LUT University

The Dynamics and Complexity of Family Business Groups

Mukherjee Kajari, Rautiainen Marita, Pihkala Timo, Rosa Peter

This is a Final draft version of a publication

published by Palgrave Macmillan, Cham

in The Family Business Group Phenomenon

DOI: 10.1007/978-3-319-98542-8_8

Copyright of the original publication: © The Author(s) 2019

Please cite the publication as follows:

Mukherjee K., Rautiainen M., Pihkala T., Rosa P. (2019) The Dynamics and Complexity of Family Business Groups. In: Rautiainen M., Rosa P., Pihkala T., Parada M., Cruz A. (eds) The Family Business Group Phenomenon. Palgrave Macmillan, Cham

This is a parallel published version of an original publication. This version can differ from the original published article.

The Dynamics and Complexity of Family Business Groups

Kajari Mukherjee, Marita Rautiainen, Timo Pihkala and Peter Rosa

Introduction

Family businesses are some of the longest-lived organizations in the world (Landes 2006; Miller and Le Breton-Miller 2005; Ward 2004). Explaining their resilience, success and longevity has been a central issue in family business research since the 1980s. Mere depiction of the temporal development of a family business does not necessarily do justice to the complexities of the phenomenon. Essentially, over the years, a family business branches into myriad business and non-business organizations, with various legal forms and ownership patterns, along with periodic culling, as well as addition, combination and recombination. This transgenerational entrepreneurship (entrepreneurship across generations), produces messy, highly complex and dynamic business outcomes (that is to say, it produces business groups). These are defined as

> *sets of legally separate firms bound together in persistent formal and/or informal ways. The level of binding is intermediate between, and should be contrasted to, two extremes that are not business groups: sets of firms linked merely by short-term strategic alliances, and those legally consolidated into a single entity*. (Granovetter 2010, p. 429)

In mainstream family business studies, the firm is the main unit for business research and it is usual to conceptualize businesses as single firms with varying degrees of organizational complexity. However, from the point of view of the family in business, the concept of a business group is more appropriate, with its diverse set of businesses, variety of ownership patterns, cross-ownerships and common board memberships, and porous management arrangements (Fisman and Khanna 2004). Earlier approaches to studying family business groups have generally treated family businesses as single firms that have developed organically, rather than treating them as dynamic, and they have often considered them fragmented and opportunistically driven organizational forms. Issues like personal emotions and hubris, family bonds, entrepreneurial zeal, and experimentation play a dominant role in

the development of various organizational forms. Other issues that lead to decisions in a business group includes family/business identity, succession challenges, reputation and societal positions, using independent ownership to stave off succession challenges, safe-guarding and separating family wealth from publicly listed entities (that is, from a higher level of scrutiny), reaching out to society etc. Studying any family business group without understanding how and why decisions were made across time gives us an emasculated version of the business group. These decisions are based on rich interactions between various constituents of the business group. The richness of our understanding of the business group is likely to be better if we study it in terms of the continuously evolving relationship of the constituents.

Existing family business research has recognized that complexity, and even chaos, play a major role in the ownership and development of one or more family businesses (Gersick et al. 1997). The evolution of the business groups has an elusive reality that can be studied better using the epistemology of a complexity paradigm, as many experiments involving social groups 'are not repeatable or transferable, situations are historically evolved involving local co-evolving contexts and can potentially all be unique and lacking in any generic behaviours or laws' (Allen and Varga 2007, p. 19). To explain how such groups emerge and evolve as part of family business, we study these as *complex adaptive systems,* which are essentially systems comprising of constituents that self-organize and adapt to changes in their environments (Carlisle and McMillan 2006; Rautiainen et al. 2010). McKelvey (2004) explains that complex adaptive systems consist of a large number of elements, where the level of interaction is rich and dynamic, with loops in the interconnection between constituents, operating under conditions far from equilibrium and with shared histories. Such systems exhibit patterns at a long range, but the periodicity of such patterns cannot be predicted. Such features echo inherent characteristics of the interactions and dynamics of family members and family organisations in business over time. Due to the dynamic, non-linear interactions between large numbers of constituents, the system may have eddies of chaotic characteristics, whence predictability will not be evidenced in pattern or path.

In this paper we propose that family business group development is characterized by complex temporal dynamic interactions within and between family business subsystems (that is to say, between family, business and ownership). We study a detailed analysis of a multigenerational Finnish family

business group by painstakingly mapping the temporal dynamics of the business, and we posit that trying to simplify the business group (as was attempted early in the year 2000) leads to added complexity in other parts of the system. Rather, it has to be accepted as a system that is defined by the multiplicity of autonomous, heterogeneous constituents who make decisions about how to behave, and those decisions evolve over time and their non-linear interactions lead to the continuous evolution of novel arrangements where the whole becomes greater than the sum of its parts.

