1. Introduction. Innovation beyond national system fragility: institutional bricolage for SMEs' growth

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1.1 STUDYING THE GROWTH OF HIGH-TECHNOLOGY-BASED FIRMS IN AN ECONOMY THAT IS NOT GROWING

A book that has the ambition to understand how entrepreneurial and small firms grow by analysing a series of cases of Italian high-technology-based firms may seem odd, eccentric, and at the very least, badly timed.

Economic commentators often look at the situation of Europe as 'the world's biggest problem' (*The Economist*, 2014) due to the never-ending financial turbulences of the public finances of the states and the tensions in the Eurozone (*The Economist*, 2015a), as well as its inability to be as innovative as the other great World regions. Data show that the European economy has lost position compared to the USA – between 2005 and 2013, its GDP has grown by 5.7 per cent, compared to an increase in 10.4 per cent of the American GDP (Eurostat, 2015a); also, in 2015 and 2016, the Euro-zone is projected to grow less than the other advanced economies (IMF, 2015).

In this gloomy context, Italy seems even less generous in terms of opportunities for business. According to many socio-economic indicators, the effects of the global crisis that exploded in 2008 hit Italy more severely than most of the other countries of the European Union: Its GDP fell by 5 per cent between 2005 and 2013 (Eurostat, 2015a), the employment rate fell to 59.9 per cent, a value that is 10 per cent lower than the EU average (Eurostat, 2015b), and the share of people at risk of poverty and social exclusion grew from 25.3 per cent in 2008 to 28.1 per cent in 2014, while the ratio has remained substantially stable at lower levels in countries such as Germany, France and the United Kingdom (Eurostat, 2015c).

However, it is safe to say that the crisis did not cause the problems that Italy is still experiencing, but has amplified some long-term fragilities that characterise its industrial system. Compared to other developed economies, Italy presents a clear specialisation in low-to-medium technology industries, a prevalence of micro-enterprises – often informally managed – and a relatively weak institutional framework. Not surprisingly, despite some encouraging signals, such as an expected growth in the GDP of 0.8 per cent in 2015 and 1.3 per cent in 2016 (IMF, 2015), the Italian economy is still more vulnerable than those of the other major European countries (*Financial Times*, 2015).

This book does not present a ‘success story’ – neither a story in which a country has purposely designed or emergently developed strong institutions that fuel the global competitiveness of its firms, nor one in which heroic entrepreneurs fight against an adverse fate and turn the conditions in their country to the best. Rather, the firms that we study portray all of the contradictions of pursuing a bold vision of growth in the rough seas of an institutional setting that probably offers more constraints than opportunities. The innovation and growth patterns that they undertake are not fully explained by the exploitation of the resources that are available in their proximate environment, and the setbacks in this process are not fully explained by the fact that firms do not control the resources necessary for innovation. Structural conditions only partially explain growth: indeed, even in an adverse environment, growth-oriented firms may craft strategies that allow them to grow (Bamiatzi and Kirchmaier, 2014). This book puts forward that growth is the outcome of an equifinal process that involves a reaction to favourable or unfavourable local environmental conditions, or an exploratory search for necessary resources that are available in distant environments, or the proactive co-creation of such resources within the system in which a firm is embedded.

Such conceptualisation advances our understanding of the relationship between the firm and its environment in the process of innovation, and offers important insights to policymakers to enable them to design their interventions and address the interrelated issues of industrial competitiveness, employment, environmental sustainability and economic growth. Rather than discussing the option of ‘de-growth’, this debate considers the policies, the technologies, the industries and the firms that should characterise the post-crisis model of economic growth (Urhammer and Røpke, 2013).

1.2 GAZELLES, UNICORNS AND OTHER SPECIES: WHAT IS THE CONTRIBUTION OF START-UPS?

It is almost natural to think of small firms and young firms as key actors in these processes. To this purpose, Nightingale and Coad (2014) recommend caution in appreciating their role, as they document the patterns of an increasingly positive interpretation of the benefits of entrepreneurship as one moves from analysis to policy. Indeed, the academic debate has the merit of revealing that there is not a simple answer to this issue: conflicts between theoretical expectations, common sense assumptions and empirical reality are abundant (Coad et al., 2014). Moreover, the very concept of ‘firm growth’ has found heterogeneous understandings in the academic literature, in policy discourse and in the popular media (Brännback et al., 2014). As a consequence, the reflection concerning the practical and policy recommendations to foster stronger firms is underdeveloped and inconclusive (Wright and Stigliani, 2013).

