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GUILHERME TRINCO

THE FORMATION OF INTERNATIONAL ENTREPRENEURIAL OPPORTUNITIES WITH THE USE OF INSTITUTIONAL TIES:

Case studies

RIO DE JANEIRO

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Master’s thesis presented to COPPEAD Graduate School of Business’ Post-Graduate Program, Universidade Federal do Rio de Janeiro, as a mandatory requirement to the attainment of the Master of Business Administration title.

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ABSTRACT

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The concept of opportunity became central in international entrepreneurship research as a venue to integrate internationalization and entrepreneurship literature (JOHANSON; VAHLNE, 2006; OVIATT; MCDOUGALL, 2005). Research on opportunity has adopted widely varied perspectives to explain their emergence, but the business literature lacks understanding of how institutions influence general business outcomes (OPARAOCHA, 2015). The study sought to understand the influences that the use of institutional ties has on the formation of international opportunities. With that end, four case studies were performed with entrepreneurs from Brazil, Hong Kong and Switzerland who were involved in the development of international opportunities. The study emphasized the different types of international opportunities, different formation processes, main influencing factors and the strength of network ties to understand how an entrepreneur's institutional ties had influenced opportunity formation. The study developed eight theoretical propositions describing the influence that institutional ties have on opportunity horizon, social capital, psychic distance and problem solving support. An original contribution of the study is the investigation of the specific influence that institutional ties have on the formation of international opportunities with a detailed consideration of the different processes documented in the literature.

Keywords: internationalization, international entrepreneurship, international entrepreneurial opportunities, opportunity formation, institutional ties

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ACRONYMS AND ABBREVIATIONS

COPPE	Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa em Engenharia
CCBC	Câmara de Comércio Brasil-Canadá
CENA	Centro de Energia Nuclear na Agricultura
CERN	Conseil Européenne pour la Recherche Nucléaire
CHUV	Le Centre Hospitalier Universitaire Vaudois
CRO	Contract Research Organization
CTI	Commission for Technology and Innovation
DNV	Domestic New Venture
EA	Entrepreneurial Alertness
EE	External Enabler
EMA	European Medicines Agency
ERI-Network	Switzerland's Education, Research and Innovation Network
EO	Entrepreneurial Orientation
EU	European Union
EPFL	Swiss Federal Institute of Technology in Lausanne
FAPERJ	Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro
FDA	Food and Drug Administration
FDFA	Federal Department of Foreign Affairs
FDI	Foreign Direct Investment
FINEP	Financiadora de Estudos e Projetos
FTO	Freedom To Operate
HUG	Hôpitaux Universitaires de Genève
IB	International Business
IE	International Entrepreneurship
IEO	International Entrepreneurial Opportunity
IEPE	Instituto de Educação Para Empreendedores

INV	International New Venture
IO	International Orientation
IP	Intellectual Property
LHC	Large Hadron Collider
LPS	Laboratório de Processamento de Sinais
MVP	Minimum Viable Product
NVI	New Venture Ideas
OC	Opportunity Confidence
OECD	Organization for Economic Co-operation and Development
SaaS	Software as service
SMOPEC	Small Open Economies
SERI	Switzerland's State Secretariat for Education, Research and Innovation
STC	Science and Technology Counsellors
UE model	Effectual Uppsala model
UFRJ	Universidade Federal do Rio de Janeiro
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States of America

Contents

1 INTRODUCTION

Internationalization and entrepreneurship phenomena have experienced tremendous growth in recent decades, affecting economic and national development in a global scale. Much scholarly work has been developed in response to this trend, seeking to understand these phenomena, provide direction to practitioners and support governments in policy development.

Interest in the topic of internationalization is explained by its frequent association with firm growth (GIBB, 1993) and firm performance (GLAUM; OESTERLE, 2007). Globalization has made an increasing number of firms strive for international presence, despite the challenges faced when they internationalize. Even when firms intend to focus solely on their domestic markets, they have to be internationally competitive since the generally decreasing trade barriers bring foreign, internationally-skilled competition into their home markets (ZAIN; NG, 2006).

Entrepreneurship has been discussed in the academy at least since Schumpeter (1934), and has for a long time been an important topic in economic theory (*e.g.* KIRZNER, 1973). Interest in the topic increased in recent decades due to a variety of reasons, among which is the pursuit of economic development and social change, since it is believed that entrepreneurship can generate and sustain economic growth (CEGLIE; DINI, 1998). Other important reasons include higher uncertainty attached to what were previously perceived as stable corporate careers (VENKATARAMAN, 1997) as well as connections between entrepreneurship and other themes of high managerial and academic interest such as innovation (DRUCKER, 1985).

More recent than the academic development of both internationalization and entrepreneurship is the interest in international entrepreneurship (IE), born as a business concept and brought into the academic domain (SZYLIOWICZ; GALVIN, 2010). Interest in the topic can be explained, for example, by claims that tackling international markets from venture inception is an important avenue for firm growth and increased long-term profits (GIBB, 1993) and by the belief that there might be performance advantages in rapid internationalization (AUTIO; SAPIENZA; ALMEIDA, 2000). Recent IE research has sought to build common ground between internationalization and entrepreneurship research, leading to the centrality of the opportunity concept as a way to integrate both fields (JOHANSON; VAHLNE, 2006; OVIATT; MCDOUGALL, 2005). Collectively, IE research on opportunity has tried to further the knowledge on what international opportunities are and how they are formed and exploited (MAINELA; PUHAKKA; SERVAIS, 2014).

The extant literature identifies three different processes that support the *formation* of opportunities (SARASVATHY, 2003). The first one is *recognition*, understood as the process of recognizing valuable dispersed information (GEORGE; PARIDA; LAHTI; WINCENT, 2016) – in this process, the market demand and the means needed to fulfill it are known by different groups of people, and the entrepreneur is the person who combines them in the form of a business. The second process is *discovery,* differentiated from recognition by the fact that either a set of means or a market demand are previously known to the entrepreneur, leading him or her to pursue or be alert to the emergence of matching demands or means. Lastly, the literature acknowledges *creation* as a formation process in which the entrepreneur's ideas about market demands, means available or both are shaped through interactions with the external environment (*e.g.* potential customers, suppliers, business partners, financiers).

Information and resources are needed to form and exploit international opportunities (GEORGE *et al.*, 2016). The limitations that many entrepreneurs and SMEs have on accessing those items have led researchers to question what mechanisms support these resource-constrained actors when forming international opportunities (OPARAOCHA, 2015). One such mechanism which requires further clarification is institutional support. As part of this clarification effort, it is judged to be necessary to understand how the use of institutional ties influences the formation of international opportunities.

1.1 THE RESEARCH PROBLEM

The study sought to understand **how the use of institutional ties influences the formation of international entrepreneurial opportunities** involving entrepreneurs and corporate entrepreneurs from Brazil, Hong Kong and Switzerland in different industries. Specifically, the study aimed to clarify if the use of institutional ties had a relevant role in the recognition, discovery or creation of international opportunities, identifying which were the resources accessed through institutional ties, and how these interacted with the main aspects of opportunity formation.

For the study, institutions were understood as organizations, governmental or not, that provide business support functions but are not driven by the profit motive (OPARAOCHA, 2015).

Within that definition were included NGOs, financial institutions, business incubators, research institutes, technology foundations, science parks, unions, development agencies, trade associations, professional associations, expert and advisory service centers (GIBB, 1993; OPARAOCHA, 2015). Institutional ties refer to the relationships used by businesses to exchange information with institutional actors in order to develop their economic activity.

In order to understand the influence of institutional ties, the study sought to understand how they are used and how the resources obtained through them relate to the main aspects of international opportunity formation that have been identified in the entrepreneurship, international business and international entrepreneurship literatures. The following secondary were elaborated to facilitate the understanding of the phenomenon and the elements involved:

- Which specific type of international opportunity entrepreneurs form?
- Which of the different opportunity formation processes are used by entrepreneurs?
- What are the main influencing factors of international opportunities?
- What are the resources accessed through institutional ties and how do they interact with the main influencing factors?
- What are the characteristics of the entrepreneur's main relationships and institutional ties?

International entrepreneurial opportunities, or simply international opportunities, are a necessary condition for internationalization (ELLIS, 2011), and the formation of international opportunities is the driving mechanism of internationalization processes (JOHANSON; VAHLNE, 2009). Research on opportunity has adopted widely varied perspectives to explain their emergence, and the main research question related to opportunity has been *"why can some individuals recognize or discover opportunities while others cannot?"* (GEORGE *et al*., 2016, p.343). Many studies in previous decades focused on answering this question based on individual traits, but results were inconclusive (VENKATARAMAN, 1997). Research found a variety of factors to be relevant for the recognition and discovery of opportunities, such as prior knowledge and networks (ARDICHVILI; CARDOZO; RAY, 2003; SHANE, 2000) and the formation of opportunities has also been explained by effectuation theory, which understands opportunities as being created (SARASVATHY; DEW; VELAMURI; VENKATARAMAN, 2003), as opposed to recognized or discovered. In summary, understanding the particularities of opportunity formation in international settings has been raised as a central issue to internationalization research (MATHEWS; ZANDER, 2007).

It is accepted that many firms, and especially new ventures, rely on external resources to overcome the challenges of internationalization (OVIATT; MCDOUGALL, 1994) and that they use networks to access and coordinate resources that cannot be internalized (GIBB, 1993). Both social networks and business networks have been analyzed and linked to the processes of obtaining and using information and resources to form international opportunities (ELLIS, 2011; JOHANSON; VAHLNE, 2006, 2009). Some recent research has acknowledged that institutional network support is crucial for entrepreneurial internationalization (OPARAOCHA, 2015). Nevertheless, the way in which institutional ties influence the formation process of international opportunities has not been fully explored. The study sought to contribute to this research issue.

The study aims to contribute to the understanding of international entrepreneurial opportunities and their formation process by reviewing behavioral theories of internationalization, the concepts of entrepreneurial opportunities and international opportunities as well as existing critiques to the use of the opportunity construct. Based on this extant knowledge, the study purposefully selected cases where the influences of institutional ties on international opportunity formation could be analyzed. Building on the gathered empirical data, the study performed within-case and cross-case data analysis (EISENHARDT, 1989) and sought to develop theoretical propositions regarding the influences of institutional ties on international opportunity formation.

1.2 RESEARCH THEME RELEVANCE

The main theories that contribute to explain *why*, *what*, *when*, *where* and *how* firms venture into foreign markets adopt one of two approaches: they either see internationalization as an outcome of profit-maximizing rational decision-making or they understand internationalization as a process dependent on attitudes, perceptions and behaviors that seek to minimize the risks attached to internationalization (CARNEIRO; DIB, 2007). Despite both economic and behavioral theories of internationalization having extensive development, McDougall (1989) observed that existing international business (IB) theories didn’t offer sound theoretical frameworks that allowed to explain the increasingly common phenomena of new ventures that chose to compete internationally from inception.

The term international entrepreneurship (IE), used to name the most recent behavioral internationalization theory to emerge, was used by Morrow (1988) to highlight technological advances and cultural awareness that seemed to allow new ventures to compete in foreign markets in a way which was not previously possible. McDougall (1989) empirically differentiated between domestic new ventures (DNVs) and international new ventures (INVs), relating firm as well as industry-specific dimensions that helped explain different behaviors between these two types of entrepreneurial firms. Interest in IE increased over the 1990s and 2000s with the continuous globalization of the world economy (ZAHRA; GEORGE, 2002) and the continued failure of existing internationalization theories in explaining many cases of international entrepreneurial venturing (MCDOUGALL; SHANE; OVIATT, 1994).

Some authors have argued the relevance of IE by highlighting the similarities between entrepreneurial and internationalization processes (JOHANSON; VAHLNE, 2003, 2009), and others saw its need since neither IB nor entrepreneurship in isolation were able to explain the dynamic processes needed to understand firms and new ventures that displayed accelerated internationalization (MATHEWS; ZANDER, 2007). According to Jones, Coviello and Tang (2011), initial research in IE focused on internationalization and venture types, while entrepreneurship topics received less attention. Early IE studies emphasized the age and speed of internationalization and aimed to identify antecedents, necessary and sufficient conditions of early and rapid internationalization (MAINELA *et al*., 2014). Keupp and Gassman (2009) advocated that IE research should also seek to be grounded in theories and frameworks from entrepreneurship.

At the same time that IE developed, the debate over the concept of opportunity became central in entrepreneurship research and changed the focus of the field, shifting attention from the entrepreneur to the opportunity itself and the nexus between the two (SHANE; VENKATARAMAN, 2000). Davidsson (2015) found that despite focusing on opportunity, approximately 80% of studies using entrepreneurial opportunities as an important concept failed to provide any definition for the construct.

IE research increasingly adopted elements of entrepreneurship and international opportunities eventually became a central element of the field (OVIATT; MCDOUGALL, 2005; MAINELA *et al.*, 2014). Despite such centrality, the use of international opportunities has been inconsistent and the concept is usually elaborated to a limited extent, with few definitions provided, resulting in insufficient understanding of what an international opportunity actually is and in scarcity of empirical research on international opportunities (MAINELA; PUHAKKA; WAKKEE, 2017). Mainela *et al*. (2014) argued that the lack of entrepreneurial focus on IE was due to narrow theoretical and conceptual development to support the study of international entrepreneurial opportunities, which could be attributed to the recent nature of the construct's centrality in IE research. More specific to this study, there is only minor understanding of how different contexts influence the formation of entrepreneurial opportunities, and little has been learned about the impact of institutions on such process (SHANE, 2012). While governments and institutions are frequently cited as important contextual elements in entrepreneurship, there is a need to better understand how this type of actor may affect opportunity formation processes (SHORT; KETCHEN; SHOOK, 2010).

One of the dominant perspectives in economics is that the internationalization of SMEs and entrepreneurial firms support economic stability, innovation, social renewal and international competitiveness, thus many governments provide some type of support to international entrepreneurship initiatives (GREENE; MOLE, 2006). Still, research has found that many policies result in institutional network arrangements that fail to provide optimal support to the development of SMEs and new ventures (BATEMAN, 2000). Thus, the current study may also be useful in providing insights for policy makers and institutional actors that aim at supporting SMEs and entrepreneurial firms in their efforts to form international opportunities.

Finally, there is agreement that the business literature lacks the understanding of how institutional networks influence general business outcomes of SMEs (OPARAOCHA, 2015). Therefore, a study to understand how the use of institutional ties influences the formation of international entrepreneurial opportunities is of interest.

1.3 RESEARCH SCOPE

The study included cases from entrepreneurs and corporate entrepreneurs based in Rio de Janeiro (Brazil), Lausanne (Switzerland), Pacifica (US) and Hong Kong that had formed international opportunities and had established institutional ties that could be used during the process of doing so. Table 1 shows some basic information about the cases included in the study.

Table 1 - Overview of cases

Company name	Founder's nationality	Foundation year	Number of employees	Industry segment
PB&B	Swiss-Canadian	2013	3	Medical aesthetics
TWIST	Brazilian	2011	7	Data science
GoNitely	Swiss	2015	19	Short-term rental
Onix	Hong Kong	1975	~500	Toiletry goods

The objective was to identify the influences that the use of institutional ties had on international opportunity formation. Differently from previous research, the study was concerned specifically with the role of institutional ties in the international opportunity formation process, not being concerned with business outcomes or seeking connection between internationalization and performance as it common in IB studies (GLAUM; OESTERLE, 2007).