Family Business Group Complexity

It was only in the mid-2000s that awareness grew of the fact that many larger long-lived family businesses were business groups, many of which had a long and messy history (Mäkimattila et al. 2016; Rosa et al. 2014). In reality, a family business usually comprises of a diverse set of businesses, often owned and dominated by one or a few families (Granovetter 2010), bound together by equity cross-ownership and common board membership (Fisman and Khanna 2004) with significant family ownership or influence in its organization and management (Rosa et al. 2014). Diverse mechanisms are employed to bind the organizations in formal and informal ways. The creation, acquisition and divestment of multiple businesses by one or a team of family entrepreneurs translates into increased complexity in terms of governance, ownership and management over time (Dejung 2013; Mäkimattila et al. 2016; Rosa et al. 2014).

A family business group can be simply defined as a group of related, and/or unrelated, businesses owned and controlled by members of one or more families in formal and informal ways (Carney and Gedajlovic 2002; Cuervo-Cazurra 2006). The lack of awareness of the empirical complexity of multigenerational family businesses is understandable in that data sources for family business histories are imprecise, incomplete or even absent. It is difficult to obtain reliable data about family business temporal dynamics beyond the living memory of current owners – memories that are often selective and tend to simplify the past. To obtain a more complete picture, researchers have to rely on official records to map out and verify what businesses existed and were terminated during the stewardship of earlier family generations. This is usually only possible if independent data sources exist in the first place. Where this has been possible, such as in the Finnish case described in this paper, the scale of complexity can be overwhelming. Since 1872, the case family has built a large business group

of over 130 companies and subsidiaries, constantly evolving and changing as new start-ups and acquisitions were added, joint ventures and alliances were formed, new investments were made, and periodic restructuring and divestments were engaged in. The complexity of family ownership and management over this period has expanded as the number of family stakeholders has grown with each new generation. Using the ‘thick’ data collected during the course of our research, we aim to explain the evolution of family business groups, how they manage a state of equilibrium in face of many contending (and at times cross-purpose) goals and their piecemeal evolution into a very different configuration.

The complexity paradigm explains the behaviour of any system based on the relationship of the constituents of the system. A complex system consists of critically interacting autonomous agents, all of whom are potentially evolving, exhibiting emergent system properties, with an irreversible history and unpredictable future (Das and Mukherjee 2006). A complex adaptive system anticipates and learns, unlike other forms of complex systems. The constituents of complex adaptive systems adjust their behaviour to that of other constituents; in other words, constituents interact with, and adapt to, each other. Out of these interactions, novelty, spontaneity and creativity emerge – sometimes in unpredictable ways. The hallmarks of complex systems are adaptivity, self-organization and emergence (Ottino 2004). First, *adaptivity* means the ability of a system or its components to change themselves according to changes in the environment (Schut 2010). Adaptivity can be seen as an effort to optimize a system ridden with conflicting constraints – that is, ridden with paradoxes. Due to the interconnectedness of the variables, improvement in one aspect often causes decreased performance in other aspects (Kauffman 1995). Second, *self-organization* means the emergence of order at the system level without central control, solely due to local interactions of the system’s components. The basic ingredients of self-organization are positive and negative feedback loops, randomness and multiple interactions (Bonabeau 1999). Finally, De Wolf and Holvoet (2005, p. 3) suggest, ‘A system exhibits emergence when there are coherent emergents at the macro-level that dynamically arise from the interactions between the parts at the micro-level. Such emergents are novel with respect to the individual parts of the system.’ Such emergents support the notion that ‘the whole is more than the sum of the parts’ (Damper 2000, p. 813).

Research Methodology

Methodologically, investigating complexity in family business groups requires an in-depth understanding of how the system has evolved over time, based on the interactions of its constituents. The three main categories of constituents in such a system will be the business/businesses, the family/families and the owner/owners (Liz 1995); these interact, each having their own life cycle (Gersick et al. 1997). So, researchers have to look for data that show how each of these sets of constituents interact, based on the locally available information, and influence the behaviour of others, as well as that of the system as a whole, leading to co-evolution and feedback loops that further result in emergence, many times in most unpredictable ways. This requires an in-depth exploration of the history of the system, with rich data regarding the actual context of every change. A longitudinal single-case study approach helped us in exploring and interpreting how complexity unfolds in a family business group over time. We studied a family business group in Finland that illustrates a complex business and ownership structure, developed over 140 years. This study involved several types of data, including archival records, accounting reports and webpages. Semi-structured interviews were conducted with the two main owners: a non-family managing director and a non-family board member. As the case developed, family owners were contacted several times afterwards to check different details or contradictions in the case. In this paper, we present part of what is a much larger research project.

To understand the development of the business group, we tracked all the business start-ups, company takeovers and sales, joint ventures, business investments, company divisions and company closures. The evidence gathered suggested that changes occurred several times during the company's history. We had to choose a period where we could present the complexity in a clear way. To find the quintessential period, we analysed data from interviews, complemented with secondary data, in order to identify the major complexity and phases of the group evolution. As we explored the processes underlying change and development in the business group, we analysed the period between the years 2000 and 2010. This was the period when appropriate steps were taken to simplify the business group, but very soon it seemed to be evolving into a similar jumble of organizations as before.

The Empirical Setting

The history of the family conglomerate dates back to the 1870s, and for five generations the family has maintained their presence in different businesses. The family business group that we study started in the logistics business. As a country located in the northern part of Europe, Finland is dependent on imports and exports of goods. In addition, it serves as a transit country for eastbound transportation. Due to the location of Finland on the northern shore of the Baltic Sea, the majority of Finnish international trade is operated through shipping, with the majority of trade with Russia being operated using trains. The development of the westbound transit traffic from Russia has led to increasing opportunities for logistics businesses.