For instance, the well-known Schumpeterian notion of ‘creative destruction’ suggests that new, small firms should be the engine of innovation and industrial renewal. While Birch (1979) found that, in the United States, small firms were job creators, more recent studies contradict these findings (Neumark et al., 2011), emphasising the contribution of young firms, rather than small firms (Haltiwanger et al., 2013). Acs and Audretsch (1990) found that the innovative contribution of small firms is prominent in product-oriented, less capital intensive industries; more recently, Rosenberg and Steinmueller (2013) pointed out that a more tangible contribution to innovation is brought by the aggregate effort of the large majority of firms realising incremental advances. Overall, the contribution of small firms to the economy is controversial.

The concerns regarding the economic impact of small firms stem from the fact that most of them do not grow (Maidique, 1986); therefore, attention has been directed towards the understanding of those that reach very high growth (e.g., Davidsson and Henrekson, 2002; Delmar et al., 2003; Acs and Mueller, 2008). High-growth firms are defined as those that, having at least ten employees at the beginning of the observation period, achieve a level of annualised growth of revenues and employees above 20 per cent over a 3-year period. A special group within high-growth firms is represented by ‘gazelles’, that is, those that are less than five years old (Eurostat-OECD, 2007). Evidence shows, however, that high-growth firms are not only SMEs: They are found in any-sized class (Mazzucato and Parris, 2015). More recently, another category of firms has gained popularity among scholars and analysts: It is the case of ‘unicorns’, that is, young, private firms that have a market valuation of at least \$1 billion

(Brown and Wiles, 2015; *The Economist*, 2015b). These firms are, needless to say, even more uncommon.

Not only is predicting which firms will achieve high growth extremely difficult, but being a ‘high-growth firm’ is a transitory state: Mazzucato and Parris (2015), in a longitudinal study of the US pharmaceutical industry, found that individual firms remain in this category for a very short time: 50 per cent of them last for two years or less. These results confirm the findings by Hölzl (2014), who found that high growth firms have a small probability of persisting in their trajectory after three years of accelerated growth, while Mohr et al. (2014) found that firms experience a slowdown or even a retreat after the growth period. Furthermore, growth entails several dimensions, and great attention should be paid to the linkage between these dimensions and profitability (Brännback et al., 2014).

The relationship between innovation and growth is also very complicated (Verspagen, 2005). While some studies have found a positive relationship between firm spending on R&D and firm growth (Del Monte and Papagni, 2003), others have found no significant impact (Almus and Nerlinger, 1999). High-growth firms typically do not operate in high-technology industries (Hölzl, 2009; Henrekson and Johansson, 2010), although they are active in creating new knowledge, especially in the proximity of their existing competencies (Coad and Rao, 2008; Colombelli et al., 2014).

These studies teach us that there is no guarantee that the condition of being a small, young or high-tech firm translates into superior growth of revenues or employment, and therefore, into a contribution to the wealth of an economic system. Growth is not automatic, and firms should define a strategy to pursue this goal.

1.3 SEEKING THE PATTERNS OF FIRM GROWTH

Research on business growth has produced a very large amount of empirical work and numerous attempts of theoretical modelling, as highlighted by several reviews (e.g., Ardichvili et al., 1998; Gilbert et al., 2006; Coad, 2007). Multiple disciplinary perspectives have been adopted in the study of the phenomenon.

Studies in the field of economics tend to adopt a ‘stochastic’ approach to business growth, which is analysed at the industry level or at the level of the whole economy. According to this perspective, which substantially follows Gibrat’s (1931) ‘Law of Proportionate Effect’, a very large number of variables account for business growth or decline, and taken together

and on the aggregate level, they act randomly on the sizes of firms. This perspective finds support in the large unexplained variations in growth performance in many studies and in the very weak serial correlation of business growth rates (Dunne and Hughes, 1994; Hart, 2000).