As far as research domain, it may be important to clarify that the study is not concerned with topic of strategic entrepreneurship, which tries to bridge the issues of opportunity identification and initial generation of wealth with the challenge of successfully realizing and sustaining wealth capture and competitive advantage (HITT; IRELAND; CAMP; SEXTON, 2001). The issues of value capture and competitive advantage would require deeper analysis of resource availability and deployment, dynamic capabilities and other strategic management topics, in order to analyze sustainable wealth creation. For the purposes of the study, outcomes of opportunity exploitation are not of primary concern in the analysis, which is specifically focused on the study of international opportunity formation and how it is influenced by institutional ties.

Also, while there is a comparative angle to the study due to the different origins of the selected cases, the study does not intend to include a systematic analysis of the relevant institutional environments and of the effect that varying institutional contexts have on opportunity formation and on the way that institutional ties are used since such analysis would require extensive review of institutionalism literature, which escapes the study's intention and scope. Specifically, the study is rooted in international business, entrepreneurship and international entrepreneurship literature and does not seek to explore institutional theory in detail. Instead, it focuses on internationalization, entrepreneurial opportunities and opportunity formation processes and how they are affected by an entrepreneur's use of institutional ties.

1.4 STUDY ORGANIZATION

The following chapters present a review of the relevant literature, a detailed description of the research method applied in the study, a description of the four cases included in the analysis, the analysis itself and, finally, the study's conclusions. Lastly, the study's bibliographical references are listed. Also, two appendices were included with the interviews protocols (in English and in Portuguese).

The literature review is divided in four main topics: 1) behavioral approaches to internationalization, 2) effectuation, 3) entrepreneurial opportunities and 4) international entrepreneurial opportunities. This theoretical reference was used to structure the initial process of data collection and was referred to back and forth during data collection and data analysis.

In the methodology chapter the research problem is elaborated and translated into a main research question and a set of secondary research questions. The research methods for data collection and analysis are then described and the study's limitations are clarified.

Next, the cases included in the study are presented through a narrative that describes the companies' origins, their development and the international opportunities they had formed. The first case presented is PB&B, a medical technology startup from Lausanne focused on aesthetics and plastic surgery. The second case is TWIST, an IT startup from Rio de Janeiro that developed data science products and services. Next, the case GoNitely is presented, a startup from Pacifica (Silicon Valley) that developed and managed a short-term rental and property management online platform. The last case is Onix, a manufacturer of laundry and toiletry products from Hong Kong.

The data analysis is presented according to the different content categories that were developed in a progressive focus gradual approach. The categories are used to describe the main facets of the international opportunities analyzed and to investigate what had been the role of the institutional ties present in each case.

The conclusions of the study are elaborated and some theoretical propositions are presented as the outcome of the study. Suggestions towards future research efforts are also made in light of what had been learned during the study's development. Lastly, the study's bibliographical references are listed.

2 LITERATURE REVIEW

2.1 INTRODUCTION

According to Carneiro and Dib (2007), none of the most influential theories of internationalization is able to describe or explain in full the internationalization processes in terms of why firms internationalize, which value chain activities or products are moved across borders, when such phenomena take place, where the process leads the firm to and how it unfolds specifically.

This study is not concerned with theories that seek to explain internationalization from an industry or national economy perspective, such as the international product lifecycle theory (VERNON, 1979) or the investment portfolio theory (LEVY; SARNAT, 1970), but only with theories in which the firm and the entrepreneurs are the focus of analysis. Also, since the level of analysis of interest is that of the entrepreneur's decision making and behaviors, approaches purely based on economics, as Hymer's (1976) explanation of internationalization through analysis of foreign direct investments (FDI) motivated by monopolistic advantage and Dunning's (1977, 1980, 1988) eclectic paradigm, are also not covered.

With a view to understand the existing behavioral approaches to internationalization, the Uppsala model is discussed, while the network approach and international entrepreneurship (IE) research are covered in more detail. The overlapping approaches to network research – social and business – are presented along with their main insights, and the institutional perspective is reviewed both as a contextual issue and as a subset of the broader network approach. The network approach to internationalization, which uses many of the insights from broad network research, is then reviewed. Next, the field of international entrepreneurship is presented in a way to showcase its initial reasoning and its evolution in regards to main assumptions and theoretical developments that dominate the field.

Effectuation is presented as a general theory of entrepreneurship, as well as its connections to internationalization and opportunities, with a view to understand how the theory supports one of the opportunity formation process: creation. This is followed by a review of the main issues in entrepreneurial opportunity research, including definitional basis, the theoretical debate on the nature of opportunities and the other dominant opportunity formation processes: recognition and discovery. Subsequently, some of the recent emerging criticism towards the overall use of the opportunity construct is discussed. Finally, the conceptualizations of international opportunities are presented and the main insights from existing research on the specificities of international opportunity formation are reviewed.

2.2 BEHAVIORAL APPROACHES TO INTERNATIONALIZATION

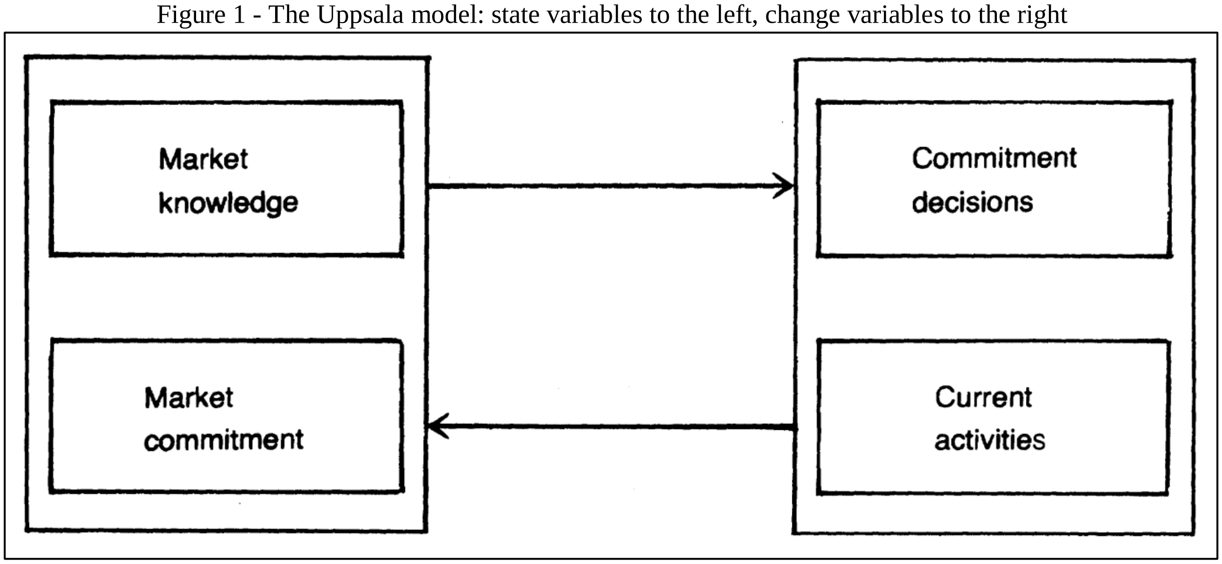
2.2.1 The Uppsala model

Johanson and Vahlne (1977) developed a conceptual model of the internationalization process that combined their empirical observations – which contradicted the prescriptions of the normative economics perspective of internationalization (JOHANSON; VAHLNE, 2009) – with the theoretical support from the behavioral theory of the firm (CYERT; MARCH, 1963) and the theory of the growth of the firm (PENROSE, 2009). They identified common elements that were present in the decisions that constituted the internationalization of the firm, leading to a model of the internationalization process, which later became known as the Uppsala model. The internationalization process model (Figure 1) posits that firms gradually commit resources to foreign markets, both by conducting business in these markets – which allows the firm to build market-specific knowledge assets – and by taking stepped decisions and actions to increase foreign commitments (change variables). The degree of commitment consists of both amount of resources and how specific they are to the market. This gradual evolution of commitment to a foreign market would be governed by the already existing commitment to the specific market and by the existing experiential knowledge about host country market and operations (state variables), leading to reduced perceived risk in committing additional resources and increasing the firm's dependence on the given foreign market. Experiential knowledge refers to what *"can only be learned through personal experience. With Experiential knowledge, emphasis is placed on the change in the services the human resources can supply which arises from their activity* […] *experience itself can never be transmitted"* (PENROSE, 2009, p.53), therefore the inseparability of individual and experiential knowledge, meaning impossibility to transmit what has been learned, is what differentiates it from *objective knowledge*. Importantly, commitment decisions and current business activities also affect the accumulated commitments and knowledge – the model in Figure 1 is said to be dynamic.

In the Uppsala model, the foreign market choice for internationalization would be based on *psychic distance* between national business environments (*i.e.* differences in culture, language, education, business practices and industrial base which disturb the flow of market information and makes the business environment difficult to understand), which suggested that a firm first internationalizes to psychically close countries due to a lower risk perception. In most observations used to generate the model, internationalization started with the discovery of demand for the firm's products in foreign markets, which was met by exporting to a sales agent, which was followed by the setup of a sales subsidiary and, in some cases, followed by setting up local production in the host country. Such a sequence was called *the establishment chain* (JOHANSON; WEIDERSHEIM-PAUL, 1975). The internationalization process model aimed specifically at explaining the pattern and mode of establishment of marketing-oriented operations, including local-oriented manufacturing (JOHANSON; VAHLNE, 1990).

In the Uppsala model, lack of experiential knowledge about a market and its operations is the main barrier to the firm's internationalization since it causes high uncertainty to be associated with the decision of committing additional resources to the foreign market in question. Consequently, *learning* about host country market and operations is the critical issue in internationalization (JOHANSON; VAHLNE, 2003).

Figure 1 - The Uppsala model: state variables to the left, change variables to the right



Source: Johanson and Vahlne (1977, p.26)

2.2.2 Networks and Internationalization

2.2.2.1 Introduction

Relationships were highlighted as one of the unique resources used by international entrepreneurs to identify opportunities and develop ventures (MCDOUGALL *et al.*, 1994). Social capital is used within the context of networks to obtain information and resources (GEORGE *et al.*, 2016). Shane and Venkataraman (2000) emphasized that social ties facilitate access to financial resources from outsiders, which increases the likelihood of exploiting identified opportunities. Further, some studies have claimed that personal networks are the relevant ones for rapid internationalization of international new ventures (INVs) since the very early phases of internationalization usually focus on exploiting existing network relationships, not adding new ones, and personal relationships already carry the necessary trust and commitment necessary in internationalization (ELLIS, 2011; SASI; ARENIUS, 2008). Such results are coherent with social studies that emphasize the spillover between business and social life (GRANOVETTER, 1985). In the emergence of entrepreneurial firms, social relations transform into socio-economic and more complex relationships (LECHNER; DOWLING; WELPE, 2006).

According to Lechner *et al.* (2006), networks can be defined as a specific set of ties between actors, and the characteristics of these ties can be used to understand actors' behavior. More broadly, network content, structure and governance are used to explain the role of networks in business. Ellis (2011) stated that social networks and business networks are differentiated mainly by the level of analysis: social networks refer to the set of relationships of a single individual while business networks are usually considered the relationships linking organizations to one another. Still, such division of social and business networks is not homogeneous in the literature and different streams of research emerged using different network designations, sometimes addressing overlapping topics (SLOTTE-KOCK; COVIELLO, 2010).

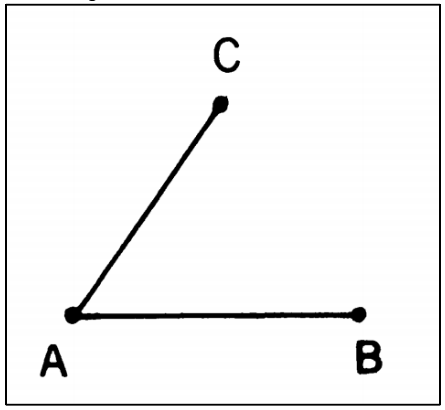
2.2.2.2 Social network research

The study of the impact that networks of relationships have on social groups and organizations belongs to the *social network* research domain (SLOTTE-KOCK; COVIELLO, 2010). While some studies in this area acknowledge the role of endogenous actors and purposeful network action – *e.g.* firms trying to access certain resources and to establish an efficient set of relationships (KOKA; MADHAVAN; PRESCOTT, 2006), most emphasis is given to the determinant role of patterns of whole networks on individual or organizational behavior (SLOTTE-KOCK; COVIELLO, 2010). Exogenous factors (*e.g.* technological and political change) are said to affect network interactions directly. Tie strength, network density, size and relative positioning of actors in the network are the structural characteristics that are said to determine network impact on actors. Network structure is believed to have two important effects: the ways in which it shapes and constrains behavior of network actors and the ways in which individuals are allowed to shape the network to achieve their goals (GRANOVETTER, 1973).

In social relationships, the strength of the ties is defined by the time, emotional intensity, intimacy and reciprocity present in the tie (ibid.). Tie strength is also referred to as relational embeddedness (ANDERSSON; HOLM; JOHANSON, 2005). Analyzing the macro implications of the strength of interpersonal dyadic ties, Granovetter (1973) argued that strong ties (*e.g.* close friendships, family) cause the networks of two individuals to overlap to a larger extent than the networks of individuals linked by weak ties. This principle is said to have relevant impact on the diffusion of influence and information across networks; only weak ties can function as bridges in a network – a tie that represents the only way for an information to be transmitted from one actor to another – while strong ties, despite building cohesion within specific relationships, lead to encapsulation of the network actor and overall fragmentation of the network. Bridges connect dispersed social clusters and, even though close ties motivate actors to share information, new unique information is frequently brought to a network actor through its weak ties, suggesting primacy of structure over agency within a network, or at least that stronger motivation to share information among close partners does not overcome the fact that network actors tend to have higher number of weak ties than strong ones.

Density is believed to be a main feature of network structure, being defined as the number of ties existing between a central actor and its interacting counterparts, including the ties between the central actor's counterparts (the ones that do not include the central actor itself), divided by the total possible number of ties between all actors considered. Network density is higher when only considering a central actor's strong ties because counterparts are more likely to interact with one another; this is illustrated by Granovetter's (1973) proposition of the *forbidden triad* (Figure 2), in which it was posited that if actor A has strong relationships with B and C, it becomes increasingly unlikely with time that B and C are not directly tied, at least weakly – therefore, the triad illustrated in Figure 2 is said to be *forbidden*.

Figure 2 - The forbidden triad



Source: Granovetter (1973, p.1363)

2.2.2.3 Business networks research

The business network approach (JOHANSON; MATTSSON, 1987) is mostly known as a theoretical perspective to analyze industrial systems that describes important aspects of relations between firms, and emerged as an alternative to the neoclassical-based approach of transaction cost analysis of the frontier of economic activity coordination between firms (WILLIAMSON, 1975). In industrial networks, there is a division of work which makes firms interdependent and creates the need for economic activity coordination between organizations (JOHANSON; MATTSSON, 1987). From a network perspective, coordination between firms is not achieved through hierarchies (internalization) neither through market mechanism, but through a series of interactions between firms that form an intermediate type of governance structure where price is just one of several factors. This mechanism enables industrial districts to achieve benefits that were previously believed to be possible only through large scale coordination within single hierarchies (GIBB, 1993). Repeated interactions lead to the formation of specific business relationships that are embedded in social structures and characterize specific firms and, collectively, form networks (GRANOVETTER, 1985). In this context, social embeddedness refers to ways in which the social context facilitates or constrains economic action (ALDRICH; ZIMMER, 1986). Other than socially embedded ties, business networks also contain arms-length ties, those where coordination is more loose and less reliant on previous interactions (SLOTTE-KOCK; COVIELLO, 2010).