Today, the family has two separate business groups: a publicly listed corporation with several branches and a private, family-owned group, a limited holding company with different subsidiaries. The family has strong family ownership in both groups since, in addition to the whole of the private group being owned 100 % (in 2016) by the family, family members have an ownership share of about 70 % (2016) of the public corporation. This ownership is divided into individual ownership and ownership through family members' separate companies (companies under individual family members' ownership and not legally bound to other group structures). Through this ownership web, the family has a significant proportion of the decision-making power.

Throughout the family's history, the family has collected extensive experience in business group management. In the late 1990s, they had a challenging group structure with several companies which had grown too difficult to manage, and the number of companies belonging to the group continued to grow steadily. The situation is described by the non-family CEO:

> *When I was appointed CEO, this company was a messy pile of several companies where resources – instead of trying to get them from outside – were split up inside. At the end of the '90s we had three important industries: logistics, where we had seven different companies, a travelling business with several subsidiaries and a large aviation-ground handling business.*

The various forms of diversification led to underutilization of its internal resources, and the interrelationships and competition for the same capital resources led to conflicts between different companies. The problem did not only concern the top management of the family business group, but

was also recognized by the owners, with one family owner stating ‘Well, this portfolio – risk management – was difficult; I could not control it any more. We had to simplify it.’

The way to handle the complexity of the business group was to simplify the group structure by combining separate businesses (compare with Yiu et al. 2007). In 2002, the organization was grouped so that all the functions of the group were concentrated in a holding structure. Separate companies were turned into profit centres, and businesses were grouped into three different divisions (see Figure 7.1). The business group structure consisted of different types of businesses: a holding company with several subsidiaries, separate family companies and a family foundation. Ownership formed a complex web, consisting of both direct and indirect layered relationships. The arrows in Figure 7.1 illustrate ownership connections. The family consists of a fourth generation member (Family Member 1) and fifth generation members (Family Members 2, 3 and 4). Family Member 5 is the wife of Family Member 1 and together they own the separate company, Company 6. Family Member 1 mainly controls the family foundation. The holding company owns three different divisions (Companies A, B and C). The first division (Company A) included automotive logistics, railway transport, the timber business and clothing shipments. The second division (Company B) consisted of shipping functions, and the third division (Company C) included niche businesses.

<Insert Figure 7.1 about here>

Figure 7.1, Business group structure and ownership connections after first group restructuring in 2002

The company management tried to simplify the family business group, based on the homogeneity of industry segments, for example, shipping logistics, other logistics types and niche businesses. The non-family CEO outlined it:

> *We had to think what our strategy was, and we decided to exit from two industries and only concentrate on special logistics. So that management could be homogeneous and so we could coordinate the use of capital, we merged different businesses under one holding.*

Unfortunately, the reorganization of 2002 (Figure 7.1) led to negative outcomes vis-à-vis both family and ownership. During the 2002 reorganization, several companies were separated from the holding company. The family had long been interested in these businesses, and they did not want to sell

them to third parties; they wanted to preserve ownership of these businesses in the family (see the separate family companies, 1–5, in Figure 7.1). The companies were sold into family members' private ownership. However, the holding company still remained a minority shareholder in some of these companies (separate Companies 1 and 2). Additionally, the holding company made investments in non-family companies. As some businesses had been in the family for a long time, and they represented the family values and culture, the family saw it as important to keep these companies in their possession:

> *The family wanted to keep these businesses. My advice was to sell but the owners decided not to sell. They kept these businesses, but so that they were able to flourish, the family had to form different management structures and boards for these businesses.* (non-family CEO)

Although the board did everything they could, after a short time, the business group had again grown too difficult to handle. The governance structures partly overlapped between the family holding company and family members' separate private companies. Some businesses received more attention from the management than others, which was seen as unfair from the family's point of view as the businesses were not in an equal position. The management and lack of resources started to cause problems. The random interactions within the many businesses without central control started eroding the financial performance of the group.

> *We had three different same-size businesses, with turnover of approximately 40 to 50 million euros each, we had to make a decision as a family business. We did not have enough resources for all three, no intellectual and monetary resources, and there was also a huge transformation going on in these industry sectors. We needed to focus on one and sell the other two. When we did this the growth went from 30 million euros to 140 million euros.* (non-family CEO)

The situation was not easy because the family did not agree to sell the businesses to external investors. A broader business portfolio was also seen as an opportunity for long-term experience in different sectors; it offered an opportunity to exit from them if they were not able to provide added value to the group. At the end of the 2000s, the family business group had grown into a large web where governance operations and ownership structures were entangled. The group contained important companies (for example, industry leaders) where the growth had been rapid, but at the same time there

were companies that did not grow. Until then the assumption had been that the family business would emphasize flexibility and a rapid reaction if there were several smaller businesses to manage:

> *We started to think about the portfolio structure; we noticed that not all the companies were suitable for this portfolio – some were too small or too specialized.* (non-family board member)