Focusing on the strategic management and organisational literature, the majority of the empirical studies adopting a company-level point of view assume a deterministic perspective, attempting to identify causal factors, in the form of sets of explanatory variables, which account for a large part of the variance in business growth rates. These factors can be grouped in four broad categories (Smallbone and Wyer, 2000; Dobbs and Hamilton, 2007): (1) environmental/industry-specific factors; (2) structural characteristics of the firm; (3) characteristics of the entrepreneurs; and (4) business strategies.

Environmental and industry-specific factors are analysed as major sources of external constraints and opportunities for growth (Wiklund and Shepherd, 2003; Clarysse et al., 2011a). The explanations concentrate on the effects of the geographical location and of the scientific and technological environment (Saxenian, 1994; Lechner and Dowling, 2003) on the industry context – in terms of capital requirements, level of competition (Baum et al., 2001), dynamism, heterogeneity, and lack of price hostility (Zahra and Bogner, 2000), on the availability of external support through finance, and particularly venture capital (Colombo and Grilli, 2010) and business services (Colombo and Delmastro, 2002), and on the institutional origin of the new venture (Clarysse et al., 2011a; Wennberg et al., 2011).

The most investigated structural characteristics of the firm have been age and size (Storey, 1994); these variables also have been widely explored from the population ecology perspective (Hannan and Freeman, 1977). Overall, the studies that have focused on the relationship between size and growth have found a significant effect of size, but the sign and magnitude of the effect itself varies. The arguments and evidence are also mixed for the growth effect of age. Stinchcombe (1965) held that young firms suffer from the ‘liability of newness’, which makes them unable to compete effectively against large organisations. On the other hand, younger firms may be able to grow faster because they are more entrepreneurial than older firms and may also hold a ‘learning advantage of newness’ over larger firms, thanks to more flexible working environments and less rigid routines and organisational systems (Autio et al., 2000).

The characteristics of entrepreneurs have also been widely investigated. The underlying assumption of these approaches is that, due to the small size and low levels of formalisation, the influence of business leaders has a direct impact on the growth orientation of the business (Daily et al., 2002). Through their personal characteristics, the founders

exert an imprinting effect that influences the culture and behaviour of the organisation. The traits that have been observed more frequently are: educational background, training and previous experience (e.g., Eisenhardt and Schoonhoven, 1990; Baum and Locke, 2004). These traits have been associated with entrepreneurial motivation and attitudes towards growth (Baum et al., 2001; Wiklund and Shepherd, 2003). Empirical observation suggests that entrepreneurs' growth motivation, communicated vision and goals have direct effects on their firms' growth (Wiklund et al., 2003; Baum and Locke, 2004).

Entrepreneurs are also responsible for the activation of business-level strategies consistent with growth objectives. Relevant strategies that have been examined in association with growth refer to: employee recruitment and development (Robson and Bennett, 2000), product-market development, with particular reference to differentiation, innovation and entry into new markets (Littunen and Tohmo, 2003), internationalisation (Autio et al., 2000), and inter-organisational collaboration (Street and Cameron, 2007).

In line with the deterministic perspective highlighted in the previous points, a large body of research is also devoted to the development of models of business growth through stages (e.g., Steinmetz, 1969; Greiner, 1972; Churchill and Lewis, 1983; Scott and Bruce, 1987). Usually these models do not explain what causes a business to grow, but focus on how a business should internally adapt in order to continue its expansion.

But what actually constitutes a process of 'business expansion'? Traditionally, a distinction has been made between internal growth and external growth.

In the first case, the firm is seen as a collection of resources (Wernerfelt, 1984) and organisational routines that fuel the growth process, interpreted mainly as growth in size around the core organisational assets (Penrose, 1959). In the second case, the firm seeks growth through a strategy for the extension of its boundaries, usually through mergers and acquisitions, and often with the goal of fully exploiting its underutilised resources (Lockett et al., 2011).

A third mode of expansion can be identified in the building of enduring inter-organisational relationships. According to this approach, business growth is the result of strategic choices that aim not only at reinforcing the internal resources and assets of companies, but also at gathering the opportunities and neutralising the threats of the external environment (Pfeffer and Salancik, 1978) through network forms of organisation generated by inter-organisational relationships in many different forms: strategic alliances, joint ventures and partnerships (Gudergan et al., 2012; Albers et al., 2013).