A basic assumption of the network approach is the dependence of firms on resources controlled by other organizations (JOHANSON; MATTSSON, 1987). A firm's network position is the intangible, partially controlled market asset that provides the firm access to resources external to it. The capability to access these resources is sometimes called social capital (GEORGE *et al.*, 2016). A network position is formed by a cumulative process of establishing, maintaining, developing and breaking relationships guided by the goals of achieving satisfactory short term returns while securing a network position that supports longevity and growth of the firm (JOHANSON; MATTSSON, 1987). Contrasting with social network research, this implies that network changes are driven by factors endogenous to the network actors and, although no actor is able to completely coordinate the network, their collective actions of managing *in* networks create changes that spread throughout the network (SLOTTE-KOCK; COVIELLO, 2010). Exogenous factors such as technological and political changes are transformed into or combined with endogenous factors, which then trigger change in individual dyads – the overall network structure and dyads are said to *coevolve*.

The business relationships that form a network are composed by human, technical, legal and economic dimensions, and exist due to their value in enabling the improvement of resource coordination efficiency across heterogeneous organizations and in promoting knowledge development (JOHANSON; VAHLNE, 2006). These different dimensions in a business relationship mean that the dependence between firms is specific in character (*e.g.* process related, technical, logistical, financial) (JOHANSON; MATTSSON, 1987). Also, the heterogeneity of firms means that some partnerships are better matches than others (JOHANSON; VAHLNE, 2006) and that firms need to gradually adapt to each other in terms of quantity, quality and timing of goods and services exchanges in order to make the relationship increasingly beneficial – this adaptation, in turn, increases the interdependence between partner firms (JOHANSON; MATTSSON, 1987).

Despite well-functioning relationships being regarded as assets (DYER; SINGH, 1998), they also carry dependency – since partners have to coordinate either by agreeing on common plans or by exercising power over each other (GRANOVETTER, 1985; JOHANSON; MATTSSON, 1987) – and complexity, due to interaction with other network relationships, causing the firm to be entangled in a web of relationships (SCHWEIZER; VAHLNE; JOHANSON, 2010). The extent to which an exchange within a specific relationship is contingent on exchange or non-exchange within a different relationship is the degree of *relatedness* between these relationships (COOK; EMERSON, 1978).

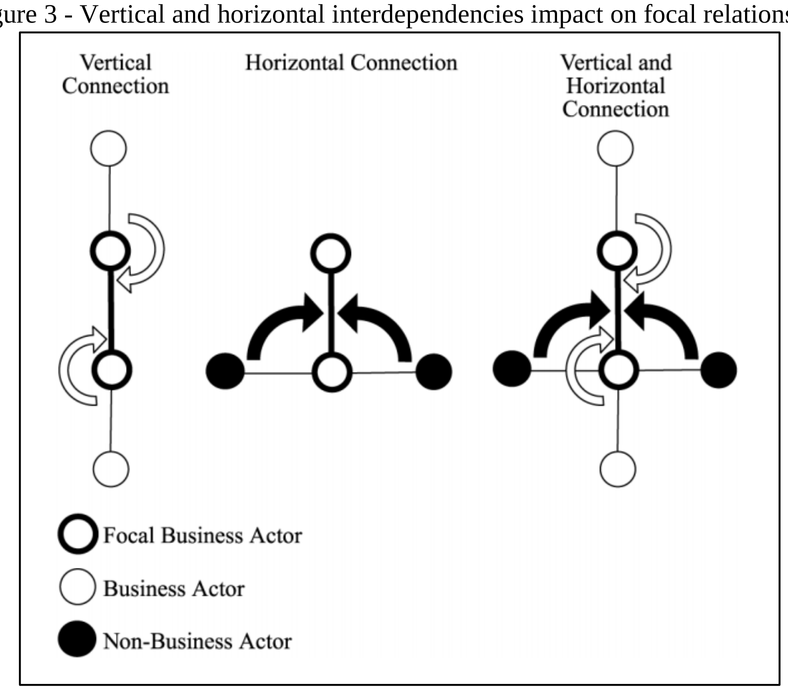
In business networks, trust and commitment indicate tie strength (HADJIKHANI; THILENIUS, 2005). Trust is the willingness to rely on an exchange partner, and commitment is measured by the sacrifices partners make to maintain a relationship, such as adaptations (JOHANSON; MATTSSON, 1987). Although networks and relationships are generally seen as progressing – developing existing ties and adding new ones, in reality, network development includes regression – deterioration and elimination of ties (SLOTTE-KOCK; COVIELLO, 2010). Both progression and regression, as well as changes within existing relationships, are subject to factors from three levels: endogenous to actors, exogenous to actors but endogenous to the network and factors exogenous to the network – macro environment or context.

Granovetter (1985) concluded that while the lack of opportunistic behavior in new relationships might be explained by reputational cost concerns due to the distribution of information regarding exchange outcomes in a network (a monitoring effect that is moderated by network density), a purely economic rationale, repeated transactions over time lead to cumulative social layering of business relationships, creating additional expectation of trust and lower concerns regarding opportunistic behavior in the relationship. Such social layering implies that the trust that is relevant for each relationship is increasingly based on identity and known outcomes of past interactions of the partners, not on a general reputational image.

In addition to the complementarity engendered by networks, there are also competitive aspects to it, both due to conflicting objectives between partners and to multiple firms seeking to establish similar and incompatible exchange relations with certain actors (JOHANSON; MATTSSON, 1987). While vertical relationships (*e.g.* supplier-buyer), seem to provide more room for mutual interest, other types of strategic alliances, such as joint ventures, where a competitive element is overtly present, tend to reveal narrower partner interests such as gaining knowledge from the relationship, instead of sharing or cooperating to create new knowledge (JOHANSON; VAHLNE, 2009).

Hadjikhani and Thilenius (2005) argued that in any dyadic relationship, horizontal influences are as important as vertical influences in defining the level of trust and commitment within the focal relationship. This is due to the interconnected nature of relationships which means that either horizontal or vertical actors can generate uncertainty in any interconnected relation, affecting its trust and commitment, and ultimately the interdependence between the focal actors. Business relationship uncertainty arises when connected relationships do not provide supplementary functions to the focal relationship. Horizontal interdependencies k and their influence on a focal relationship is illustrated in Figure 3 (the image only shows non-business actors, though the model applies to horizontal business relationships too), along with the vertical interdependencies' influences. In summary, commitment and trust in business relationships are defined by the exchange between the two focal firms and their vertical and horizontal connected relationships (with both business and non-business actors).

Figure 3 - Vertical and horizontal interdependencies impact on focal relationship



Source: Hadjikhani and Thilenius, 2005, p.138

2.2.2.4 Institutional environment and institutional networks

In the network approach to internationalization, the importance given to nations as identifiable individual entities was much lower than previous internationalization models (JOHANSON; VAHLNE, 2003). Still, it was acknowledged that there are two sets of problems that need to be overcome in network relationship building across borders (JOHANSON; VAHLNE, 2009). The first type of problem are the relationship-specific managerial issues that arise from firm-to-firm business relationships. The second type of problem relates to country-specific institutional issues. Business market knowledge and institutional market knowledge, respectively, are necessary to deal with each of these types of problems. Institutional market knowledge relates to culture, language, laws, regulations and local authorities, thus, it relates closely to the concept of psychic distance between nations. Johanson and Vahlne (2009) called the lack of knowledge to solve the first set of problems *liability of outsidership,* and the lack of knowledge to solve the second set of problems *liability of foreigness*. Network resources, *i.e.* external to the organizations, are used, specially by entrepreneurs and SMEs, to mitigate these liabilities in early stages of entrepreneurial internationalization (ARBAUGH; CAMP; COX, 2008).

Modern definitions of institutions as context describe them as *"social structures that have attained a high degree of resilience and are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life"* (SZYLIOWICZ; GALVIN, 2010, p. 322). In institutional theory, organizations can have an agentic or less agentic approach to institutions and institutional actors (NAROOZ; CHILD, 2017). While a non-agentic approach leads to organizational isomorphism, the agentic approach emphasizes the leeway that organizations have when responding to institutional stimulus. From a network perspective, adopting an agentic approach means that the variation in networking behavior of firms is partially due to heterogeneous organizational responses to the same regulative and normative environment, at least as much as it is culturally influenced and dependent on decision-makers' interpretations.

Institutional environments are said to be either of *institutional support* or of *institutional void* (STEPHAN; UHLANER; STRIDE, 2015). Institutional support environments are characterized by institutions effectively providing business support services that are *"accessible under the terms of clear universalistic rules"* (ibid., p.1). Institutional voids represent not only the lack of support, but also inadequate rules and weak enforcement that generate uncertainty. The voids are said to emerge both as institutional technical inadequacy and in the form of sociocultural norms and customary practices that are detrimental to business (NAROOZ; CHILD, 2017).

There is a correlation between institutional and economic development (ACEMOGLU; ROBINSON, 2010). Although regulative, normative and culture-cognitive elements of institutional environments are interdependently shaped by complex processes and mechanisms that simultaneously give rise to different cultures and varying levels of institutional development (SZYLIOWICZ; GALVIN, 2010), Narooz and Child (2017) regarded institutions mainly as the regulations, norms and institutional organizations, analyzing them separately from cultural elements. The authors observed that developing economies have more institutional voids, and these voids interact with cultural norms (*e.g.* universalism versus particularism, individualism versus collectivism, preferred levels of uncertainty avoidance) and the decision-maker's interpretations and narratives to shape the networking behavior of each particular firm. In a comparison of internationalizing SMEs from Egypt and United Kingdom, institutional regulative and normative voids combined with a cultural environment of particularism, collectivism, and high level of uncertainty avoidance led Egyptian firms to rely more on strong ties embedded in dense networks to obtain information and resources in an informal and non-contractual basis. In contrast, the more supportive institutional environment, combined with universalism, individualism and lower level of uncertainty avoidance made British firms more likely to rely in formal contracts and more willing to use weak network ties with almost absent social layering to obtain access to a more diverse set of information and network resources.

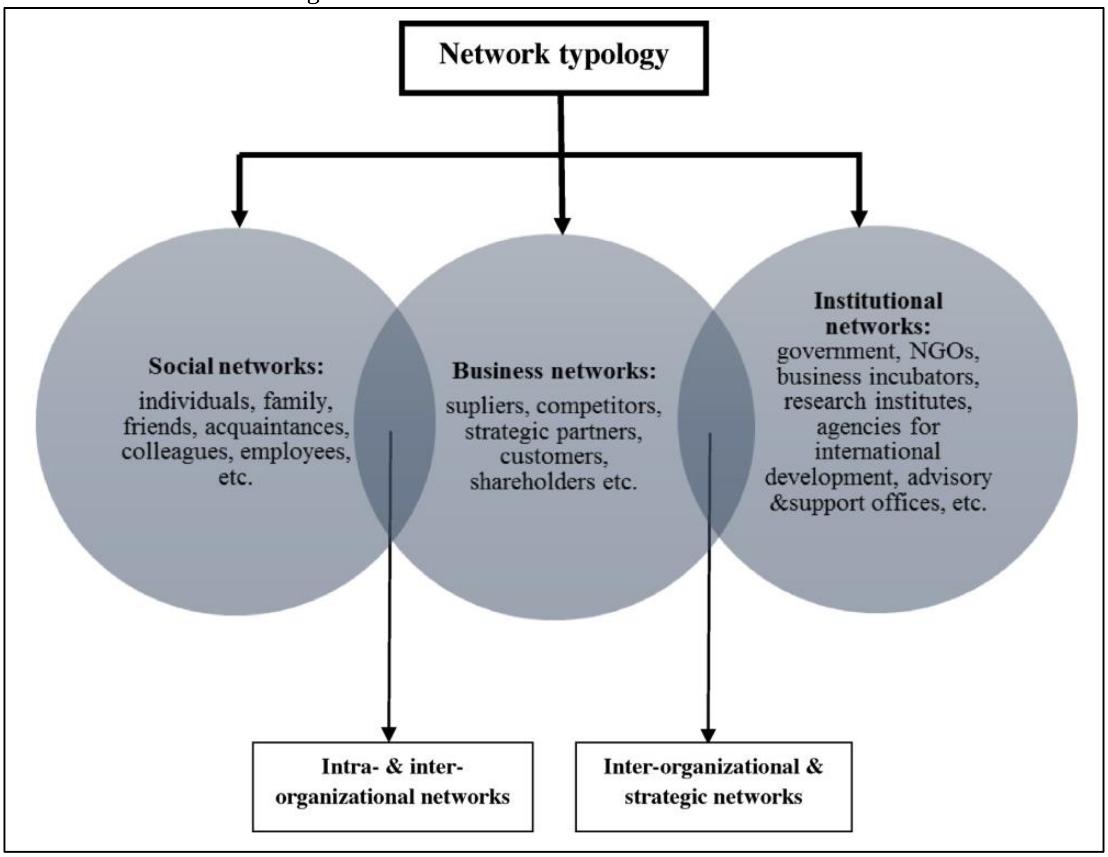
Despite IB and IE literatures commonly focusing on the national level of analysis when it comes to institutional aspects, traditional measurements of institutional development, cultural similarities and political risk are rather reductionist, hardly being comprehensive in their depiction of the institutional issues that exist at the levels of the entrepreneur, firm, nation and world system (SZYLIOWICZ; GALVIN, 2010). Still, with the objective of achieving clarity in the explanation of the institutional influences over social and economic action, international entrepreneurship tends to focus on the regulative pillar of institutions, as embodied by rules, laws, sanctions and institutional organizations.

Hadjikhani and Thilenius (2005) included institutional organizations as part of a firm's business network under the designation of *horizontal actors*, together with all other non-vertical relationships of a firm (*e.g.* political organizations, competitors, media, trade unions). These horizontal actors add to the embeddedness of business relationships. Acknowledging the impact of horizontal actors in business relationship dyads leads to analyzing institutional influences as part of the firm's network dynamics, not only as external environmental determinants as it has been common in IB literature (HADJIKHANI; THILENIUS, 2005). Importantly, the nature of institutional relationships between firms and institutions, and between institutions, is different than the one of business relationships since they do not directly involve the same type of profitability, technical or process issues that exist in relationships between firms (OPARAOCHA, 2015).

In IE, institutional networks generally refer to a collection of open-access organizations, governmental or not, that provide business support functions but are not driven by the profit motive, and generally – though not exclusively – are government funded (OPARAOCHA, 2015). A common objective of these networks, or support systems, is *"to facilitate activities in foreign markets and overcome the sociocultural and resource barriers inhibiting the identification and exploitation of IE opportunities in the international environments"* (ibid., p.5). Examples of institutional network actors in IE are NGOs, financial institutions, business incubators, research institutes, technology foundations, science parks, unions, development agencies, trade associations, professional associations, expert and advisory service centers (GIBB, 1993; OPARAOCHA, 2015). The existence of these organizations is often the result of general and SME-specific development policies, indicating that the classic industry network framework, which is the focus of the business network approach (*e.g.* JOHANSON; MATTSSON, 1987), may not provide a comprehensive perspective on the important factors for the development of firms and economies, and particularly for the development of SMEs and new ventures (GIBB, 1993; HADJIKHANI; THILENIUS, 2005).

The internationalization network of a firm is composed by the actors that allow it to internationalize (ZAIN; NG, 2006). The different networks that a company engages with can be illustrated as three partially overlapping network areas shown in Figure 4. SMEs are believed to be more dependent on institutional relationships for internationalization efforts, even though there is evidence that in specific industries such as IT, biotechnology and other knowledge-based sectors, SMEs do not have such dependency due to internationalization support being provided by the industry network already in place (NAROOZ; CHILD, 2017). It is also common that successful geographical clusters or sectorial networks of SMEs give rise to institutions that promote collective business development services, either as network integrators or as providers of specific support functions (CEGLIE; DINI, 1999).