Despite the efforts, the problems continued and the group structure caused problems in management and demanded too much capital investment. Efforts to redeploy resources and capabilities across the group were not working anymore. The need for stabilization was evident, but it was also challenging, as the family wanted their business to continue as a family business. They realized that it was time to think about completely different kinds of solutions for transforming the group, as the following quotations illustrate:

> *Well, at that point we started to think that the family company should be listed, but we also noticed that not all of the companies in the present portfolio were suitable for this public company.* (non-family board member)
>
> *We had several businesses there (in the group) which were too small; the family did not have enough capital for the development of those businesses, so we were thinking 'Let's go public. That's where the money is.'* (non-family CEO)

The board of the holding company clarified the policy and the strategy was that the group would be divided into two different structures: a publicly listed company and a private family holding company (see Figure 7.2). Two separate groups were formed. In 2008 a stock market listing was carried out through a reverse takeover. Companies were transferred between the two groups based on their synergies and the family's own interests, as well as being based on maintaining family control and ownership. The following quotations illustrate the situation:

> *It was done so that actually we didn't buy anything – we changed shares. In that way, we sort of come in through the back door there, and at the same time, we were able to cleanse the private family company of non-family owners.* (non-family board member)
>
> *In fact, loss of control was the reason why the company was split into two. It was difficult to manage the portfolio, so the family had to simplify the management structure. When they went public, they simplified it.* (non-family board member)

<Insert Figure 7.2 about here>

Figure 7.2, Business group structure and ownership connections after second group restructuring in 2010

Figure 7.2 illustrates the situation after the second group restructuring. There are now two different company structures: the public corporation and the private holding company. The number of companies had increased and the ownership had become more layered. The corporation forms a holding structure owning six different companies (Businesses A, B, C, D, E and F), each having their own subsidiaries with different holdings. The private family holding company has four different companies (Businesses 1, 2, 3, 4). In addition, it has started investing in new businesses, acting as the main shareholder in these companies (Investments 1, 2, 3, 4).

Ownership has become a complex web with several stakeholders with direct individual ownership and ownership through separate companies. Notable is the fact that the family has 100 % ownership in a private family holding business, but at the same time, through a complex ownership web, they own roughly 70 % of the publicly listed corporation. Paradoxically, even though the family 'sold' the public corporation, they hold a large equity stake in the business (Howorth et al. 2010). Although the owners say that the focus is the same in both business groups, they press the point that the public corporation is simpler, and the role of the private family holding is to be more timeless. The owners see ownership in the private family holding as being more closely tied to the family, and managed and controlled by family members. Family members also kept private, separate companies. When asked about the purpose of these companies, the family members pointed out that they were something they liked to do, and they also enable them to work closely in both groups (for example, as board members in both plc and Ltd groups) and be around when needed, as illustrated by the following quote:

> *If I were working somewhere else, it would be difficult to take part in the board meetings, and you know, there have been a lot of different situations when I had to be around. This is such a complicated package ... I have these two cakes: this bigger one – the whole cake – and this partial cake ... and I can juggle with them.* (family business owner)

As can be seen from the above, the simplification effort of the group structure formed a paradox from the managerial perspective. Simplifying the business structure led to growing complexity in the ownership structure of the group and separate businesses. Due to the close involvement of the family in the business, the remaining ownership ties started affecting the whole group. Business decisions were being clouded by family-related concerns.

Conceptualizing the case family business group as a complex adaptive system

Some of the hallmarks of a family business is that is has multiple goals (often at cross-purposes to each other), a long-run orientation and different parameters for success when compared to non-family firms (such as creating employment opportunities for family members and securing prestige in a community or in society). History, tradition and reputation play a strong role in family business, and the members of a controlling family or of controlling families (both owners and non-owners) influence goals and strategic direction, and in turn they influence the performance and survival of the business. The success of long-lived family firms is attributed to superior strategizing in the use of business and family resources (for example, familiness and socio-emotional wealth on the one hand, and an entrepreneurial long-term strategic orientation on the other) (Le Breton Miller and Miller 2006; Lumpkin and Brigham 2011; Lumpkin et al. 2010; Zellweger and Sieger 2012). Jaskiewicz et al. (2014) stated that entrepreneurial legacies are imprinted in children through active involvement in the family firm, which helps explain how family firms nurture transgenerational entrepreneurship.

A family business group comprises of family members (both owners and non-owners) and businesses (managed by family members and non-family professionals). At any point of time, the group is a result of the multifarious interactions of these constituents, each of whom operate based on his or her schema. The schemas take the form of entrepreneurial zeal, succession challenges, personal interest, hubris, business requirements and ownership pressures. Constituents keep on adjusting their behaviour to that of others, leading to the continuous emergence of the system, sometimes in unpredictable ways. All this results in a jumble of organizations with proliferations of cross holdings and presence in businesses that do not necessary make sense. Trying to simplify the business group in 2002 resulted in a variety of issues (as described above) as the simplification exercise took a rather rational view of the

situation and categorized the business group in the form of three companies (Companies A, B C – shown in Figure 7.1).