Given the multiplicity of issues linked to business growth, an encompassing framework is needed to capture the multilevel drivers of the phenomenon. Recent work in the field of entrepreneurship offers insightful suggestions (Welter, 2011; Zahra and Wright, 2011).

According to these studies, entrepreneurship is a situated process embedded in contexts whose mobilisation and structuration depends on the actors' actions and social practices. Moreover, contexts are mobilised and opportunities are recognised and exploited by entrepreneurs through actions and practices that leverage their social relationships. In a similar vein, other contributions portray purposive action as a necessary condition for entrepreneurial growth (Penrose, 1959; McMullen and Shepherd, 2006; Bird and Schjoedt, 2009). In particular, Pitelis and Pitsa (2012) argue that:

entrepreneurs (whether individuals or teams) can be viewed as economic agents who aim to appropriate (capture) value from their perceived-to-be value creating advantages, action and action potential, through the use of existing markets, the exploitation and creation of market failures, the creation of market failures (such as monopoly), and, when necessary, the creation and/or co-creation of organisations, markets and supporting ecosystems. (Pitelis and Pitsa, 2012, p. 6)

This view suggests that an important connection exists between institutional contexts, entrepreneurial action, and business growth (e.g., Bruton, Ahlstrom and Li, 2010; Tracey et al., 2011).

1.4 FIRMS DO NOT JUST DECIDE TO GROW: THE BOUNDING ROLE OF INSTITUTIONS

A large body of research has highlighted the important role of institutions, simply defined as the rules of the game, in influencing firms' decisions and strategies (Hall and Soskice, 2001), organisational structures, and economic trajectories. For example, the varieties of capitalism frameworks concentrate primarily on institutions such as the corporate governance model, the ownership structure of firms, inter-firm relationships, financial institutions and the functioning of the labour market. Within this stream of literature, several studies have shown that countries that adopt different models of capitalism tend to have differences in their economic performance. Market-based and bank-based systems, outsider and insider systems, liberal market economies and coordinated market economies are just a few of the models identified in the literature by focusing on one or a few of the institutions at play. Comparative institutional analyses show that a country's institutions affect its comparative advantage in some

activities and not others, therefore influencing its performance and the trajectories of its evolution.

Similar results are found in the national systems of innovation literature. The approach is rooted in the works of Friedrich List, a German economist of the nineteenth century, and in the evolutionary approaches of Schumpeter. A national system of innovation, to properly affect the rate and direction of technological change, requires the institutions and economic structures present in a country both to be efficient and to form a coherent system. According to this approach, the labour market, the financial system, and education and research institutions are all elements that jointly influence and contaminate firms' innovation processes and can explain countries' systematic differences in terms of economic performance. Countries such as the US and the UK – featuring a flexible labour market, easy business entry and exit, and strong education and research institutions – are shown to present comparative advantages in the high-tech sectors, while other countries, such as Germany and Japan – with more rigid institutions and relation-based networks – prove to excel in sectors characterised by incremental innovations and growth processes that proceed along established trajectories.

Most of the empirical analyses carried out on the basis of the above-mentioned approaches have ranked Italy among the lower performing countries: For instance, the country occupies the 43rd position in the World Economic Forum's Global Competitiveness Index 2015–16, lagging far behind all of the principal European economies – such as Germany (4th), Great Britain (9th), France (22nd) – and several emerging and developing countries, despite a gain of six positions in one year. Also, the 2015 Innovation Union Scoreboard classifies Italy as a 'moderate innovator', with a score on the Summary Innovation Index, which covers 25 dimensions, which is about 20 per cent lower than the EU average. Again, all of the other big European economies have a better ranking, with Germany characterised as an 'innovation leader' and France and Great Britain as 'innovation followers' (European Commission, 2015).