Figure 4 - General network areas and intersections



Source: Oparaocha (2015, p.4)

Institutional relationships are sought after, specially by SMEs, to overcome their resource constraints and to gain access to resource advantages that cannot be found elsewhere and that enhance their knowledge capacity and resource control, facilitating internationalization (OPARAOCHA, 2015). The resource advantages provided are either hard or soft, meaning tangible or intangible, with soft benefits having a varying level of influence on the amount of resources under the control of the firm. While Gibb (1993) highlighted the importance of institutions providing mechanisms through which SMEs can articulate specific needs, Oparaocha (2015) found that lack of awareness of the available institutional resources may be a relevant issue, and that the main resources sought after through institutional networks in small open economies (SMOPECs) were advisory and knowledge-support services, financing information, partner search and foreign business contacts, market information, innovation subsidies and FDI incentives. Different types of knowledge and the possibility to expand the firm’s business network during the early phases of internationalization were found to be the main benefits provided by institutional networks in the internationalization process of SMEs in SMOPECs, which suggested a positive impact on the speed of internationalization and a reduction of risks and uncertainty, though support from institutional networks in the idea generation phase was also reported.

According to Gibb (1993), the most effective support from institutions is provided when they act in entrepreneurial fashion. Institutions have to develop their own network in order to assure that they can support businesses and have the capability to provide flexible, differentiated and innovative responses to the business community. This will be manifested in the institution’s ability to find complementary resources, link disparate networks and support the building of partnerships. Similar to entrepreneurs, institutions need to overcome competition between them in order to harness optimal support to businesses, and this seems to be more easily achieved by institutions that act as network integrators as opposed to specific resource providers (CEGLIE; DINI, 1999; GIBB, 1993). Still, there are many questions regarding how institutional support services should be organized and delivered to businesses. One extreme position is the concept of “one-stop shop” institution providing integrated business assistance, while the opposite view is the development of decentralized local institutional networks where institutional actors are highly informed of each other’s capabilities and can guide businesses in seeking support effectively (GIBB, 1993).

In general contrast with business network research, entrepreneurship literature frequently categorizes networks according to their function (SLOTTE-KOCK; COVIELLO, 2010). Institutional networks can be used to seek for advice, therefore making institutional actors part of the entrepreneur’s advice network (RAMSDEN; BENNET, 2005). The highest impact of external advice networks seems to be on uncertainty reduction by increasing the firm’s ability to cope with and manage problems. A comparison between the different type of actors in advice networks revealed that institutional actors have advantages such as higher clarity of entry points, impartiality and independence, as well as being cheaper (usually no direct cost), but have perceived disadvantages regarding quality of information, rigidity and complexity of eligibility criteria, speed and bureaucracy. Also, advice from institutional actors are generally perceived by entrepreneurs as having less impact on business outcomes than advice from other business organizations (*e.g.* business consultants, suppliers, customers).

2.2.2.5 Network approach to internationalization

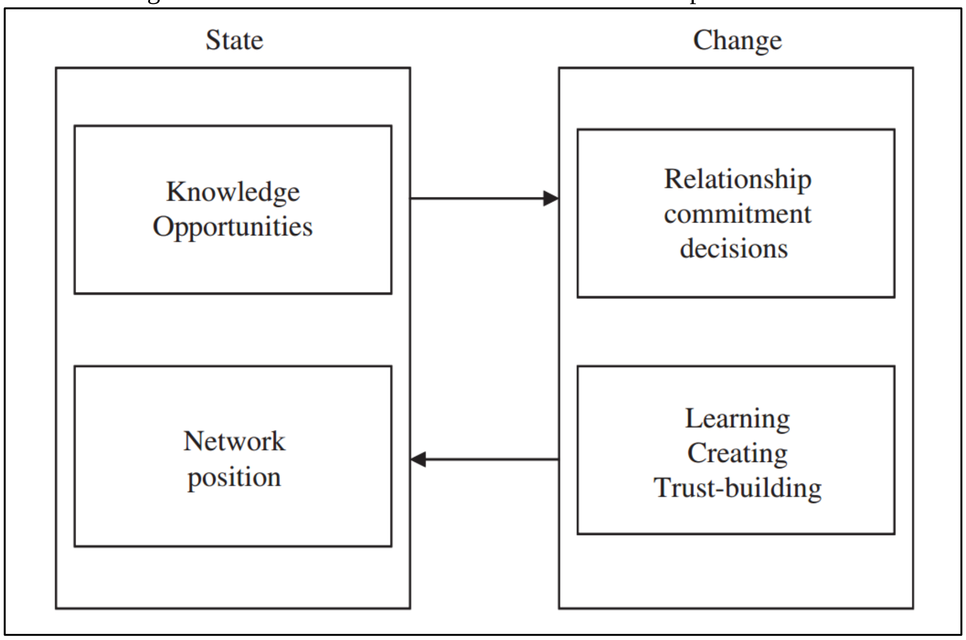
The business network approach (JOHANSON; MATTSSON, 1987) was used as a new perspective by Johanson and Vahlne (1990) to understand their previously developed internationalization process model (JOHANSON; VAHLNE, 1977) and discuss some of the aspects which had been neglected in its first iteration. Involvement in an industrial network, composed by a set of business relationships (firm level), was said to provide the firm with knowledge, therefore a firm's knowledge of the market and its operations is dependent on the current set of business ties. For a foreign company to take part in a host country network, local actors have to be somehow motivated to interact with the internationalizing firm. This is why firms can internationalize also as the result of being pulled in by local network insiders, as opposed to being the result of an active pursuit for growth, such as when a large internationalized customer takes a supplier into a host country. Specifically, small firms seem to be more willing to respond to outside network stimulus to internationalization (JOHANSON; VAHLNE, 2003). Further, the authors observed that different industrial networks in different countries have varying levels of internationalization, which could be expected to have implications for the internationalization process.

Johanson and Vahlne (2003), acknowledging the increasing number of empirical research evidence showing the declining validity of the Uppsala model due to increased global competition and accelerating technological developments, outlined a network model of the internationalization process further underscoring the role of network dynamics in internationalization. According to the authors, previous IB theories saw country markets as individual entities fenced by economic, institutional and cultural barriers to business activity, and, once inside a country, the market mechanism would function without barriers. Those theories conceptualized internationalization as the overcoming of barriers to market entry and later expanding within the market. Differently, from a network perspective, internationalization is about actions aiming to establish and develop specific business relationships with actors, customers or suppliers, in order to improve or protect the firm's network position (JOHANSON; VAHLNE, 2003). Country markets are not a priori relevant entities in this process, therefore market entry and market expansion have no relevant differentiating traits, and nothing is posited by the network model regarding to which country a firm's relationship establishment and development process will lead it to since such pattern depends on the firm's judgement of which are its strategic relationships that provide the most appealing opportunities that must be nurtured and around which new relationships shall be developed. The current set of business relationships are the determinant factor as far as particular geographical market and entry mode decisions since they enable the identification and exploitation of specific opportunities (JOHANSON; VAHLNE, 2009). Consequently, the experiential knowledge and commitment in internationalization concerns business partners, not country markets, as previously thought. A firm learns about a partners' needs, resources, capabilities, business context – the other relationships the partner is engaged with – and strategies by interacting and committing additional resources to the relationship.

In further revising their previously outlined model, Johanson and Vahlne (2009) expanded their original concept of learning to fit a network context. In networks, other than learning about a *market*, or even about a *business partner*, the firm seeking to strengthen its position would benefit from *institutional market knowledge* (*e.g.* language, laws and rules), *general internationalization knowledge* (*e.g.* entry modes, alliances and acquisitions) and *general relationship knowledge* (ways of developing and coordinating different types of relationships in different situations). Trust is a vital element of relationships (GRANOVETTER, 1985), and seen as an important factor in learning and in exchange and creation of knowledge in relationships, therefore becoming a prerequisite for commitment in business relationships (JOHANSON; VAHLNE, 2009).

The revised business network internationalization model (Figure 5) has two state variables and two change variables. The first state variable is *knowledge*, composed by relationship knowledge regarding needs, capabilities, strategies and networks of firms directly and indirectly linked to the focal firm. *Knowledge* also includes knowledge of opportunities, regarded as the most important dimension of this variable. The second state variable is *network position*, defined as the current set of relationships, each composed by a specific level of knowledge, trust and commitment among partners, that constitute a base for opportunities as well as constraints (JOHANSON; MATTSON, 1987) and define how beneficial current relationships are (SCHWIZER *et al.*, 2010). The first change variable, *relationship commitment decisions*, refers to increases or decreases in commitments to a relationship that change the level of mutual dependence between partners, and can also relate to the establishment of new relationships or attempts to connect different business networks. The second change variable is composed by *learning* and *creating* (knowledge) as well as *trust-building*; the activities that lead to increased knowledge, trust and commitment.

Figure 5 - The business network internationalization process model



Source: Johanson and Vahlne (2009, p.1424)

Since everything that happens is seen in the context of relationships, having a well-established set of business relationships in relevant networks (*insidership*) is a necessary condition to business development (JOHANSON; VAHLNE, 2009). As such, in the network model of internationalization, lack of relevant relationships in the network is the main barrier to the firm's internationalization since it is through them that firms build trust and commitment and learn – the critical components for internationalization. *Insidership* benefits contrast with *liability of outsidership*, which are the difficulties caused by the lack of understanding regarding business environment – the set of relationships that potential partners are engaged with, or trying to establish, and the invisible network patterns that affect them.

Although recognizing the existence of changes in company's behaviors since the initial behavioral internationalization model was developed in the seventies, Johanson and Vahlne (2009) related such changes to business environment changes, not with emergence of new internationalization mechanisms, and used the network model to provide their perspective on entrepreneurial internationalization and international new ventures. First, they highlighted that many of the said born globals were in fact born regionals, an observation also made by others

(CHANDRA; STYLES; WILKINSON, 2012; LOPEZ; KUNDU; CIRAVEGNA, 2009), which made their internationalization pattern to a greater extent less chaotic and more compatible with the network internationalization model. Also, since born globals were usually ventures from internationally experienced entrepreneurs (OVIATT; MCDOUGALL, 1995), it would be natural to expect that, if relevant knowledge and network relationships were established in previous events of their lives, the time to acquire relevant knowledge and build necessary relationships was null and the venture was able to internationalize simultaneously to its foundation – the effect of previously built network ties was also later acknowledged by Oviatt and McDougall (2005) as a factor influencing internationalization speed.

Johanson and Vahlne (2009) stated that the relationship interactions that build trust and commitment may be performed more quickly than they were in the past, therefore affecting internationalization speed, albeit not its elements and process – which is in contrast with Oviatt and McDougall's (1997) claim that several changes since the seventies had created a combination of forces that affected the internationalization process, a perspective also shared by other IB scholars (*e.g.* MATHEWS; ZANDER, 2007). Interestingly, McDougall and Oviatt (1995, 1999) as well as Johanson and Vahlne (2009) highlight that the increased number of internationally experienced professionals is a relevant factor in internationalization research but, while the former observe it as one of the many enabling factors that explain the growth in number of INVs, the latter limit themselves to noting that this displaces the important level of analysis of psychic distance from the firm level to the individual decision-maker level, since some individuals are more confident in dealing with international settings. Observing other contrasts between the competing behavioral theories of internationalization, Autio (2005) pointed out that while the process models of internationalization tend to focus on the barriers to internationalization, international entrepreneurship literature focuses on the enabling factors instead.

Oviatt and McDougall (1994) also highlighted the role of networks as one of the alternative governance structures that international new ventures use to control vital assets, since they do not have enough resources to own such assets, or internalize the related activities. The social control provided by networks is presented by the authors as an efficient – although risky – alternative to other hybrid structures (*e.g.* licensing, joint ventures), which could be used to share resources while protecting proprietary knowledge.

2.2.3 International Entrepreneurship

2.2.3.1 Introduction

International Entrepreneurship (IE) is a research domain located in the intersection of international business studies and entrepreneurship research (MCDOUGALL; OVIATT, 2000). International entrepreneurship researchers use frameworks and theories from IB and entrepreneurship, which are also multidisciplinary and evolving fields of studies (COVIELLO; MCDOUGALL; OVIATT, 2011). Anthropology, economics, strategic management, psychology, finance, marketing, sociology, knowledge management and economic geography are mentioned as relevant research fields from which IE studies benefit from (COVIELLO *et al.*, 2011; JONES *et al.*, 2011; OVIATT; MCDOUGALL, 2005). Such diversity is incentivized by calls for further multidisciplinary research in IE as a means of further developing the understanding of the highly complex IE-related phenomena (JONES *et al.*, 2011).

Despite IE literature presenting theoretical inconsistencies, conflicting predictions and knowledge gaps (KEUPP; GASSMAN, 2009), the field of IE has gone through a process of differentiation, mobilization and legitimacy building (COVIELLO *et al.*, 2011). IE research includes analysis of the phenomenon of entrepreneurship crossing borders (*i.e.* entrepreneurial internationalization) and comparative studies of entrepreneurial systems, behaviors and cultures across countries (OVIATT; MCDOUGALL, 2005). Jones *et al.* (2011) also identified a third and more recent type of IE research: studies in which entrepreneurial internationalization is compared across countries, cultures or both.

2.2.3.2 International entrepreneurship research

McDougall (1989) described the then-existing international entrepreneurship research as a string of entrepreneurship literature concerned with comparisons of entrepreneurial activity among countries, and observed that the literature lacked analysis of the differences between entrepreneurs that competed domestically and those that also ventured internationally. The author empirically differentiated between domestic new ventures (DNVs) and international new ventures (INVs) and provided an early definition of international entrepreneurship (IE) as a phenomenon, being described as *"the development of international new ventures or start-ups that, from their inception,* *engage in international business"* (p.387). A certain percentage of sales derived from international markets was used as criteria for determining which new ventures were considered international.

The analysis of DNVs and INVs revealed differences between the two groups regarding industry structure and venture strategies. In strategic terms, INVs focused on broad market coverage through multiple distribution channels and coverage of various customer segments. This was possible due to the use of external production and financial resources, which characterizes a high level of firm interdependence. Intellectual property was the way through which INVs sought to protect their advantage since they were not able to internalize many activities. Regarding industry structure, level of international competition and government regulation were perceived to be higher by INVs, although it was not possible to infer causality between these factors and internationalization – internationalization itself could lead to these heightened perceptions, instead of these being objective structural characteristics influencing international venturing.

Oviatt and McDougall (1994) observed that the then-dominant internationalization process model (JOHANSON; VHALNE, 1977) did not apply to an increasing number of international new ventures (INVs), which they defined as *"business organizations that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries"* (p.49). The authors considered the observable commitment of resource to international activity as the criteria to distinguish international new ventures, but this did not imply the ownership of foreign assets since alliances could be used to control resources. IE literature commonly adopted a period within which, if commitments to international activity were observed, the venture was considered to be an INV (OVIATT; MCDOUGALL, 1997). Foreign sales revenue was usually the defining commitment measure since selling was said to be more difficult and distinctive than obtaining foreign inputs (OVIATT; MCDOUGALL, 1997). More recently, INVs and other accelerated internationalizing firms were understood as firms that leverage geographically dispersed knowledge, resources and skills that would not be otherwise available, instead of simply taking a previously built domestic advantage to a foreign market – a common simplification of push-oriented IB research (MATHEWS; ZANDER, 2007).

These new and small ventures were enabled to compete internationally due to technological impacts on the cost and quality of communication and transportation, coupled with less constrained access to foreign funding and homogenization of many global markets, which eroded the advantages that MNEs derived from internal hierarchy coordination, which many believed to make them more capable to internationalize (OVIATT; MCDOUGALL, 1994). This coincided with the greater importance given by strategic management literature to the possession of unique assets as determinant of international sustainable advantage, as opposed to firm size and scale. Among these assets, network position was increasingly seen as a source of competitive advantage due to its provision of unique knowledge and information (DYER; SINGH, 1998). IB scholars also deemed the increased international mobility of citizens and global institutional harmonization regarding laws, business practices and intellectual property rights as other enabling factors for the rise of INVs and overall increased internationalization (MATHEWS; ZANDER, 2007).

