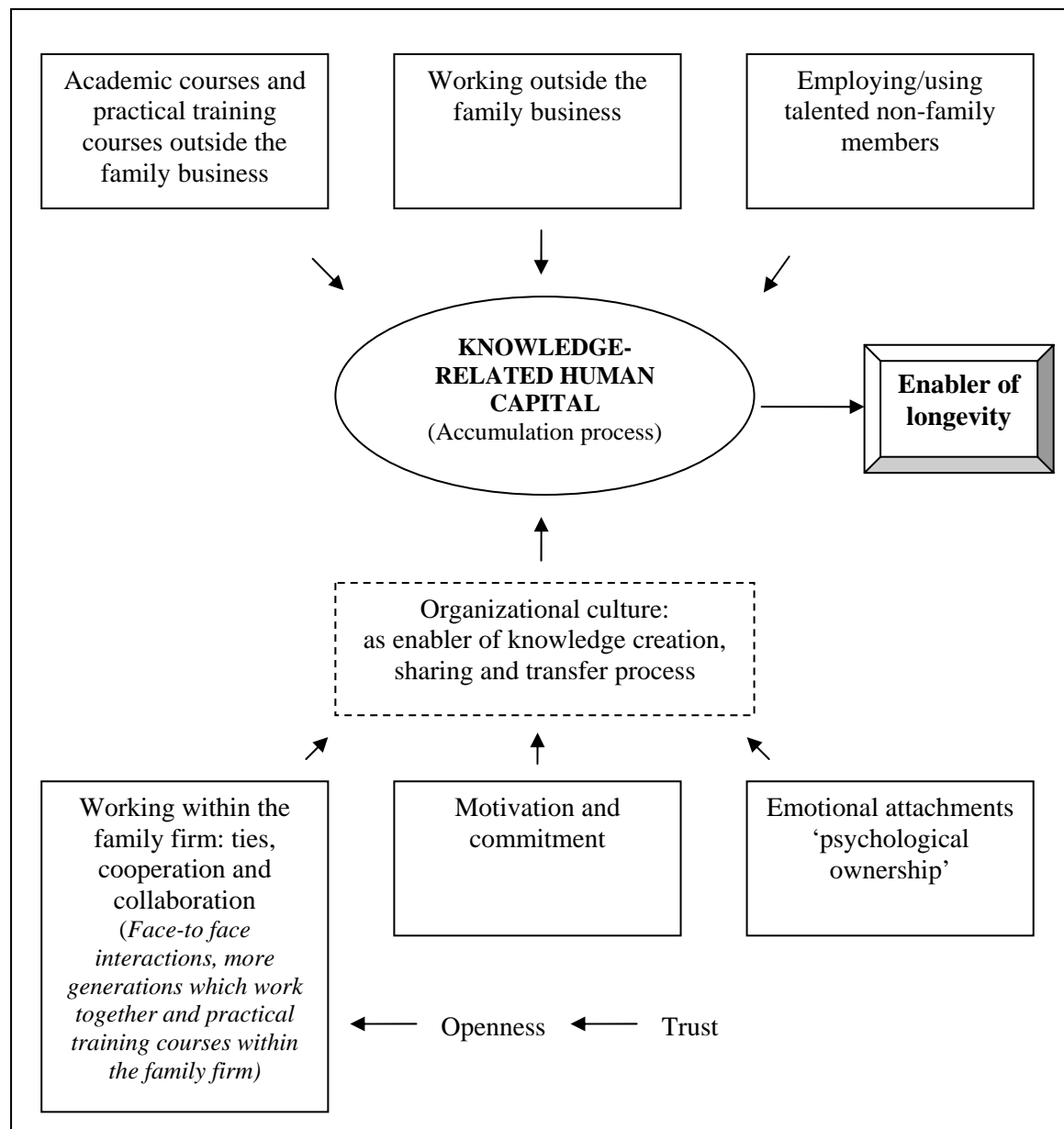
Successful multigenerational family firms are those in which the previous and following generation communicate to each other, exchange ideas, offer feedback and support mutual learning. The previous generation must have the flexibility to explore and accept the new knowledge and the new way of doing business of the new generation. At the same time, the new generation must appreciate the previous generation's knowledge and contribution to the firm (Davenport and Prusak, 1998; Cabrera-Suarez et al., 2001; Kellermanns et al., 2004). Further research is needed in this direction.