A wide range of motivations and rationales shape the pace, direction and growth of a business group (Rosa et al. 2014) and these do not necessarily follow a rational pattern. In other words, the family business group can be understood (and hence managed better) by conceptualizing it as a complex adaptive system where system behaviour is based on the relationship of its constituents. Literature on family business has found that the continuous change and evolution of business groups is a fallout of multiple processes that could be categorized as follows:

- **Entrepreneurial zeal**: This is indicated by the presence of a dominant entrepreneur who exploits new business opportunities and adds new products and value to an existing business; by a family entrepreneurial team, composed of several family members who create or acquire several related or unrelated businesses over time; and by a combination of family and non-family members who engage in entrepreneurial pursuits (Discua Cruz et al. 2013; Iacobucci and Rosa 2005).
- **A web of family ownership, based on the category of family relationship as well as on an increasing number of family members across successive generations**: Ownership can be held through 'different classes of stock, in an infinite variety of trusts, and by elaborate multigenerational combinations of large and small distributions' (Gersick et al. 1997, p. 30); ownership may vary over time in diverse permutations and may obey myriad objectives (Mäkimattila et al. 2016; Rosa et al. 2014; Westhead and Howorth 2007).
- **The challenges of succession**: This covers issues of succession, including the changing goals of succeeding generations as well as allowing newer generations to experiment and show mettle by creating and running new organizations. Some of the businesses may have complementarity; some may be totally novel. Businesses may get capital from existing business or from the private funds of the family.

- **Family involvement**: This considers how the nurture and extent of family involvement have a direct influence on strategic options, governance structures and financial returns (Randoy and Goel 2003).
- **The interrelated trajectories of businesses**: This involves linkages that span issues such as common ownership, directors, products/services provided, and financial or interpersonal ties between various organizations of the business group.
- **Cross-generational ownership and management issues**: This covers the involvement of several generations of a family in business and the arrangement of ownership and management between them.

The family as whole, as well as individual owners, makes choices about ownership, including covering issues of dilution as well as deciding which industries to enter/exit. These choices are guided by professional advice (for example, advice given by a professional, non-family CEO etc.) and by issues such as sentiment and family bonds. The various organizations of the business group are linked through common ownership, directors, the products/services provided and financial or interpersonal ties. Several generations are engaged as owners or managers, or both. Every action of each constituent is based on his or her perception of the immediate environment, his or her information about the system as a whole (that is, about the business group), his or her interaction with the environment and the behaviour of the system. This is known as his or her *schema*. A change in behaviour is linked to choices made by others, within the set of constraints under which the system operates. Connections and mutual dependencies among constituents lead to continuous change in the system as a whole, as well as to the co-evolution of its constituents. The constituents interact with a few others (that is, they interact partially) and this leads to feedback in the system: information, resources and energy/enthusiasm get fed back into the system. Some of the changes created are dampened out quickly, without making any lasting difference, whereas others push the system into a new state of complexity or even chaos. For example, if an ownership crisis occurs as a result of family business succession, then family conflicts complicate the ownership structure and decision-making approaches over time, specifically if the family group system is driven by the interests of specific owners at the expense of the whole group.

Every new organization in the system may be different, each with its own initial conditions and own rules, while at the same time, trying to comply with more general rules in the group. In the case study, all the companies had growth opportunities, the question was more about which investment to make in which company and in what order. Among all these interacting and co-evolving constituents, spontaneous configurations evolve – this is called *self-organization*. The essence of self-organization is that the system structure often appears without any external involvement due to internal constraints resulting from the interactions among consequents. The key to survival for a complex system is to develop rules which are capable of keeping an organization operating *on the edge of chaos* (Stacey et al., 2002) (that is, the system operates on the line between order and chaos, where complexity is maximal, yet order is somehow achieved). By remaining in such an intermediate zone, organizations may thrive despite the most prolific, complex and continuous change (Brown and Eisenhardt 1997).

The constituents of the presented case family business group included a large number of self-organizing components (that is, it is composed of owners, family members and managers) that seek to maximize their own goals but operate in the context of relationships with other components (Bonabeau 1999; Ottino 2004). To cater to multiple (and at times, conflicting) goals, the needs of ownership, of individual entrepreneurs of the family and those of the management to keep control have to be balanced. The structure of the business group, as a result, keeps on evolving in search of equilibrium. At times, complexity increases, pushing the system towards chaos with the danger that the family owners' and management's control over the system may be partly or completely lost. The family members, as owners, try to reduce complexity through steps like managing the organization structure, system and process, professional managerial help, control and adaption to changes (Granovetter 2010; Yiu et al. 2007); but such interventions may lead to a loss of entrepreneurial edge in the family and then to stagnation. That is to say, if a family business becomes too stable, it risks becoming conservative, stagnant and slow to adapt to changing conditions; if arrangements become too chaotic, the family and business system will be overwhelmed by change and may fail to react accordingly.

A complex system allows the system to adapt to its environment. In the presented case, simplifying the business led to growing complexity in the ownership structure of the group. Decisions related to entrepreneurship affected business performance over time. Due to the close involvement of

the family in the business, the ownership ties started affecting the whole group. Ownership dynamics stem from the different motives of owners and the growth of the business system. Complexity increases as ownership structures begin to cater for such diversity. Uncertainty and chaos may prevail if the family group system is driven by the interests of specific owners at the expense of the whole, or vice versa. However, deducing behaviour from rules is often not possible and this leads to paradoxes (that is, it leads to integrating conflicting constraints or interests) as the family has to accept that improvement in one aspect may lead to setbacks in other aspects (Fuller and Moran 2001; Kaufmann 1995).