The need for understanding of INVs was underscored by the increasing prevalence of global competition (OVIATT; MCDOUGALL, 1995) and by the possibly systemic origins of rapid internationalization suggested by the emergence of INVs all around the globe (OVIATT; MCDOUGALL, 1997). According to McDougall *et al.* (1994), the failure from existing IB theories in explaining INVs stemmed from their assumption that firms become international only after already in existence, and from their excessive focus on the firm level of analysis and little attention given to individual and small group level. Oviatt and McDougall (1997) argued that existing process models were losing their applicability due to the changing global market conditions, and that the network explanation of INVs provided by Johanson and Vahlne (1990) was *"abbreviated and informal"* (p.89) and did not consider INV antecedents and its associated conditions in detail.

McDougall *et al*. (1994) explained INVs by answering *who* founds them, *why* they are international from inception and *what forms* their business activities take. INVs are said to be formed by alert entrepreneurs who, using unique capabilities (network, knowledge and background), are able to see opportunities to combine resources across national borders. These entrepreneurs decide to compete internationally form inception to avoid domestic inertia that would jeopardize later international venturing by making it difficult to implement organizational practices and capacities needed to serve other markets and succeed in international environments – what was later named *learning advantages of newness* in international expansion by Autio *et al*. (2000). The form which the international activities take shape are heavily dependent on the funding of the INV, with resource constrained ventures relying on hybrid structures (*e.g.* franchises, licensing) and strategic alliances to coordinate resources. Also, a large amount of INVs were in highly technological and specialized niches, with significant international markets (MADSEN; SERVAIS, 1997).

Keupp and Gassman (2009) observed that the acceptance of the INV definition and their central position in IE marked the early development of the field and led to many empirical contributions and to the dominance of a phenomenological approach to IE research, as opposed to theory-based. When theoretical frameworks were used, mostly mainstream IB theory frameworks were applied. This was partly attributed to the development stage of entrepreneurship as a theoretical field being much lower if compared to IB.

Part of the initial IE literature was concerned in understanding the necessary conditions for the success of INVs: international vision from inception, entrepreneur's international experience, existence of international business networks, technical or marketing knowledge to displace local competition and an intangible nature of the assets producing competitive advantage, providing imperfect imitability (OVIATT; MCDOUGALL, 1995). More than the existence and success of INVs, IE was concerned with explaining the accelerated nature of their internationalization. Speed of internationalization was approached in three aspects: the time between the formation of an entrepreneurial opportunity and its internationalization, the amount of countries to which internationalization leads to and how psychically distant they are and, lastly, the evolution of the amount of commitment, or dependence, to foreign market.

Departing from the previous empirical focus of IE studies, Oviatt and McDougall (1999) used data from the OECD and UN's Conference on Trade and Development (UNCTAD) to propose a framework that could be used for the developing a theory to explain accelerated entrepreneurial internationalization. Different from the Uppsala model, the framework attempted to accommodate the business context of INVs. As such, at least three different industry structures were said to relate to rapid internationalization: first, in mature global industries with large investment requirements, it is common for the outsourcing of non-core activities by MNEs to provide opportunities for the emergence of rapidly internationalizing new ventures that support those companies; second, new industries and niche markets with low capital investments provide a natural environment for new ventures with specialized knowledge to internationalize rapidly; third, certain industries in particular locations are composed by existing industrial networks that provide the structure for rapid internationalization. The authors replaced the focus on tacit knowledge (JOHANSON;

VAHLNE, 1977) with technological change as the foundation of accelerating internationalization, with the speed of internalization being connected to the ability to create, acquire and use technological innovation – *e.g.* the internet enabled a single entrepreneur to engage in international sales through digital commerce. Technological change was said to influence and interact with political economy, industry competitive conditions, *firm effects* (size, strategy, technology, alliances, flexibility and transaction complexity) and increasingly internationally experienced entrepreneurs and management teams. The combination of these factors and relations among them could possibly be developed into a theory to explain variations in internationalization patterns regarding speed, entry modes, breadth (*i.e.* which value chain activities are international) and roles played by the INVs in their industry (OVIATT; MCDOUGALL, 1999).

The IE field broadened and McDougall and Oviatt (2000) identified overlaps with innovation, change management and strategic management. Also, organizational level of analysis as well as individual and small group were included in the scope of IE, along with corporate entrepreneurship. In a review of the first twenty years of research in the international entrepreneurship area, Jones *et al.* (2011) argued that, despite not having any single unifying framework, an ontological perspective of IE revealed that it had increased in coherence in several thematic areas.

McDougall and Oviatt (2005), drawing from entrepreneurship literature (*e.g.* SHANE; VENKATARAMAN, 2000), redefined the phenomena of international entrepreneurship as *"the discovery, enactment, evaluation, and exploitation of opportunities—across national borders—to create future goods and services."* (p.540). This supported a transition in IE research, from its early focus on the phenomena of small and young companies venturing abroad, to the understanding of IE as a general phenomenon with its own conceptual grounds and with emphasis on opportunity recognition (KEUPP; GASSMAN, 2009). This is exemplified by Mathews and Zander's (2007) earlier analysis of IE as a dynamic process of modern international business organized around three main issues: the identification of opportunities in an international context, deployment of resources to exploit these opportunities and engagement in international competition. The authors argued that the IE dynamic process were distinct from entrepreneurship due to the unique opportunities and constraints arising from the crossing of national borders and contexts, which influenced the character and development of the entrepreneurial process.

More recently, the field of IE grappled with two issues to which it had provided inconsistent, conflicting or lacking results: the explanation of why accelerated internationalization was possible and the entrepreneurial nature of internationalization (KEUPP; GASSMAN, 2009). Attempting to clarify the first issue, Oviatt and McDougall (2005), modelled internationalization speed in terms of enabling, motivating, mediating and moderating forces. In their model, technology is the foundational enabling factor in the form of increasingly lower cost and higher quality transportation, communication and information processing. Competition motivates internationalization by being a threat to future value capturing efforts by the entrepreneur in other countries. The entrepreneur's subjective perception of technology and competition mediated the effect of enabling and motivating factors. The moderating forces are two: knowledge and international network. Knowledge includes market knowledge and knowledge intensity. Knowledge intensity refers to novelty, complexity and sophistication of the product or service offered by a firm, and has three levels: firms that use well-established technologies, firms that use complex product design or operations knowledge and, lastly, knowledge-based firms – those in which knowledge is the asset that justifies the venture's existence and gives it competitive advantage. Since knowledge is mobile at almost no cost, the more knowledge dependent is the competitive advantage of the firm, the easier it will be to transfer it to other markets (AUTIO *et al*., 2000). Networks are important because network ties present opportunities of foreign market entry that help explain the patterns of country scope and commitment in internationalization processes. Size, density and strength of ties are the structural characteristics that define the moderating impact of networks on internationalization speed. Weak ties are deemed as the important ones for rapid internationalization, especially ties to brokers who are able to link distinct network clusters, while stronger ties lead to higher network density and increased trust caused by behavior monitoring that is more efficient.

The debate of internationalization speed was linked to the issue of clarifying the entrepreneurial nature of internationalization by Chandra *et al*. (2012). The authors found that regardless of speed, internationalization process is an evolutionary path-dependent process of opportunity development and cross-border venturing, and such process is shaped by networks – both domestic and international. Analyzing internationalization from an *opportunity-based view* (OBV), a specific emerging lens from IE, the authors shifted focus away from the legal entity of a new firm to the understanding of how actors, resources, history, networks and context evolve across time in order to understand opportunity related behavior, events and processes. Removing the issue of venture age from the analysis, Chandra *et al.* (2012) found that the distinction between gradual and rapid internationalization was only possible when ignoring actor's history prior to INV establishment since, if not ignored, history showed a similar process of opportunity identification and development, followed both by large gradually internationalizing companies and by INVs, in which knowledge, resources, networks, orientations, market learning and commitment interact and evolve over time and adapt through feedback loops. The process is non-deterministic and feedbacks may result in slower or even cessation of internationalization. This harmonizing view of gradual and rapid internationalization is illustrated by INVs that internationalize form inception but rely on knowledge that accumulated throughout years of scientific research in universities, which eventually enable the exploitation of opportunities in highly technological global market niches.

2.2.3.3 Internationalization and opportunities

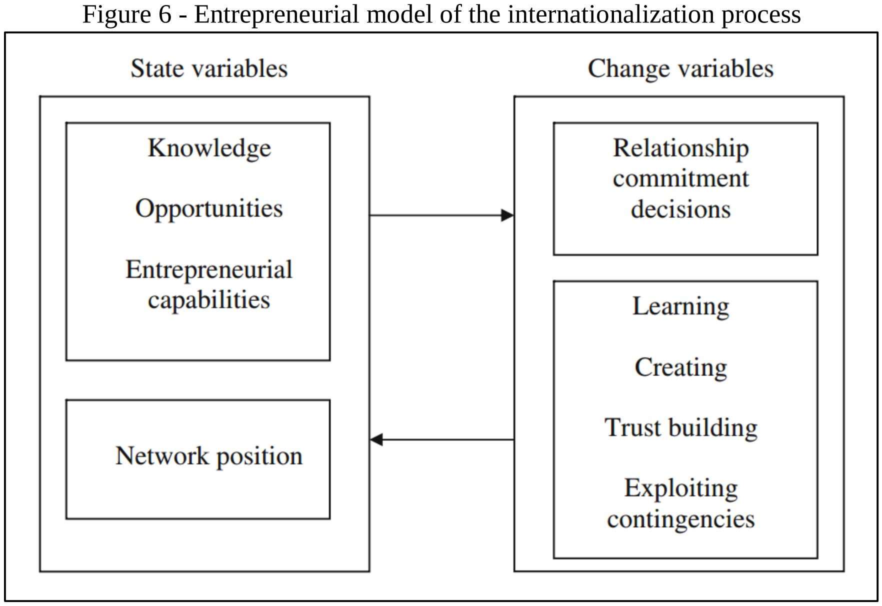
Despite modelling internationalization with focus on risk control, Johanson and Vahlne (1977) believed opportunities perceived by people involved in foreign market operations were the motivation for furthering market commitment, and knowledge and commitment framed the perception of opportunities and risk. In the network approach to internationalization, opportunities are the main reason behind the commitment to a relationship (JOHANSON; VAHLNE, 2009).

Growing research clarified the impact of market commitment on knowledge and opportunity development (JOHANSON; VAHLNE 2006). Commitment is the basis for firms learning about each other, and opportunities develop from relationships because partners' interactions give them access to privileged information embedded in networks and knowledge about each other and their other relationships, as well as allow them to create new knowledge about new business opportunities (JOHANSON; VAHLNE 2006, SCHWEIZER *et al.*, 2010). Knowledge therefore has not only a role in reducing uncertainty of relationship commitments, but also in driving identification and development of opportunities (JOHANSON; VAHLNE 2006). This association of network relationships and opportunities implies that resources external to the firm are partially available through relationships (JOHANSON; VAHLNE, 2009). Mathews and Zander (2007), highlighted the opportunity potential of internationally dispersed knowledge, resources and skills, and argued that the discovery of international opportunities, venture formation and internationalization are all processes described by the establishment of inter-firm connections across dispersed economic activity, enabled by entrepreneurial alertness and strategic action.

Johanson and Vahlne (2009) emphasized similarities between opportunity development and internationalization processes, viewing as exaggerated the importance given by Kirzner (1973) to the role of serendipity in opportunity discovery. From a network view of the market, Johanson and Vahlne (2009) equated opportunity identification to relationship learning and opportunity exploitation to relationship commitment. Considering learning and commitment to be interdependent, the ideas of exploration and exploitation (March, 1991) are proposed to be overlapping by the authors, similar to what is implied by the opportunity identification and development theory proposed by Ardichvili *et al.* (2003). Johanson and Vahlne (2009) concluded that opportunity development is not only an analogous process to internationalization, but in fact it is the driving mechanism on which internationalization is contingent on – replacing the overcoming of uncertainties from their previous model. More recently, internationalization itself has been described as an innovative entrepreneurial process where opportunities are identified, developed and exploited (CHANDRA *et al.*, 2012).

Furthering these ideas, Schweizer *et al.* (2010) explained the internationalization process as a by-product of entrepreneurial action – managers and entrepreneurs identifying and developing opportunities to increase effectiveness, growth or both – and highlighted the entrepreneurial nature of the business network internationalization process model, coherent with the fact that the model disregards countries as entities and emphasizes business development in networks, which may or may not involve internationalization. Based on a case study and prior research on opportunity recognition and development (ARDICHVILI *et al.*, 2003; KIRZNER, 1973; SHANE, 2000) and effectuation (DEW; SARASVATHY, 2002; SARASVATHY, 2001a), Schweizer *et al.* (2010) added to the network model the importance of alertness to opportunities, personal relationships (in addition to business) and creativity. Effectuation logic was used by the authors to highlight that some occasions require flexibility from entrepreneurs in order to use contingencies as opportunities, also being required to act in the face of uncertainty and ambiguity, because the information required to apply predicting tools simply does not exist (SCHWEIZER *et al.*, 2010). The authors found that entrepreneurial optimism related to self-efficacy does influence opportunity identification, but such optimism does not necessarily extend to a general higher risk-taking propensity. Based on these findings, a revision of Johanson and Vahlne's (2009) model was proposed. In the entrepreneurial model of the internationalization process, shown in Figure 6, one new state variable and one new change variable were added; *entrepreneurial capabilities* was added alongside *knowledge* and *opportunities*, and of *exploiting contingencies* was added alongside *learning*, *creating* (knowledge) and *trust building*. *Entrepreneurial capabilities* mean the ability to live with uncertainty, ambiguity and flexible objectives. Although the model leaves entirely up to contextual factors to determine whether the entrepreneurial process leads to internationalization and which mode of entry will be involved, Schweizer *et al.* (2010) remarked that small countries and high technology industries, which seem to be more globally networked than others, are contexts in which entrepreneurial action frequently results in internationalization.

Figure 6 - Entrepreneurial model of the internationalization process



Source: Schweizer et al. (2010, p.365)

2.3 EFFECTUATION

Most economics and management literature assume the existence of the central artifacts and contexts within which decisions are made and rarely address the creation of artifacts (*e.g.* firms, industries, markets, economies) (SARASVATHY, 2001a). Effectuation theory sought to clarify how entrepreneurial decisions are made when ventures are being created since the entrepreneurs' goals are usually general and imprecise when they begin creating their businesses.

March (1976) discussed the presumption of preexisting goals as a need of decision-making theories; such theories required the objective as a given attribute in order to analyze the intelligence of a decision. According to Sarasvathy (2001a), research on decisions under uncertainty predominantly involved causation process. The presumption of goals is evident in causation: *"Causation processes take a particular effect as given and focus on selecting between means to create that effect"* (ibid., p.245). This view of decision making was dominant in economics and management, and also in entrepreneurship and IB (SCHWEIZER *et al.*, 2010).

Differently, in effectual reasoning, what is given is not the objective (*e.g.* the venture that an entrepreneur wishes to create) but the means (or causes) available to the entrepreneur (the decision maker). More generally: *"Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means"* (SARASVATHY, 2001a, p.245). Goals are constructed over time by the entrepreneur and are shaped by different contingencies that cannot be foreseen.