Explanations for such a poor performance are often found in the presence of inefficient institutions, which play an insignificant role in supporting innovation. For example, Tylecote and Visintin (2008) include Italy in the State–Family group, with some opportunities to succeed only in the low or medium technology sectors, due to rigidities in the labour market, the underdeveloped financial sector – particularly the absence of functioning venture capitalists – the over-presence of the public sector in the economy, and low dynamism in university–industry relations. Indeed, the World Economic Forum suggests that Italian competitiveness is depressed by deficiencies in terms of 'basic requirements', such as the institutional

environment and the macro-economic conditions, and ‘efficiency enablers’, such as labour market efficiency and the development of financial markets. Italy ranks below 100th position in these four performance dimensions, while its standing in terms of ‘innovation and business sophistication factors’ – which include the development of clusters, quantity and quality of local firms, and breadth in the value chain – is relatively better, although still less satisfactory than the main European countries. Indeed, the inefficiency of the government bureaucracy, high tax rates and the complexity of tax regulations, access to financing, and labour regulations rank high among the most problematic issues for the business sector (WEF, 2015).

Moreover, Italy seems to be characterised by an informal approach to innovation. For example, in 2013, the gross domestic expenditure for R&D reached 1.26 per cent of the GDP, a value that, although it has been growing since 2007, is lower than the European average of 2.01 per cent (Eurostat, 2015d); in particular, the business sector invests about one half of the European average in R&D (European Commission, 2015). Also, its human capital is comparatively scarce: As of 2014, only 23.9 per cent of people aged between 30 and 34 have attained a tertiary education degree, compared to, for example, 47.7 per cent in Great Britain (Eurostat, 2015e). More importantly with respect to innovation dynamics, the indicator relative to the number of new doctoral graduates, although growing, is still 11 per cent lower than the European average; by contrast, Germany produces 50 per cent more new doctorates than the average. Not surprisingly, such an informal approach to innovation does not lead to patent applications, whose index is about half of the European average, and even less to revenues from patent licenses (European Commission, 2015).

This does not mean that Italian firms are not producing innovation effort: Its SMEs are committing themselves to products, processes, and organisational innovations; however, they typically carry out in-house innovation projects without the support of collaborations with other firms or public institutions. This is a striking contrast to Germany: In its case, SMEs are strong in-house innovators, but they strongly rely on partnerships with other firms (the indicator is 12 per cent higher than the European average) and the public sector (46 per cent more than the average). This innovation model translates into a higher intensity of patenting, international revenues from licences, and exports of medium-high technology products and services. In Italy, instead, the innovative effort of SMEs does not lead to competitive products that are appreciated by the market, as is suggested by the lower-than-average value of sales of new-to-the-market innovations (European Commission, 2015).

These elements of weakness can also be related to the industrial structure of the country. Italy has the highest number of SMEs in the

European Union (more than 3.5 million, corresponding to 17 per cent of the total). As in any country, micro-enterprises represent the lion's share of the industrial system; however, in Italy, their presence is more pronounced than in other countries. This structural characteristic is worrisome, because larger firms can exploit economies of scale and scope, and therefore, experience higher levels of productivity. Data presented in the Annual Report on European SMEs (European Commission, 2014) show that, both in manufacturing and high-technology industries comprising 'professional, scientific and technical services' and 'information and communications technologies', value-added per employee increases according to increasing firm size. Interestingly, Italian manufacturing firms with between 50 and 249 employees are more productive than larger firms and more productive than those in the other major European economies, but they account for only 2.1 per cent of the total, versus, for example, 7.1 per cent in Germany. Instead, in high-technology industries, Italian firms do not register a higher value-added per employee than other countries in any size class of SME; again, we find that the gap is particularly pronounced for micro-firms, and it becomes narrower and narrower as the firm size grows.

1.5 HOW TO INNOVATE AND GROW IN AN UNFAVOURABLE ENVIRONMENT

If the picture is so dark, are there firms that successfully grow and innovate?