Accepting the complexity of the family business group

The basic challenge in problem solving is defining the problem first. We opine that once researchers and decision-makers start conceptualizing a family business group as a complex adaptive system, they will realize that rather than negate the complex nature of the system (by trying to simplify it), they should start by embracing the complexity (Das and Mukherjee 2006). Considering complex adaptive systems theory as a framework for family business group research, we find that the three sets of interlinked interests (those of owners, family members and managers), responding to evolving business landscape in order to find an appropriate fit, give rise to a constantly changing pattern of ownership and group structure. We have traced this shifting pattern formation and evolution in the presented case, running over 140 years. By giving in-depth attention to a particular ten-year slice of this history (from 2000 to 2010), it was seen that all attempts to simplify the business group came to naught, as the system can only be understood through a lens of complexity. Thus, simplifying some subsystem of the business group may lead to complexity in other subsystems.

We contend that, through the complex adaptive systems framework, the highly interdependent development processes of a family business group can be approached and new models of long-lasting family businesses can be developed. Patterns can be evinced over a longer duration, as can the constituent’s schemas. This understanding can help in creating appropriate feedback loops, as well as helping in the coevolution of all constituents in such a way that the system reaches a relatively stable state. Our research indicates that another round of restructuring was done in 2010 when the group was divided into two different structures: the public corporation and the private holding company (see Figure

7.2). In this process, the companies were transferred between the two groups based on their synergies and the family's own interests, as well as being based on maintaining family control and ownership. In this sense, the case highlights the most typical characteristics of a family business, as the logics guiding the development of the group are not solely based on economic issues but also include the interests of the family and its members. These measures may be decisive for keeping the family members interested in the business and even maintain the entrepreneurial drive within the group. In this case, at this size and managed by hired non-family CEOs, the family members' participation in the daily operations and initiating new ventures is likely to be lowered dramatically (Chua et al. 2011). Instead, it seems that each of the family members is already guided by his or her own interests and separate entrepreneurial ventures that he or she is willing to associate with the family business group, making it thus more complicated.

Conclusion

In this paper we proposed that family business group development is characterized by complex temporal dynamic interactions within and between family business subsystems (that is, by the family, business and ownership). Our case study highlights the characteristics of a complex adaptive system within the family business group. Our analysis shows that even complex systems may have a subtle balance inherent in the interaction of their subsystems. That is, the family business group as a complex adaptive system seems to create significant levels of inertia against attempts to simplify the system or change the interaction mechanisms. We could suggest that, along with the general drivers of development, the system itself grows into an effective element to take into account when developing family business groups.

Taking a closer look at the dynamics of a family business group, it is evident that the owners and managers struggle with keeping the business group controllable, yet they seem to have different objectives for doing that. The owners are operating with a set of objectives and values that include issues other than economic issues. In some cases, the owners may act against the operative management's intention to simplify the group structure. At the same time, the management seeks to

simplify the group in order to make it operate more efficiently, to enable the growth of specific businesses. This paradoxical setting is an example of the dynamism inherent in the case study.

The fact that the family members are actively initiating new ventures and developing the group structure is an element that represents the entrepreneurship within the system. In that sense, the family members use the group for operating as entrepreneurs instead of merely disengaging from the active participation in the business. This characteristic is one demarcating family business groups from 'regular' business groups – that is, family business groups are entrepreneurial in nature. As entrepreneurial organizations, the inherent dynamics of the systems partly grow out of the partaking entrepreneurs (the family members), exploiting the resources, opportunities, networks and social capital vested in the family business group. The result of this is that the complexity of the group is bound to increase, again making it possible to encounter new possibilities for entrepreneurial ventures.

Our study raises three important issues to be answered in future research. First, it seems that the complex adaptive systems perspective works well for understanding the dynamics within family business groups. It is, however, still unclear how complexity emerges within the family business as it grows to include more ventures and more owners. To do this, we suggest that more studies are needed about different types of family business groups. Observing complexity characteristics in wider family business populations, quantifying the increase of complexity over time and modelling inter-relationships among individuals, subsystems and the system as a whole are necessary ingredients for understanding the emergence of complexity.

Second, more empirical evidence is needed on how some families have tried to manage the complexities. These studies would benefit from using the ideas gleaned from the complexity paradigm. Based on this study, it seems that there are three main ways to control the complexity of a family business group: 1) controlling the complexity of the family, 2) controlling the complexity of the business group and 3) controlling the complexity of the family's and the businesses' ownership. Identifying different methods or strategies in complexity management would be valuable for the development of managerial tools for family business groups.

Third, more research is needed about the differences between family business groups and 'regular' business groups in order to highlight the role of entrepreneurship in the emergence of the

business group. That is to say, these two neighbouring concepts would provide a fruitful setting for comparing the entrepreneurial and managerial approaches to the development of business groups.