According to Sarasvathy (2001a), the primary set of means for the decision maker are: who they are (traits, preferences and skills), what they know (their own knowledge corridor) and who they know (networks). The effectuation set of means has come to be known as *identity*, *knowledge* and *networks* (WILTBANK; DEW; READ; SARASVATHY, 2006). This set of means, combined with contingent events, enable the decision maker to construct an effect by answering the question "what can I do with the resources I have in the face of emerging events?" (SARASVATHY; KUMAR; YORK; BHAGAVATULA, 2014), without the need of well-defined preexisting goals – those become clearer with the increase in commitments made by the decision's stakeholders. The decision making context assumed by effectuation is compatible with the idea of true uncertainty (as opposed to measurable risk), defined by Knight (1921), who understood it as the correct characterization of the imperfect knowledge present in business due to the inevitability of contingencies, and also as the factor that explained entrepreneurial profits and losses (KNIGHT, 1921, p.lxi). As articulated by Alvarez and Barney (2007):

> A decision making context is risky if, at the time a decision is being made, decision makers can collect enough information about a decision to anticipate possible outcomes associated with that decision, and the probability of each of those possible outcomes. A decision making context is uncertain if, at the time a decision is being made, decision makers cannot collect the information needed to anticipate either the possible outcomes associated with a decision nor the probability of those outcomes. (p.14)

Sarasvathy's (2001a) theory departed from the existing perspectives on decision making of unbounded and bounded rationality, which together supported the following idea: if the decision maker believes the risk of different outcomes in a decision can be measured, he or she will gather information and analyze it (analytical approach) – even if bounded by physiological and psychological limitations; if the decision maker believes he or she faces uncertainty, he or she will try to eliminate uncertainty by experimenting and learning iteratively (Bayesian approach) until reaching a measurable risk situation. From this perspective, the different approaches used by decision makers – analytical techniques, estimation, heuristics and inductive logic – are used to interpret which context they believe they operate. Instead, effectuation posited that in the face of uncertainty, rather than trying to eliminate it, the decision maker relies on four principles:

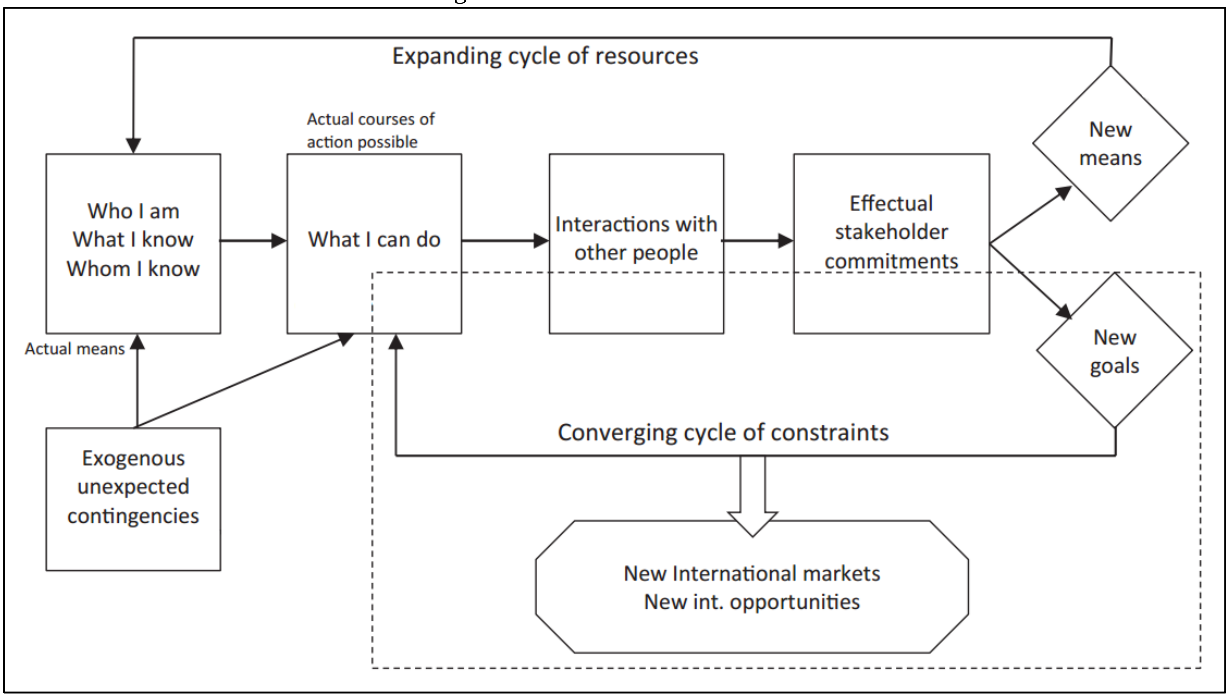
- *Affordable loss*: based on given resources, the decision maker imagines possible effects and chooses between them based on the loss that can be afforded, with preference for the effects that are believed to yield more possibilities in subsequent decisions;
- *Strategic alliances*: commitments from stakeholders are used to reduce uncertainty;
- *Exploitation of contingencies*: unexpected events are used to create advantages;
- *Replace predicting the uncertain with controlling the unpredictable*: *"to the extent that we can control the future, we do not need to predict it"* (SARASVATHY, 2001a, p.252);

Dew, Read, Sarasvathy and Wiltbank (2009) separated the *affordable loss principle* and *means-oriented actions* as two separate effectuation heuristics principles. Affordable loss, specifically for the venture foundation decision, means that the opportunity cost of a wage job or the assessment of real options are not considered, which is how this decision had been traditionally approached in entrepreneurship literature (SARASVATHY *et al.*, 2014). *Means-orientation* replaces the goal orientation from causal approaches. The effectual process posits that the *alliances* in which the entrepreneur engages are not based on specific targeting of stakeholders (SARASVATHY; DEW, 2005). Instead, the entrepreneur will engage with people that they already know, or with whom contact is already established, seeking to negotiate their commitment. *Exploitation of contingency* means that the absence of preexisting goals and the evolving nature of resources and commitments in the effectual process enable experimentation, openness to serendipitous discovery and eliminate the needs to conform to an initial plan (SARASVATHY *et al.*, 2014). The *replacement of prediction with control* unfolds from the assumption that the environment is at least partially shaped by the entrepreneur, as opposed to completely defined by exogenous factors (DEW *et al.*, 2009).

Sarasvathy (2001b) found that expert entrepreneurs, defined as *"a person who, either as an individual or as part of a team, has founded a company, remained with the company for several years, and taken it public"* (p.4), use effectuation principles more often than causal rationality. Studying the entrepreneurship domain as an expertise, Dew *et al.* (2009) found that experienced entrepreneurs rely more on these effectual principles than novice entrepreneurs, and Read, Song and Smit (2009) concluded, based on a meta-analytic study, that there is positive correlation between focus on means-oriented actions and venture performance.

Sarasvathy and Dew (2005) discussed the effectual network and processes that arise from it when using effectuation to create a new venture. Such a network consists of stakeholders who have negotiated and committed with the entrepreneur during the formation of the venture. Every new commitment made to the effectual network sets in motion two simultaneous processes. The first is an accumulation of resources available as means for entrepreneurial decisions and actions, and the second is the increase in the amount of constraints added to decisions and actions, which results in narrowing the possible goals that can be achieved by the venture – despite the increased available resources – due to the commitments made with the joining member of the effectual network. The processes and the mechanism that sets them in motion are shown in Figure 7.

Figure 7 - The effectuation model



Source: Sarasvathy (2008, p.101)

Sarasvathy (2001a) connected effectuation to important issues on management literature, highlighting that by addressing control over prediction, endogenous goal creation and the partially constructed nature of environments, effectuation theory integrated relevant previous research. First, there is a connection between causal rationality and the exploitation of known certainties (MARCH, 1991), and between effectual rationality and the exploration of new possibilities, and the decision of allocating resources between exploration and exploitation is better understood as an effectual decision model (SARASVATHY, 2001a). It is also suggested that effectuation processes emphasize synthesis and action over analysis and prediction and are a possible alternative to the problem of strategy formation (MINTZBERG, 1994). Lastly, Sarasvathy (2001a) related effectuation to the theory of enactment, implying that the basic decision unit of environment enactment and sense making is compatible with effectuation, not causation (even if Weick's (1979) work focused on actors within organizational processes).

2.3.1 Effectuation and internationalization

Effectual rationality is about controlling what can be done with the available resources, as opposed to causation which is about deciding what ought to be done in order to optimize decisions about means, given what is predicted to happen (SARASVATHY; DEW, 2005). Effectual rationality models the frequently unintentional nature of internationalization, in the sense that what is sought are improvements in efficiency or growth, not internationalization itself, which is a possible result from efforts in improving the firm's network position (SCHWEIZER *et. al.*, 2010). As such, effectuation obscures the relevance of the decision on *whether* to internationalize or not, and puts the issue of *how* internationalization happens as the central question of internationalization, with trust, commitment, cooperation, contingent contracting and conflict resolution as process variables (SARASVATHY *et al.*, 2014)

Effectuation logic does away with the need to predict by emphasizing control over what will happen (DEW; SARASVATHY, 2002), therefore turning uncertainty into opportunity. This parallels the gradual change in the work of Johanson and Vahlne (1977, 1990, 2003, 2006, 2009) and the way which the authors approached the internationalization process. Three premises lead to the conclusion that uncertainty is irrelevant from the effectuation process perspective (DEW; SARASVATHY, 2002). First, decision-making is guided by the principle of *affordable loss*, instead of being based on expected outcomes (SARASVATHY, 2001a), which makes the entrepreneur focus only in limiting the possible downsides of decisions. Second, entrepreneurs use possible stakeholders to be involved in order to define a business venture, instead of using a predictive image of the business in order to define the potential partners (*e.g.* suppliers, financiers). Lastly, the entrepreneur uses vague business ideas to leverage the emergence of contingencies by dealing with them as opportunities to exercise control. This stance enables the entrepreneur to incrementally build business goals based on new information and resources. For effectual rationality, uncertainty is no longer an obstacle, but an advantage to be leveraged in internationalization, an essentially entrepreneurial process (SCHWEIZER *et al.*, 2010).

Effectuation principles and processes were combined by Sarasvathy *et al.* (2014) to frame effectuation as a non-predictive control strategy that is preferred by expert entrepreneurs, contrasting it with the common predictive strategic planning tools. From this perspective, effectuation theory can be used to analyze three characteristics of internationalization that have been central to international entrepreneurship (SARASVATHY *et al.*, 2014): cross-border uncertainty, network dynamics and limited resources.

Conducting business across national borders increases uncertainty and may require, even in large organizations, actions that use the *means-oriented actions* to proceed with internationalization (ibid.). Knowledge and access to international networks are frequently mentioned as driving factors of internationalization, both in process models and in rapid internationalization frameworks (JOHANSON; VAHLNE, 2009; OVIATT; MCDOUGALL, 2005), and they are highly representative of the primary set of means of effectual decisions – identity, knowledge, networks (SARASVATHY, 2001a). While IE research has frequently focused on the antecedents of entrepreneurial internationalization (OVIATT; MCDOUGALL, 2005), effectuation suggests that the entrepreneurial process that leads to internationalization should be perceived as shaping some of those antecedents as well, a view of the environment as partially enacted (VENKATARAMAN; SARASVATHY; DEW; FORSTER, 2012; SARASVATY *et al.*, 2014).

Concerning limited resources, IE research depicts entrepreneur's decisions as based on the affordable loss principle (SARASVATY *et al.*, 2014), since they often lead to use of alliances and hybrid modes of organization and minimal use of internalization of activities (OVIATT; MCDOUGALL, 1994), as opposed to optimizing entry modes based on the expected returns. Sarasvathy *et al.* (2014) also claimed that the leveraging of contingencies leads to exaptation strategies (adapting features developed in one environment to be used in others, for different purposes), rendering all resources fungible in the view of the effectual entrepreneur, making the analysis of *how* the entrepreneur uses limited resources as more important than analyzing the amount or quality of resources available.

Lastly, network dynamics in internationalization relate to the effectuation principle of *strategic alliances* and to the network component of the primary set of means available to the effectual entrepreneur (SARASVATHY, 2001a). Sarasvathy *et al.* (2014) argued that IE research would benefit from analyzing networks in the light of means orientation by focusing on what the entrepreneur does with his existing personal network and social capital, and not necessarily on the network structure and composition, which are the main contextual elements highlighted elsewhere in the literature (e.g. ELLIS, 2011; GRANOVETTER, 1973).

Synthesizing the existing IE research that incorporates effectuation and their own insights on the topic, Sarasvathy *et al.* (2014) proposed the Effectual Uppsala model (UE model), which is an effectual interpretation of the entrepreneurial model of the internationalization process (Figure 6). The UE model also understands internationalization as a by-product of entrepreneurial actions in networks and focuses on the entrepreneurial capabilities involved, mainly the use of effectual rationality. The UE model posits that globalization and technological advances generate uncertainties that preclude causal rationality to be effective in business, and those entrepreneurs that learn to deal with Knightian uncertainty acquire expertise in the use of effectual strategies and gain comparative advantage in internationalization (SARASVATHY *et al.*, 2014).

The main difference between the effectuation model (*Figure 7 - The effectuation model*Figure 7) and the one proposed by Schweizer *et al.* (2010) (Figure 6) rests on the emphasis given by the effectuation model to the interactions between stakeholders, to the impact of stakeholder commitment on goals and on the explicit representation of opportunities and markets (or other economic artefacts) as arising from the effectual process, instead of given exogenously (SARASVATHY *et al.*, 2014).

2.3.2 Effectuation and opportunity formation: creation

Effectuation is a theory of human action that adopts the view of the market as a creative process – as opposed to allocative or discovery processes – and for which values and meaning emerge endogenously (SARASVATHY *et al.*, 2003). Sarasvathy (2001a) posited the logic of effectuation as an alternative category of rationality that is different from causal rationality, but the author's development focused on the decisions entrepreneurs make to bring new ventures and markets into existence.

From the effectuation perspective, Sarasvathy *et al*. (2003) defined entrepreneurial opportunity as *"a set of ideas, beliefs and actions that enable the creation of future goods and services in the absence of current markets for them*" (p.142). Effectuation theory claimed that opportunities are not available for discovery or recognition, they result from dynamic interaction and negotiation processes among stakeholders actualizing vague aspirations and values into products, firms and other economics artefacts (SARASVATHY *et al.*, 2003). This is visible in Figure 7, which shows opportunities as outcomes of the converging cycle of constraints on the goals that can be achieved.

In effectual rationality, the market process itself is not independent from the process of creating firms and other economic artefacts: *"before products, there is human imagination, and* *before there is a market, there are human aspirations"* (SARASVATHY *et al.*, 2003, p.261). The stakeholders adding commitments and constraints to the entrepreneurial effectual network are defined by their willingness to participate in the entrepreneurial effort, not by their supposed strategic alignment to the venture (WILTBANK *et al.*, 2006). Whoever joins the effectual network and what they bring to it, together with contingencies, determine the opportunity that will be created (SARASVATHY; DEW, 2005).

Effectuation theory opposed the assumption from the entrepreneurship field that opportunities are objective. The clarity of this assumption in mainstream entrepreneurship research is illustrated by Shane and Venkataraman (2000):

> Although recognition of entrepreneurial opportunities is a subjective process, the opportunities themselves are objective phenomena that are not known to all parties at all times. For example, the discovery of the telephone created new opportunities for communication, whether or not people discovered those opportunities. (SHANE; VENKATARAMAN, 2000, p.220)

Effectuation theory contributed to entrepreneurship in explaining how firms and other economic artifacts (*e.g.* goods and services) come into existence in the absence of current markets for them (SARASVATHY, 2001a) – a fundamental concern of entrepreneurship research (VENKATARAMAN, 1997). The absence of futures markets for all things that will come to exist was brought to light by Arrow (1974) as a way of pointing out some of the limitations of neoclassical equilibrium rationality: the absence of the information provided by futures markets forces the neoclassical optimizer economic agent to perform resource allocation under uncertainty of future quantities and prices.