In addition, taking into consideration some of the possible critical factors that influence the accumulation process of knowledge is itself another limitation of this study. Yet, it was needed in order to build up a simple model useful for researchers and practitioners.

This study did not set out to draw statistically significant conclusions, because of the small size of our sample. As a consequence, the model represented in Figure 3 cannot be generalised to all family businesses, although its validity can be improved by introducing other case studies into the research.

The intent was to focus the attention of family-business researchers and practitioners on the knowledge issue, which appears to be of great importance to family firms. In fact, succession has attracted considerable attention in the family-business literature (e.g. Barach and Ganitsky, 1995), but the process of knowledge creation, sharing and transfer across generations has not been extensively studied.

Figure 3. A Tentative Knowledge Model: The Accumulation Process of Knowledge-related Human Capital.



We see our research efforts as a point of departure for guiding and pushing forward further theoretical and empirical research. We hope that our model can serve as a framework for researchers and practitioners on how to facilitate the accumulation process of knowledge within a family firm. Its implications should be extended to help explain why some family firms survive through generations and others do not. Indeed, given the high relevance of these issues for both researchers and practitioners additional studies are clearly needed in order to examine and test further on a large representative sample the model in figure 3. It would be also interesting to analyse non-family firms to compare if, definitively, the model proposed is exclusive of family firms or not. Further research may be also aimed at empirically measuring the effect and weight of each factor on the accumulation process of knowledge and find out what happens if they act in concert.

Additional investigations may further develop the model in figure 3 and include other relevant dimensions. Future research may be also directed at exploring the process by which knowledge generates trans-generational value in family business. It would be also of great worth to explore the negative effects that some aspects of the family-business culture such as Nepotism or Paternalism may generate on the entire process. This is the future direction of the present research.

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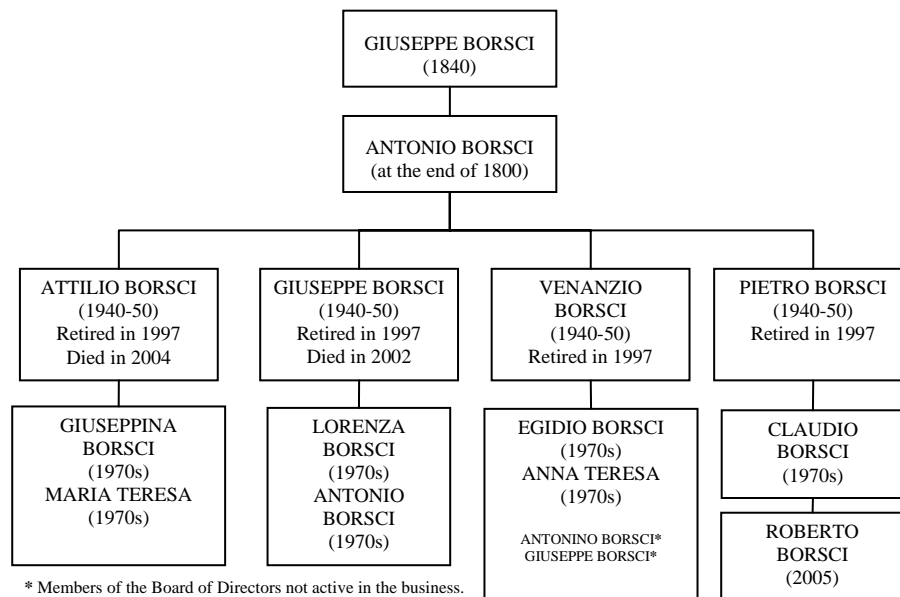
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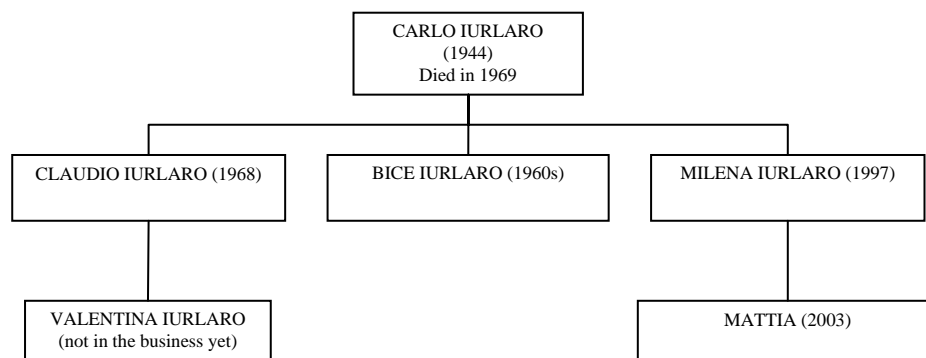
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APPENDIX I