References

Allen, Peter M. and Liz Varga. 2007. "Complexity: The co-evolution of epistemology, axiology and ontology." *Nonlinear Dynamics, Psychology, and Life Sciences,* 11(1): 19–50.

Bonabeau, Eric, Marco Dorigo and Guy Theraulaz. 1999. "*Swarm Intelligence: From Natural to Artificial Systems*." Oxford University Press, UK.

Brown, Shona L. and Kathleen M. Eisenhardt. 1997. "The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations." *Administrative Science Quarterly,* 42: 1–34.

Carlisle, Ysanne and Elizabeth McMillan. 2006. "Innovation in organizations from a complex adaptive systems perspective." *Emergence, Complexity and Organizations,* 8: 2–9.

Carney, Michael and Eric Gedajlovic. 2002. "The co-evolution of institutional environments and organizational strategies: The rise of family business groups in the ASEAN region." *Organization Studies,* 23: 1–29.

Chua, Jess H., James J. Chrisman, Franz Kellermanns and Wu Zhenyu. 2011. "Family involvement and new venture debt financing." *Journal of Business Venturing,* 26: 472–488.

Cuervo-Cazurra, Alvaro. 2006. "Business groups and their types." *Asia Pacific Journal of Management* 23: 419–437.

Damper, Robert I. 2000. "Editorial for the special issue on 'Emergent properties of complex systems: Emergence and levels of abstraction." *International Journal of Systems Science,* 31: 811–818.

Das, Ranjan and Kajari Mukherjee. 2006. "Complex Issues Management: Strategies & Tactics." Tata McGraw Hills.

Dejung, Christof. 2013. "Worldwide ties: The role of family business in global trade in the nineteenth and twentieth centuries." *Business History,* 55: 1001–1018.

De Wolf, Tom and Tom Holvoet. 2005. "Emergence versus self-organization: Different concepts but promising when combined." *Lecture Notes in Computer Science,* 3464: 1–15.

Discua Gruz, Allan, Carole Howorth and Eleanor Hamilton. 2013. “Intrafamily entrepreneurship: The formation and membership of family entrepreneurial teams.” *Entrepreneurship Theory and Practice,* 37: 17–46.

Fisman, Raymond and Tarun Khanna. 2004. “Facilitating development: The role of business groups.” *World Development,* 32: 609–628.

Fuller, Ted and Paul Moran. 2001. “Small enterprises as complex adaptive systems: a methodological question?” *Entrepreneurship & Regional Development,* 13: 47–63.

Gersick, Kelin E., John A. Davis, Marion McCollom Hampton and Ivan Lansberg. 1997. “*Generation to Generation: Life Cycles of the Family Business*.” Boston, MA: Harvard Business School Press.

Granovetter, Mark. 2010. “Business groups and social organizations.” In N. Smelser and R. Swedberg (Eds), *The Handbook of Economic Sociology*: pp. 429–450. London: Sage.

Howorth, Carole, Mary Rose, Eleanore Hamilton and Paul Westhead. 2010. Family firm diversity and development: An introduction. *International Small Business Journal,* 28(5): 437 – 451.

Iacobucci, Donato and Peter Rosa. 2010. “The growth of business groups by habitual entrepreneurs: the role of entrepreneurial teams.” *Entrepreneurship Theory and Practice,* 34: 351–377.

Jaskiewicz, Peter, James G. Combs and Sabine B. Rau. 2014. “Entrepreneurial legacy: Toward a theory of how some family firms nurture transgenerational entrepreneurship.” *Journal of Business Venturing,* 30: 29–49.

Kauffman, Stuart A. 1995. “Escaping the red queen effect.” *The McKinsey Quarterly,* 1: 118–129.

Landes, David S. 2006. “*Dynasties: Fortunes and Misfortunes of the World´s Greatest Business Families*.” New York: Viking Penguin.

Le Breton-Miller, Isabelle and Danny Miller. 2006. “Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability.” *Entrepreneurship Theory and Practice,* 30: 731–746.

Liz, Reginald A. 1995. “The family business: toward definitional clarity.” *Family Business Review,* 8: 71–81.

Lumpkin, Tom G. and Keith H. Brigham. 2011. "Long-term orientation and intertemporal choice in family firms." *Entrepreneurship Theory and Practice,* 35: 1149–1169.

Lumpkin, Tom G., Keith H. Brigham and Tod W. Moss. 2010. "Long-term orientation: Implications for the entrepreneurial orientation and performance of family businesses." *Entrepreneurship and Regional Development,* 22: 241–264.

McKelvey, Bill. 2004. "Toward a complexity science of entrepreneurship." *Journal of Business Venturing,* 19(3): 313–341.

Miller, Danny and Isabelle Le Breton-Miller. 2005. "*Managing for the Long Run: Lessons in Competitive Advantage from Great Family Businesses."* Boston: Harvard Business School Press.

Mäkimattila, Martti, Marita Rautiainen and Timo Pihkala. 2016."Systemic innovation in complex business portfolios – a case study." *International Journal of Business Innovation and Research,* 10: 363–379.

Ottino, Julio M. 2004. "Engineering complex systems." *Nature,* 427: 339.