As will be shown in the remainder of the book, there are companies in Italy that are following successful trajectories of growth and innovation. The explanation for this phenomenon can be found in two sets of approaches. The first, which includes the regional innovation systems (Breschi and Malerba, 2001) and the sectorial innovation systems (Breschi and Malerba, 1997), traces the borders of the systems apart from the national borders, and highlights the existence of bundles of institutions that can operate as valid supports to businesses, even if those same businesses are located in countries that are characterised, on average, by inefficient institutions (for similar arguments, see also Crouch, 2005; Parker and Tamaschke, 2005; Schneiberg, 2007; Lane and Wood, 2009; Lange, 2009). The second set of approaches leverages the idea that the relationship between companies and institutions is not deterministic. Companies differ in their interactions with and use of local institutions, and can rely on institutions located in different countries through a process that in the literature has been defined as institutional outsourcing (Lange, 2009; Schneider et al., 2010; Allen and Whitley, 2012).

The case studies presented in this book show that not all of the companies are passively influenced by the surrounding institutions. Some of them proactively stretch their reach to distant bodies when institutional components are missing in the existing referent system. In other words, while the vast majority of the companies find support or obstacles in the clearly identifiable geographical or sectorial systems, as described in the literature, other companies appear to act as creators of their own systems, mixing and matching the modular blocks that prove to be necessary to pursue a strategic goal. Some companies appear to be at the centre of their systems and actively shape their functioning and borders. Indeed, our evidence goes so far as to suggest that the globalisation of the markets and the diffusion of knowledge and information about business opportunities allow companies to develop their strategies and business models so as to incorporate elements operating far from their systems of origin, through real processes of institutional enactment (*à la* Thompson) or outsourcing.

1.6 THE STRUCTURE OF THIS BOOK

In this book, we aim at providing evidence for the dialectic relationship between the institutional context and the actors as the main driver for entrepreneurial growth. Through a number of in-depth, often longitudinal, case studies of organisations located in different regions of Italy, the authors thoroughly illustrate both the functioning and fundamental role of local institutions in overcoming the limits of the national system and the peculiar characteristics of high-technology-based firms that operate as the orchestrators of their systems.

The chapters in this volume are organised, according to this evolutionary framework, around three main pillars: the institutional context, which provides opportunities and constraints; the actors, who are influenced by, and (at the same time) enact their institutional environments; and the strategies, which describe the actual behaviours and purposive actions by the actors, that are aimed at the co-creation of the markets and the surrounding institutions.

Part I The Context

The first part of the book comprises three chapters focusing primarily on the role of local contexts in influencing the success and growth of start-ups and academic spin-offs operating in the high-technology sectors.

Chapter 2, by Pucci and Zanni, covers the case studies of two start-ups operating within one of the best functioning innovation parks in Italy,

with its premises in Tuscany, precisely in Siena. What emerges from the cases is the significant role played by the local institutions, both in supporting the initial development of the start-up and in operating as a bridging platform towards other actors and institutions, particularly in terms of image, relationships, and professional competencies. The weakness of the Italian system in terms of sources of risk financing is overcome through the identification of an external actor, that is, a foreign company. The latter controls a business in the park (incubator) from a previous operation, and over the years, it has built strong ties, based on a mutual understanding of business culture and behaviour, processes and procedures, and trust. The local system has therefore operated as a solid base upon which the entrepreneur could strengthen the crucial relationship that triggered the significant growth of the past few years. Thus, well-functioning local systems appear to operate as launch platforms, or fertile grounds, around which companies can build individual systems made up of local functioning institutions, which are complemented by foreign modules that are searched for and activated when similar actors are not available locally.

But how do successful entrepreneurs develop their relationships? Chapter 3, by Comacchio, Bonesso and Finotto, analyses, in depth, the process of network formation. By studying three cases of start-ups operating in the software, renewable energies, and aerospace sectors, the authors highlight those factors that appear to distinguish the process of network formation by high-potential and high-growth entrepreneurs. While the existing literature stresses the homophily component of individual ties, namely the tendency to connect to actors who are similar in culture or other demographic characteristics (typically arising from conditions of proximity), the longitudinal account of the relationship decisions of the leading teams in the cases presented in the chapter shows a specific search for actors showing both scope and depth task complementarity. In particular, the leading teams share a peculiar ability to define their business concept in terms of tasks, regardless of the available resources, and in scouting the extended environment to identify close or remote actors (companies, universities, financiers) that are suitable to fulfil them. The limits of the national system may not represent a significant obstacle to growth and success if the entrepreneurs develop their networks by activating those institutions with which they can form a perfect combination to complete the business concept. Indeed, even a well-developed system may not include the modular blocks that a company needs to complete its business concept. Further, the external actors/institutions themselves appear to contribute to the transformation and evolution of the business concept in previously unpredictable ways, thereby amplifying the innovative potential.