2.4 ENTREPRENEURIAL OPPORTUNITIES

2.4.1 Entrepreneurship and opportunity

Entrepreneurship as a research field examines *"how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited"* (SHANE; VENKATARAMAN, 2000, p.218). This definition has, since its inception, helped clarify the distinctive domain of entrepreneurship research and put opportunities at the center of it (MAINELA *et al.*, 2017), also helping build consensus on the idea that entrepreneurship is a process dependent on *opportunities* as much as *individuals*, and the nexus between the two, all of which are influenced by other influencing factors (SHANE, 2012). It also illustrates the shift started by Gartner (1988) in entrepreneurship research, from focusing on qualities of entrepreneurs to analyzing entrepreneurship as a behavior. Despite such a shift, most research still focused on actor attributes that influence entrepreneurial process, and not on the effects that the different features of opportunities have, or on the process influences arising from the nexus between individuals and opportunities (DAVIDSSON, 2015).

The academic attention to the opportunity concept is partly due to the outcomes usually (but not necessarily) connected to it, which include new venture formation, new firm establishment and firm growth (SHORT *et al.*, 2010). Davidsson (2015) justified the focus on the fit between entrepreneurs and opportunities arguing that the analysis of the individual alone could never explain the observed empirical variation in entrepreneurial action and outcomes, with serial entrepreneurs usually displaying a series of aborted attempts, failures, mild successes and maybe a few entrepreneurial triumphs. Therefore, the understanding of entrepreneurial opportunity and its connection with the entrepreneur is necessary to offer an explanation as to why different opportunities involving the same actor produce such varied outcomes.

There are many different definitions of what an opportunity is, but Mainela *et al*. (2017) highlighted that the lack of empirical research focused on opportunities could be attributed to the fact that most definitions are abstract, vague and widely different from one another. In Eckhardt and Shane (2003), we find one of the most commonly accepted definitions of entrepreneurial opportunities (MAINELA *et al.*, 2014; SHANE, 2012; SHORT *et al.*, 2010), according to which they are:

> Situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships. These situations do not need to change the terms of economic exchange to be entrepreneurial opportunities, but only need to have the potential to alter the terms of economic exchange. (ECKHARDT; SHANE, 2003, p.336).

This definition does not imply that all pursuits of opportunities are certainly profitable, being possible that the entrepreneur’s conjecture on new means, ends or mean-end relationship turns out to be incorrect and its pursuit results in entrepreneurial losses (SHANE, 2012). What is nevertheless implied in entrepreneurship research is that there must be a higher than zero probability of obtaining profit when exploiting an opportunity, with such financial success being dependent on the entrepreneur having the right ideas on how to exploit opportunities.

2.4.2 Opportunities, arbitrage and innovation

For Kirzner (1973), an opportunity is the existence of the possibility to buy something at a lower price than the price it can be sold for. The producer, a type of entrepreneur that must exist in a world which does not consist of pure exchange activity, is someone who buys all needed resources, including means of production, and sells outputs at a profit, therefore exploiting existing market opportunities. These opportunities exist because of the inability to predict other people's expectations and actions in the market, making the market uncertain and thus unable to achieve equilibrium (KIRZNER, 1973, 1997). Opportunities created by market inefficiencies are labelled *arbitrage opportunities* (MAINELA *et al.*, 2014), and arise from the idiosyncratic nature of information distribution (HAYEK, 1945) and the consequent failure of market mechanisms in producing an equilibrium state (KIRZNER, 1997) due to information asymmetry between market participants (ECKHARDT; SHANE, 2003).

From a different perspective, Schumpeter (1934, 1954) argued that the entrepreneur acts upon new information arising from social, technological, political, regulatory, demographic and other types of exogenous changes in order to innovate and create new materials, processes, products, services, or ways of organizing that are profitable by displacing existing business models. Schumpeterian opportunities are also labelled as *innovation opportunities* (MAINELA *et al.*, 2014), and they arise from the discovery of new means-ends relationships that capture the value of new information (ECKHARDT; SHANE, 2003).

In summary, opportunities can be thought as effects of market imperfections (KIRZNER, 1973), or as the product of the disruption of market equilibrium by entrepreneurial acts that use new information to transform resources in higher valued outputs (SCHUMPETER, 1934). Venkataraman (1997) argued that the view of the entrepreneur as an exploiter of market inefficiencies could be called the *"weak premise of entrepreneurship"* (p.121), while the view of human enterprise as the destroyer of market equilibrium would be the *"strong premise of entrepreneurship"* (p.121). Both premises relate to different sources of opportunities: Kiznerian opportunities come from dispersion of information, Schumpeterian opportunities come from social, political, regulatory, technological (including scientific discoveries and inventions) and demographic changes. Mainela *et al*. (2014) observed that both perspectives equate entrepreneurship to the creation of new economic activity. Also, these perspectives of entrepreneurial opportunities do not limit them to any specific organizational context, and do not imply the creation of organizations as an outcome of opportunities, or that the value of opportunities is connected to firms (ECKHARDT; SHANE, 2003).

For Shane and Venkataraman (2000), entrepreneurial opportunities necessarily require the discovery of new means-ends relationships, differentiating them from *"all other opportunities for profit"* (p. 220). Kirzner (1997), when discussing economic justice through the entrepreneurial discovery approach, argued that entrepreneurial discovery adds to the economy's total *"pie of* (…) *outputs"* (p.75) even when known outputs are being produced using known inputs. Still, Shane (2012) pointed out that Kirznerian opportunities admit arbitrage-type of profits, as indeed observed by Kirzner (1973). Since no recombination of resource is involved, not all Kirznerian opportunities would fit into most common conceptualizations of entrepreneurship due to no entrepreneurial judgement being necessary on the future value of a recombined set of resources (ECKHARDT; SHANE, 2003). For Mainela *et al.* (2014), the key issue of this debate lies on understanding different value creation mechanisms; while innovation opportunities create value through novelties that increase competitive imperfections, arbitrage opportunities create value satisfying market needs and decreasing competitive imperfections.

2.4.3 The nature of opportunity formation

If authors do not agree on the mechanisms of value creation that apply to entrepreneurial opportunities, the literature is also conflicting when it comes to the nature of their formation, with two dominant perspectives shaping the debate (SHORT *et al.*, 2010). The first one views opportunities as objective realities, while the other posits that they are subjective interpretations enacted by entrepreneurs (ALVAREZ; BARNEY, 2007). The different views can be captured in the essential elements of the definition of opportunity given by Sarasvathy *et al.* (2003) and the one offered by Eckhardt and Shane (2003). While the first defines opportunity as a set of "*ideas, beliefs and actions"* (p.142), the second refers to *"situations"* (p.336). While a group of authors is consonant that opportunities can only be analyzed ex post, and that before the entrepreneurial process is carried out, opportunities tend to be diffused ideas, conjectures, vague notions about possible market needs or unproven insights about possible resource combination (SARASVATHY *et al.*, 2003; MAINELA *et al.*, 2017), most research in entrepreneurship has assumed that opportunities exist as objective phenomena (ALVAREZ; BARNEY, 2007). In both cases opportunities are seen as possible due to competitive imperfections but, from an objective perspective, these are formed exogenously and, from a subjective perspective, they are enacted by entrepreneurs.

Opposing the ideas of opportunity expressed by the proponents of effectuation, Shane (2012) maintained that entrepreneurial opportunities are objective phenomena, observable as situations in which recombination of resources produces profit. The author suggested that the subjective-versus-objective discussion on opportunities might stem from confusion between *opportunities* and *business ideas*, the latter being a subjective interpretation of how resources could be recombined in order to pursue an opportunity. In the author's view, *business ideas*, not opportunities, can be created and enacted if the entrepreneur acts on his or her beliefs. Shane (2012) concluded that opportunities exist objectively, independently of the entrepreneur, since political, demographic, regulatory and scientific changes produce opportunities regardless if anyone is able to recognize them and enact proper *business ideas* to profit from them, with history being full of technological innovations that did not create commercial value despite their potential to do so.

Short *et al*. (2010) took Shane's (2012) separation of opportunity and business ideas one step further by identifying entrepreneurial *ideas* as well as entrepreneurial *dreams*. Ideas would stem from acquired knowledge (learning) and creative combination of information, but still would only lead to opportunities if critically examined and carefully developed. Entrepreneurial *dreams* are indeed aspirations – often non-economic (*e.g.* creative expression) – which have in principle an undefined connection to opportunities. Differently than Shane (2012) though, Short *et al*. (2010) saw dreams and ideas as precursors of opportunities that evolve into them as the entrepreneurial process unfolds.

Since objective opportunities are subject to being discovered, while subjective opportunities can only be created, Alvarez and Barney (2007) articulated the conflicting views on the formation of opportunities as *discovery theory* and *creation theory*, respectively. According to the authors, once an opportunity has already been formed, it can be interpreted both as discovered or created since both theories are internally consistent, therefore discussing ex post whether opportunities were discovered or created has no empirical validity. What is important about the distinction between discovery and creation is to understand the actions that each of these theoretical views lead to when they are adopted by entrepreneurs and whether these actions suit specific contexts in which entrepreneurs take specific actions.

According to Alvarez and Barney (2007), the different behavioral predictions from each theory are connected to different assumptions regarding the nature of opportunities, the nature of entrepreneurs and the nature of decision-making environments. In discovery theory, opportunities exist independently from entrepreneurs, entrepreneurs exhibit ex ante differences to non-entrepreneurs regarding abilities to discover or exploit opportunities and the decision-making environment is characterized by measurable risk. In creation theory, opportunities do not exist independently from entrepreneur's perceptions, actions and reactions, entrepreneurs may or may not have ex ante difference, but are likely to develop differences ex post opportunity creation (*i.e.* individual differences as outcomes, not as causes of opportunity formation), and the decision-making environment is characterized by uncertainty (KNIGHT, 1921). These differences lead entrepreneurs that adopt a discovery view of opportunities to perform systematic search using data collection tools (*e.g.* surveys) and analysis techniques to discover opportunities and engage in strategic planning to exploit them before other entrepreneurs do so – timing is of essential importance (SHORT *et al.*, 2010). Entrepreneurs that adopt the creation view do not engage in rigorous planning and, instead of searching, engage in iterative learning by acting and receiving feedback on whether their beliefs on what constitutes an opportunity are shared by the market – supported by effectual rationality (SARASVATHY, 2001a) and other entrepreneurial techniques such as bricolage (BAKER; NELSON, 2005). The type of action taken by entrepreneurs essentially reflects the decision-making context in which they believe to be operating in (*i.e.* risky or uncertain), and the compatibility of the interpretation with the objective properties of the decision-making context defines how relatively appropriate the action is (ALVAREZ; BARNEY, 2007).

While some authors argued in favor of either the objective view of discovery or the subjective perspective of creation, other scholars contended that different opportunities could be discovered, created or both at varying levels depending on contextual elements (SHORT *et al.*, 2010). Social entrepreneurship, for example, is frequently a response to observed injustice, making the discovery of opportunities more relevant in this context. Mainela and Puhakka (2009), acknowledged that some opportunities exist in reality even if there is no human awareness of them. Mainela *et al*. (2014) considered that a practical realist perspective in which opportunities exist in socially constructed situations and are available for discovery, but cannot be readily explored without entrepreneurial interpretation and construction to actualize them, could be useful for further theoretical explanation of opportunities. Implying similar conciliatory reasoning, Mathew and Zander (2007) summarized their understanding of opportunity discovery as *"typically the observation of some external conditions or events that generates the impulse or vision that triggers further pursuit of a particular business idea* […] *involving* […] *evaluation and refinement* […] *as part of an iterative process"* (p.17).

According to Ardichvili *et al.* (2003), an opportunity goes through a non-linear entrepreneurial process of opportunity development, which includes recognition of opportunity elements (not the discovery of a complete opportunity), evaluation and development itself. Ardichvili *et al.* (2003) claimed that elements of opportunities – unmet needs and underutilized resources – can be found in the environment but, to become opportunities, they need be developed by the entrepreneur's creative actions – *"opportunities are made, not found"* (ARDICHVILI *et al.*, 2003, p.106). Similarly, Sarasvathy *et al.* (2003) argues the possibility of viewing an opportunity as evolving from creation to discovery and even allocative processes. The creation step is necessary for the definition of goals, values and preferences (since those, in effectuation, are not presupposed), after which discovery of means to achieve such goals would follow, also being possible to have a final allocative process for defining optimal means to be used. Such an evolution can also be perceived in venture development over time, as observed by Sarasvathy *et al.* (2014) in a case study of a long run family business which early generations developed using effectual rationality while later generations managed it through causal reasoning, highlighting the important role of causation processes in stabilizing the economic artifacts created through effectuation.

The context-dependent view of the nature of opportunity formation makes effectuation neither better or more efficient than causation, but understood to be suited for situations characterized by true uncertainty, rather than by quantifiable risks (SARASVATHY *et al.*, 2003). Sarasvathy (2001a), despite stating that effectuation is more useful in understanding human action, proposed that the clarity of the entrepreneur's initial intentions determines which decision rationality will be more efficient in forming an opportunity, with clearly defined objectives (*e.g.* a clear idea of what a venture will be) being better supported by causation processes, while general and imprecise aspirations find more support in effectuation processes. Johanson and Vahlne (2009) stated that arguing over the relative importance of discovery or creation is meaningless since the opportunity development process is gradual in any case, with Schweizer *et al.*, (2010) furthering this position and concluding that, whether created or discovered, opportunities are necessarily the outcome of previous learning, which is the core of the opportunity development process proposed by the authors.

Venkataraman *et al.*, (2012) observed that recent entrepreneurship research emphasizes the interaction between internal elements of the entrepreneur (cognition, emotions, aspirations and actions) and external elements (resources, markets, stakeholders, institutions and institutional voids). The imprecise separation between internal and external elements led the authors to conclude that entrepreneurship should not be viewed as a social science, but as an artificial science that has built-in *telos* and where the phenomena themselves are contingent, and the relationships among variables cannot be simply explained, but need to be designed. In this sense, entrepreneurship is no longer about decision making under uncertainty, but about designing within constraints (VENKATARAMAN *et al.*, 2012). The consequence of this perspective for opportunities is threefold: they are both made and found, transformation of things is the central issue instead of combination of them, actions and interactions between entrepreneurs and stakeholders as well as the objective environment become the unit of analysis (*i.e.* the intersubjective), not the artifacts themselves.

The intersubjective shifts focus from cultural differences to the commonality of human experience (SARASVATHY *et al.*, 2014). The intersubjective dimension expands the analysis of dyadic relationships used by Schweizer *et al.* (2010). This dimension rests on the assumption of shared meaning between people as the result of experiencing a common objective reality (SARASVATHY *et al.*, 2014), which implies not accepting two completely separate subjective perceptions (VENKATARAMAN *et al.*, 2012). This creates ex-ante understanding in relationships, which allows opportunities to be discovered as objective reality, but does not eliminate the need of negotiations in actions and interactions in order to actualize an opportunity. Venkataraman *et al.* (2012) argued for seeing entrepreneurship opportunities also as transformation of elements, not only as new combinations of them (*e.g.* ECKHARDT; SHANE, 2003) because combination assumes a frontier between objects being combined and the environment in which the combination fits, which is a feature of natural and social sciences but not of artificial ones. From this analysis, it is concluded that the commitments made between entrepreneur and stakeholders take place in the intersubjective and shape the actions and reactions that lead to opportunities that, in turn, transform both the venture and the environment (VENKATARAMAN *et al.*, 2012).