Randoy, Trond and Sanjay Goel. 2003. "Ownership structure, founder leadership, and performance in Norwegian SMEs: Implications for financing entrepreneurial opportunities." *Journal of Business Venturing,* 18: 619–637.

Rautiainen, Marita, Timo Pihkala and Markku Ikävalko. 2010."Family business in family ownership portfolios." *International Journal of Entrepreneurial Venturing,* 1: 398–413.

Rosa, Peter, Carole Howorth and Allan Discua Cruz. 2014. "Habitual and portfolio entrepreneurship and the family in business." In L. Melin, M. Nordqvist and P. Sharma (Eds), *The SAGE Handbook of Family Business.* London: Sage.

Schut, Martijn C. 2010. "On model design for simulation of collective intelligence." *Information Sciences,* 180: 132–155.

Stacey, Ralph D., Douglas Griffin and Patricia Shaw. 2002. *"Complexity and Management: Fad or Radical Challenge to Systems Thinking"* London: Routledge.

Ward, John. 2004. "*Perpetuating the Family Business: 50 Lessons Learned from Long-lasting, Successful Families in Business."* Basingstoke: Palgrave MacMillan.

Westhead, Paul and Carole Howorth. 2007. "Types of private family firms: an exploratory conceptual and empirical analysis." *Entrepreneurship & Regional Development,* 19: 405–431.

Yiu, Daphne, Yuan Lu, Garry D. Bruton and Robert Hoskisson. 2007. "Business groups: An integrated model to focus future research." *Journal of Management Studies,* 44: 1551–1579.

Zellweger, Thomas and Philip Sieger. 2012. "Entrepreneurial orientation in long-lived family firms." *Small Business Economics,* 38: 67–84.

Figure 1

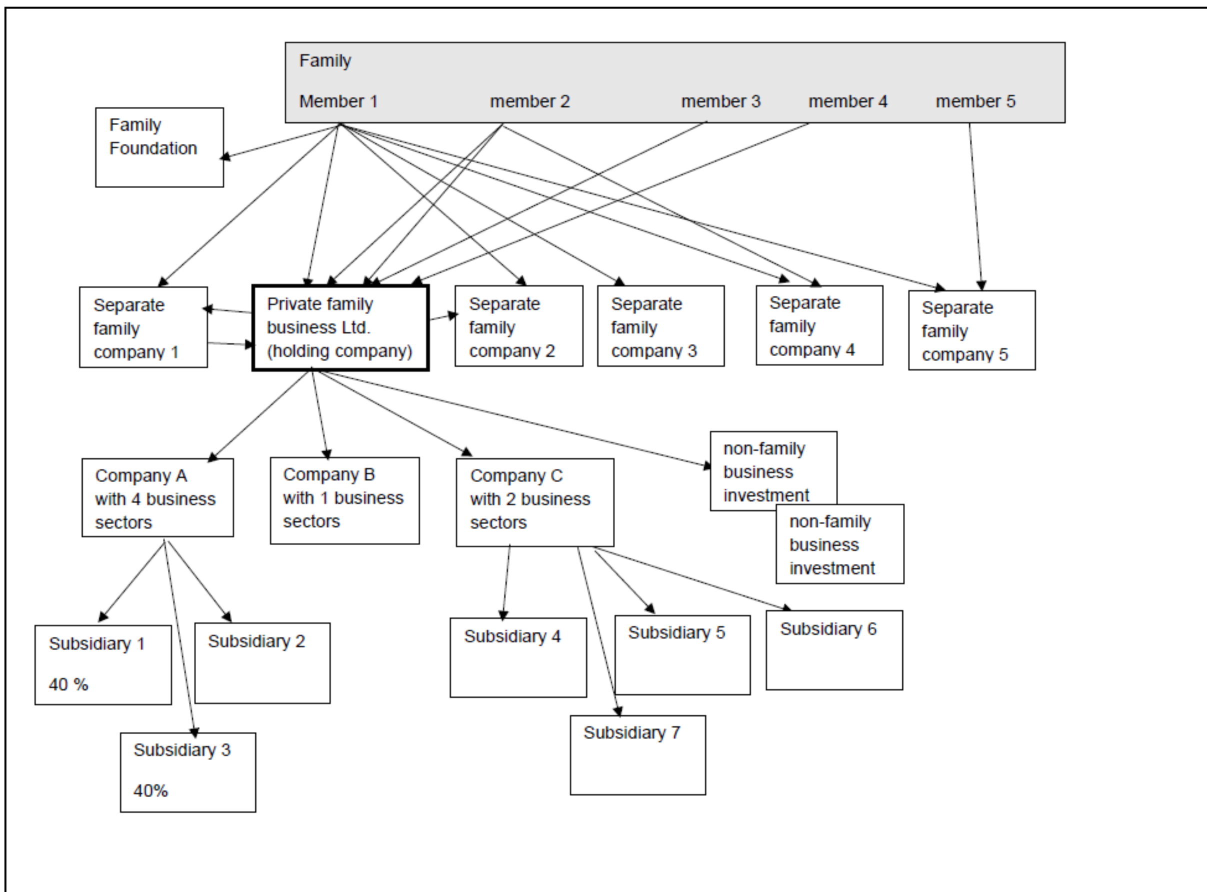

Figure 2