Further, as thoroughly explained by Giacomini, Muzzi and Albertini

in Chapter 4, entrepreneurs who carry out radical types of innovation operate, themselves, as institutional entrepreneurs by influencing the goals, scope, and processes of existing local institutions. As shown by the authors through four case studies of start-ups and university spin-offs operating in the biomedical sector in the Brescia area (Lombardy), not only are entrepreneurs' cognitions strongly influenced by the local context, but the evolution of those cognitions, as a consequence of the entrepreneurial process, loop back to transform the context and the operating institutions. Further, contrary to the typical Italian way of doing business, high-growth entrepreneurs, during the start-up phase, transcend the close links with families and friends, and rely extensively on professional networks, which are intrinsically wider and more porous to various sorts of influence than those made up of close ties. 'The more effective relationships are not personal (family and friends), but professional ones. This is the central aspect of our findings, as it implies strong discontinuity with the family model of traditional start-ups' (p. 94).

Part II The Actors

The second section of this book comprises four chapters focusing on the top management teams of high-growth companies, which are the actors whose agency is bound by the contextual constraints, but also pursue autonomous choice.

The first chapter, Chapter 5, by Antonelli, Berni and Consiglio, which is based on four case studies of high-tech start-ups and academic spin-offs, is of particular relevance for the aims of this book, as the institutional environment within which the studied companies were able to succeed and grow is not of particular support to new ventures, both in terms of the lack of opportunities and of the overall negative public image the system transfers to the companies. As one of the interviewed entrepreneurs declared: 'No one would finance a start-up created by Neapolitan people and based in Naples' (p. 108). By adopting a human capital approach, the authors show that the endowment with a high degree of qualifications and professional skills pushes the entrepreneurs towards the pursuit of high returns on their human capital investments (both in monetary and psychic terms) and represents the most important source of leverage to attract the attention of international institutional financiers, which are notoriously missing in the Italian system.

In Chapter 6, Brumana et al. focus on new entrepreneurial initiatives, which are spin-offs of existing family-owned businesses. Through the analysis of a single, longitudinal case study, the authors show how family businesses can play the role usually performed by institutional investors

in producing, financing and mentoring new ventures. The entrepreneurial orientation of the mother company, strongly influenced by the proclivity of the founder towards risk and control/autonomy, defines the type of spin-off and the trajectory of development. Of particular relevance are the transfer of human capital endowments to the next generation, particularly in terms of entrepreneurial and management competences, and the coaching role assumed by the incumbent generation over the newly born company's management team, which is similar to the role usually played by venture capitalists.

Among the various dimensions of a management teams' human capital, De Marco and Piccaluga focus on the dynamic capabilities. With an evolutionary approach similar to that of Masiello et al. (see Chapter 10) and Tracogna et al. and (see Chapter 11), the authors of Chapter 7 show that successful spin-offs present a distinctive ability to modify and adapt their business model to the changing business environment and that such talent resides in the dynamic capabilities of the companies' management teams. The underdevelopment of the institutional environment is therefore just another among the various obstacles that a new venture may face and that may be circumvented by leveraging the ever-growing competences of the leading team. The authors show how the dynamic capabilities include all of those entrepreneurial activities, organisational processes, and management abilities that lead to a recognition of the need to innovate or modify the business model, strategies, and structures in the pursuit of returns and growth by orchestrating new and existing resources (including the opportunities offered by foreign actors and institutions) in a well-functioning system.

The last chapter in the section, Chapter 8 by Crisci and Mazzurana, focuses on the dynamics of team formation in a high-growth high-tech spin-off in the biotechnology sector. Through a comparison with the results of previous research on the establishment of the organisational standard in the biotech sector, the authors account for the emergence of a new organisational form, which is centred on the amphibious scientist. The latter appears to be a strategic component of the team's human capital and the distinctive element onto which the spin-off under analysis has been able to build a competitive advantage over large and well-established multinationals. In this case, the limits of the local system, in terms of supporting institutions, appear to represent strength, rather than weakness (as companies have nothing to unlearn in order to innovate), and a stimulus to identify new configurations of competences, capabilities, processes, and structures. As shown in the case of IGA-tech, the resulting configurations may represent sources of comparative advantage over companies operating in better-endowed systems, which replicate the standard as a result of institutional isomorphism.