Borsci S.p.A: 1840 was a milestone in the history of the Borsci family. It was in 1840 that Giuseppe Borsci, as a herbalist, improved the recipe for a liqueur inherited from his ancestors, creating an Elixir that has remained unchanged to this day. He called it *Elisir San Marzano*, taken from the name of the family's hometown, San Marzano (Taranto, Apulia, Italy). At the end of the nineteenth century, Giuseppe Borsci's son, Antonio, took over the artisan activity and turned it into an industrial business by starting a new factory in San Marzano. Hence, in this study we conventionally consider Antonio's generation as the first one (G1) in the history of the Borscis. In 1950, Antonio Borsci's sons, Giuseppe, Pietro, Attilio and Venanzio (G2), took over the business. In 1964 they established a larger and more efficient factory, moving from San Marzano to Taranto. In the 1970s the company was incorporated into a new company (from SNC to SPA) and skilled non-family members were employed. The family firm's capital was, and still is, entirely owned by the four Borsci brothers (G3). Their sons have been working since the 1970s in the family firm and legally took over the business in 1997. They all sit on the Board of Directors. The Chairman of the Board of Directors is Egidio Borsci (Venanzio's son). In 2005, Borsci had 40 employees and annual revenues of 11 million euros. Borsci produces and/or commercialises several kinds of liqueurs and several related products such as Bon Borsci, Baba of Elisir San Marzano and Astrelino chocolate (the company 'Astrelino Maestri di Cioccolato S.p.A' was acquired in 2005). Borsci's main market is Italy, but company products are also exported to the US, Germany, Ireland, Australia and Japan.



Iurlaro SA: In 1944, Carlo Iurlaro (first generation, G1) founded the wine firm “Carlo Iurlaro” in Switzerland. Since his sudden death in 1969, the firm has been run by his son, Claudio (G2). In 1975, Claudio bought the share of his sister, Milena. Claudio is currently CEO and Chairman of the Board. 70% of the capital is owned by him and 30% by his mother, Bice Iurlaro, who carries out managerial tasks (debt management) on a part-time basis. In 1997, Milena Iurlaro started working for the family firm as a part-time employee, managing Iurlaro Aziende Agricole SA. The latest generation (G3) is represented by Milena’s son, Mattia, who was put in charge of Lucchini Giovanni SA and Tenuta Vallombrosa in 2003. The family firm is staffed with forty employees in production, administration, sales and vineyards. It owns 30 hectares of vineyards from which high quality wines are obtained. Cellars are located in the village of Lamone near Lugano, whereas vineyards are located in Comano (Vigneto ai Brughi), in Lamone (Tenuta San Zeno), in Vico Morcote (Castello di Morcote), in Gudo (Tenuta Terre di Gudo), in Neggio (San Domenico), and in Castelrotto (Tenuta Vallombrosa). The firm also produces olive oil, grappa and honey. The group is made up of two companies: Iurlaro Aziende Agricole SA, which is in charge of the agricultural side and Iurlaro Carlo Eredi SA, which deals with the commercial distribution of the products through a wine shop and a commercial network across Switzerland. Iurlaro products are also exported to Germany, the United Kingdom, Sweden, Russia, and the US.



Cervo SA: ‘Founder1’ Cervo and ‘Founder2’ Saccà founded the wine firm Cervo&Saccà in 19xx in Switzerland. Their activity was initially limited to purchasing wine from local producers, blending and re-selling it to restaurants and tourists. Founder1 died in 19xx and Founder2 retired a year later, in 19xx. Founder 1’s sons, ‘owner1’, ‘owner2’ and ‘owner3’ took over the business. The

company is currently owned by the three brothers and by owner1's son, Carlo. The third generation is represented by owner1, owner2 and owner3's sons and sons-in-law. Carlo feels he belongs to the second generation and will be considered as such for the purposes of this research. The commercial distribution of products is carried out through a wine shop and a commercial network in Switzerland. Cervo products are not exported.