Part III The Strategy

The four concluding chapters analyse the strategies that actors enact in the context and through the context.

As mentioned above, a common feature of high-growth companies is the ability to transcend their national borders and creatively combine local and foreign actors and institutions so as to overcome the limits of the Italian system. The works included in Part III focus mainly on the processes of internationalisation and on the development of business models that make internationalisation one of the building blocks.

In Chapter 9, Francesconi et al. highlight the effectiveness of successful companies in creating and exploiting opportunities, particularly through very effective processes of organisational learning after critical events or failures. In particular, by an in-depth assessment of the internationalisation process of two companies with a history of exponential growth, the authors highlight the peculiarities of their strategies in comparison to prospective theories. Specifically, the entrepreneurial orientation of the management teams is being channelled towards various processes of entrepreneurial learning (by doing, from failures and by exploiting relationships) and opportunity development to achieve higher than average results. From the analysis of the case studies, it follows that the existing system, though ineffective, does not pose serious obstacles to the growth of companies, if the latter are entrepreneurial in nature, systematically invest in their absorptive capacity, critically assess the critical events, and leverage failures to learn and progress.

Chapter 10 focuses primarily on a special type of start-up company, namely the university spin-off firm. By comparing four spin-off companies with different performances, Masiello et al. highlight the ability of successful spin-offs to fine-tune the characteristics of the social capital, which they leverage with the progression of the business along the life cycle. Ties, actor types and the extent of the formality of the social arrangements that best support the process of growth are shown to vary over time, and high-growth spin-off companies appear to succeed in choosing the social capital setup that is most appropriate at any given phase. Companies that do not advance their social capital over time appear to have more difficulties in growing as the process of the combination of the modular blocks of institutions needs to be fine-tuned alongside the history and trajectory of the development of the company. In particular, when companies operate in an adverse environment, a social capital characterised by strong ties may allow them to overcome the lack of supportive institutions during the start-up phase, while weak ties need to be developed in the following phases, in which 'ventures dependent only on close and strong relationships may face inertial and lock-in phenomena, which hinder growth' (p. 249).

Tracogna, Bortoluzzi and Balboni, as a result of a cross-case comparison of high-growth and low-growth companies, suggest a new approach to the study of business models. As explained in Chapter 11, the authors show that, to succeed and grow, companies need to be able not only to overcome situations of pivot, when the business model requires a significant renewal, as the extant literature reports, but even more important, to continuously activate processes for the incremental evolution of the business model. Further, the evolution of the business model appears to be not just a pure adaptation to the external environment, but to be triggered by internal processes of experimentation, discovery, and learning. Success arises from an ongoing adaptation of the business model through incremental improvement processes, while the absence of a supporting system is seen like any other obstacle that the environment may pose, which can be overcome by an appropriate modification of the business model.

The last chapter, Chapter 12 by Gubitta et al., compares two academic spin-offs with high growth potential, but different trajectories of development. Both companies operate in the life-sciences sector and have developed groundbreaking technologies. Both companies have had the chance to leverage the highly qualified services of the technology transfer office of the University of Padua and outstanding human resources. However, the choice of different strategies, particularly in terms of timing, have led to significantly different business performances. The problem of the dwarfism of European academic spin-offs has been brought to the attention of researchers and policymakers by several sources (see, for example, Mancini and Pappalardo, 2006). The issue is even more serious in Italy, where the vast majority of university-business ventures have less than two employees. Therefore, spin-off companies appear to be affected in their growth processes by the same obstacles (or absence of business opportunities) that affect the majority of both established and start-up companies. The empirical evidence, however, shows that, in Italy, academic spins-offs may find their way towards sustainable growth through appropriate strategies and business models. Contexts, actors, and strategies need to form a well-functioning holistic system for companies to grow and succeed.