Despite the increasingly complex debate over the nature of opportunities and a growing part of the literature arguing for their *creation,* or a mix of discovery and creation, opportunity *recognition* and *discovery* are central elements in the most widely accepted definitions of entrepreneurship (VEKATARAMAN, 1997; SHANE; VENKATARAMAN, 2000, MAINELA *et al.*, 2017). Also, opportunity recognition forms a large part of extant literature, even though sometimes depicted as part of a broad opportunity development process (ARDICHVILI *et al.*, 2003), and the discovery of opportunities is regarded as one of the core elements in entrepreneurship (ECKHARDT; SHANE, 2003).

2.4.3.1 Opportunity formation: recognition and discovery

According to Kirzner (1997), the existence of entrepreneurial opportunities is only made possible by different beliefs among people regarding the relative value of resources and the potential to transform them into different outputs – those are means-ends frameworks (ECKHARDT; SHANE, 2003). The recognition of an entrepreneurial opportunity occurs when, for example, someone believes the price of an input is low, given the price that its output can be sold for. For Eckhardt and Shane (2003), this discovery is *"the perception of a new means-ends framework to incorporate information, completely or partially neglected by prices, that has the potential to be incorporated in prices and thereby efficiently guide the resource allocation decisions of others"* (p.338).

Shane (2000) described the three main perspectives on the recognition or discovery of entrepreneurial opportunities. The first one is the neoclassical equilibrium theory of entrepreneurship, stemming from the market equilibrium framework, which posits that any person is able to recognize all possible entrepreneurial opportunities and maximize their outcome when choosing from available opportunities to exploit. In neoclassical economics, only an individual's attributes, such as risk propensity, determine who exploits entrepreneurial opportunities, and there are no information asymmetries influences. Much of the early entrepreneurship research adopted this equilibrium perspective and, as a consequence, focused only on analyzing differences in stable attributes between entrepreneurs and non-entrepreneurs (ECKHARDT; SHANE, 2003). The second perspective comes from psychological theories of entrepreneurship, which focused mostly on the decision to exploit opportunities (VENKATARAMAN, 1997) and stated that individual attributes and perceptions such as internal locus of control, tolerance for ambiguity, self-efficacy, optimism, aggressiveness, ambition, willingness to bear risk and high need for achievement influence whether someone exploits or not an opportunity which has been discovered (ALDRICH; ZIMMER, 1986). Regarding the discovery itself of the opportunity, the psychological perspective assumes that individual differences – information processing capacity, search techniques, scanning behavior – define willingness to search for and ability to recognize opportunities (SHANE; VENKATARAMAN, 2000), therefore explaining why some people discover opportunities and others don’t. Finally, the third perspective on opportunity recognition comes from Austrian economics and supports that the possession of idiosyncratically distributed information enables the discovery of particular entrepreneurial opportunities and, opposite to the other perspectives, does not conceive the idea of stable individual attributes that would make a person more likely to engage in entrepreneurship across all existing opportunities. The Austrian view is that society’s specialization of information (HAYEK, 1945), an outcome of limited and individualized access to information, is what determines both discovery and exploitation of an opportunity, rather than willingness and ability. Rondstadt (1988) found corroborating evidence of such idiosyncratic view when observing that first time entrepreneurs recognize more attractive opportunities after their first venture foundation, simply because being in business leads them to acquire relevant knowledge on contacts, suppliers, competition and markets – information that would not be available to them otherwise.

Austrian economics also rejected the view of purposefully searching for opportunities since the overlook of an opportunity is caused by the lack of idiosyncratic information, which cannot be mend by systematic search (Kirzner, 1973). Koller (1988) also found that entrepreneurs mostly don’t look for opportunities, but instead recognize the value of new information that reaches them randomly. Much of the opportunity recognition and discovery research has converged on the importance of receiving, perceiving, gathering, interpreting and applying information (OZGEN; BARON, 2007), but there are conflicting views regarding whether the relevant information for opportunity recognition is mostly idiosyncratic, or can be accumulated through systematic search (CHANDRA; STYLES; WILKINSON, 2009).

Shane (2000), building on the Austrian perspective, found through his empirical study that prior knowledge moderates both opportunity recognition as well as the approach used in its exploitation. Venkataraman (1997), although espousing the Austrian view on information idiosyncrasy and asymmetry, adds that not only useful knowledge for opportunity recognition varies among people, but also the ability to link it to commercial opportunities and to explore these successfully. Cognitive conditions, opportunity incentives (*e.g.* low opportunity cost or high potential profits) and creative processing influence the search for and decision to exploit opportunities, as well as the success of the entrepreneur in exploiting them (VENKATARAMAN, 1997). Shane and Venkataraman (2000) also emphasize one such cognitive condition: the ability to identify mean-ends relationships made possible by newly acquired information, illustrating that, even if a person has the certain knowledge leading him/her to discover – for example – a new technology, he or she may fail to connect it to any commercial applicability. Kirzner (1973) himself stated that *entrepreneurial alertness* differs among people and enables some to recognize changes in prices of resources and outputs, thus discovering entrepreneurial opportunities, while others don't.

In an attempt to develop a comprehensive theory on opportunity identification and development, Ardichvili *et al.* (2003) identified personality traits (optimism, self-efficacy and creativity), social networks and prior knowledge (coupled with information asymmetry) as antecedents of entrepreneurial alertness to opportunity (or entrepreneurial awareness – EA). Ray and Cardozo (1996) defined EA as *"a propensity to notice and be sensitive to information about objects, incidents, and patterns of behavior in the environment, with special sensitivity to maker and user problems, unmet needs and interests, and novel combinations of resources."* (p.10). Alertness was proposed as a necessary condition for opportunity recognition (ARDICHVILI *et al.*, 2003). While distinguishing purposeful search from unexpected discovery made in *"passive search"* (ibid., p.115) mode, the authors contended that alertness is a more powerful determinant of recognition than if the search is passive or active, an argument in line with the Austrian perspective on opportunity recognition (SHANE, 2000).

While Penrose (2009) differentiated objective and experiential knowledge, as Hayek (1945) had similarly differentiated between scientific knowledge and idiosyncratic knowledge, Ardichvili *et al.* (2003) differentiated between the knowledge domain of personal fascination and the knowledge domain of industry job experience. The former is characterized by being built through autodidactic efforts, while the latter results from cumulative learning resulting from specific work execution. According to the authors, the juxtaposition of these two domains is what usually leads to opportunity recognition.

According to Ardichvili *et al.*, (2003), there are three types of opportunity recognition processes: *discovery* is the identification of an underperforming fit between needs and resources, one for which a better fit is known by the entrepreneur; *perception* corresponds to identification of unmet market needs or under-used resource, without having a solution for the market need or a known application for the resource (*e.g.*, a new technology); *creation* is the process in which an unmet market need is matched with a new resource – one which is also a new combination in itself – and may require *"dramatic restructuring of an existing business or 'radical innovation'"* (p.111). The authors argued that an existing market need, even if latent and widespread, once recognized, is only a necessary condition for opportunity exploitation, and such a process requires the entrepreneur to creatively develop opportunities.

Johanson and Vahlne (2006, 2009) stated that there is no difference between recognition and development of an opportunity since these are part of a single process in which, through business relationships interaction, firms gradually acquire (or generate) idiosyncratic knowledge about an opportunity and come to trust their partners as they increase commitments to the joint pursuit of the opportunity, increasingly bringing unilaterally, bilaterally or multilaterally identified (or generated) ideas to fruition.

Although both recognition and discovery are used interchangeably in parts of the literature (*e.g.* SHANE, 2000), and one is sometimes described as being a subcategory of the other (ARDICHVILI *et al.*, 2003), others parts of the literature distinguish between both processes and delineate relevant differences (SARASVATHY *et al.*, 2003). Recognition is said to relate specifically to recognizing the value of matching dispersed information (GEORGE *et al.*, 2016; KIZRNER, 1997), and sometimes is investigated as the recognition of patterns (BARON; ENSLEY, 2006), in which both the market demand and the means to satisfy it are already known, but have not yet been put together. Recognition is an allocative market process (SARASVATHY *et al*., 2003). Discovery refers to discovering a new mean to satisfy a known demand, or discovering a market need to which an existing mean can be deployed. For Sarasvathy *et al*. (2003), recognition, discovery and creation compose the three possible views of the market: allocative view (recognition), discovery view (discovery) and creative view (creation).

2.4.3.2 Networks and opportunity formation

Andersson *et al.* (2005) gathered network research, insights on knowledge types and opportunity formation to elaborate propositions on the influences that network structure has on the type of knowledge transmitted in certain network structures and on the different types of opportunities favored by these network structures. Defining relational embeddedness as the interdependence between the different dimensions in the same relationship (*e.g.* the extent to which a technological adaptation between two firms is dependent on the social dimension of the relationship), they observed that objective and scientific knowledge are more easily transmitted in networks, and experiential or idiosyncratic knowledge require high relational embeddedness to be transmitted. Relational embeddedness is therefore positively associated with higher absorptive capacity (COHEN; LEVINTHAL, 1990) relative to the knowledge contained in the relationship. As a consequence of that:

- Innovation opportunities, which usually contain a larger element of new idiosyncratic knowledge, are more likely to be formed when relational embeddedness is high because the knowledge of partner’s capabilities and resources is greater, facilitating innovative means-ends combinations;
- Networks with low relationship embeddedness tend to favor formation of arbitrage opportunities, in which dispersed, and mostly objective, knowledge flowing in from outside the relationship is used;

In addition to relational embeddedness, the authors also proposed that network density influences the type of knowledge transmitted, and therefore the type of opportunity:

- Networks that are dense and have less bridge ties are better at transmitting idiosyncratic knowledge than sparse networks, thus dense networks relatively favor the formation of innovation opportunities when compare to sparse networks;
- Networks that are sparse and have more bridge ties favor the acquisition of dispersed objective knowledge, thus sparse networks relatively favor the formation of arbitrage opportunities when compared to dense networks;

Based on Granovetter’s (1973) forbidden triad proposition, high relational embeddedness should engender higher network density around the actor. Still, no network should be expected to be fully dominated by high relational embeddedness ties, or dense to the point of not having bridges to receive new knowledge from outside. A more realistic observation is that these extreme characteristics can be assigned only to parts of an actor’s network (ANDERSSON *et al.*, 2005).

Also in an effort to understand the influence of network structure on opportunity formation, Granovetter’s (1973) claim on the importance of weak ties in providing access to unique information from distant sources and avoiding network encapsulation was tested by Hills, Lumpkin and Singh (1997), leading to the conclusion that entrepreneurs with extended networks, as opposed to only effective networks, identified more opportunities, and that the quality of network actors may affect an entrepreneur’s creativity and alertness. In the same survey, entrepreneurs who were not extensively networked found creativity to be relatively more important for opportunity identification than those who networked.

2.4.4 Critique to the concept of opportunities

An emerging stream of entrepreneurship literature posits an altogether negative view on the use of the opportunity concept in entrepreneurial phenomena research (AREND, 2014; DAVIDSSON, 2015; KITCHING; ROUSE, 2016). Kitching and Rouse (2016) concluded that opportunity has *“arguably become an empty signifier, a catch-all construct used to refer to any aspect of entrepreneurial thought, action or environment deemed interesting”* (p.3). Davidsson’s (2015) analysis of the most cited literature on opportunity revealed numerous inconsistencies in the definition of the construct, not only between authors but also in the definitions used by the same authors over time and even in the same study. Despite entrepreneurship research focusing on opportunities, approximately 80% of studies using entrepreneurial opportunity as an important concept failed to provide any definition for the construct. The numerous terms used to refer to similar concepts and ideas, and the multiple processes that have been associated with opportunity (recognition, discovery, creation, development, exploration, exploitation) reveal high variance on theoretical perspectives on opportunity research and may cause the term to become a construct that cannot be operationalized (SHORT *et al.*, 2010).

Building on the definition of entrepreneurship by Shane and Venkarataman (2000), Davidsson (2015) sought to develop an alternative framework to study how new economic activity comes to be, stating that the opportunity construct is not optimal to support the progress of the field and that other constructs would provide better theorizing of entrepreneurial processes. According to the author, entrepreneurship should seek to understand: how the characteristics of the actor (entrepreneur, team or firm) affect entrepreneurial processes, how the characteristics of the non-actor element (usually termed *opportunity*) affect entrepreneurial processes, how variance in actor and non-actor characteristics explain variance in entrepreneurial processes and how the effects of actor and non-actor characteristics on entrepreneurial processes are contingent on each other.

For Davidsson (2015), many of the problems with using opportunity as the non-actor construct, and the difficulty in defining it, relate to the favorable connotation of the word. If seen as subjective, then an "opportunity" – which implies a favorable judgement on a certain situation – would not allow the non-actor element of the process to explain situations in which the actor does not pursue an opportunity. If taken objectively, "opportunity" would not allow the non-actor element of the process to explain entrepreneurial failure, only the actor could cause these variances. Defining opportunity as a property of social context, isolated from any actor, would have to exclude the perception of favorability since this can only be attributed to the opportunity by specific actors, making the word opportunity ambiguous if the objective is to isolate the construct from actor's perception (KITCHING; ROUSE, 2016).

This was indirectly recognized by Shane's (2012) distinction between *business ideas* (subjective) and *opportunities* (objective), implying that entrepreneurial failure to act in the face of an opportunity could be explained by either the absence of a business idea or the by negative assessment of one, and venture failure in the face of a real opportunity could be explained by the incorrect positive assessment of a poor business idea as a stimulus to act.

Davidsson (2015) suggested that the inadequacy of the opportunity construct as the non-actor element in entrepreneurship explained why even though opportunities are acknowledged as central in entrepreneurship, studies have had little success in addressing the non-actor element of the entrepreneurship nexus (SHANE, 2012). The author proposed to abandon opportunity and outlined three constructs that together could replace the use of opportunity in entrepreneurship research, avoiding much of the conceptual confusion, including the overlap between the non-actor element ("opportunity") and its subjective assessment by the actor element. These constructs are:

- *External enablers* (EEs): circumstances in the environment that create room for new economic activity, examples are regulatory changes, technical advances and demographic shifts. Those are the same type of changes highlighted by Schumpeter (1934) in his analysis of opportunities exploited by entrepreneurs. But Davidsson (2015) highlights that the favorability of specific EEs to new ventures is selective (depends on industry, time, location), subjective (depends on who is the actor of the new venture), interdependent (depends on other EEs) and uncertain (actions from competition and other contingencies do not allow favorability to be known for sure *ex ante*). Also, despite in line with discovery ideas (SHANE, 2012), Davidsson (2015) includes a creation perspective (ALVAREZ; BARNEY, 2007) in his construct by observing that actors can influence EEs, sometimes in major ways, such as when they develop new technologies or lobby for change in regulations;
- New Venture Ideas (NVIs): refer to future distinct resource-transforming economic activity in the market, resulting from the actor's interpretation of EEs. They are imagined combinations of means, products and markets. Davidsson (2015) proposed that NVIs are the content of what is said to be recognized or discovered, and posited it as the main Non-actor element of the entrepreneurship nexus. It relates closely to the concept of business idea (SHANE, 2012; SHORT *et al.*, 2010). Different than creation view of opportunities (ALVAREZ; BARNEY, 2007; SARASVATHY *et al.*, 2003), Davidsson (2015) views NVIs as possible to codify and separate from the actor. Also, their subjective favorability is not built into the construct and can only be inferred if the actor decides to act, and their objective favorability is determined ex post by the outcome of the venture;
- Opportunity Confidence (OC) is proposed as an auxiliary construct to represent the entrepreneur's subjective *evaluation* on the attractiveness of both external enablers and new venture ideas as stimulus for entrepreneurial action. It can be negative or positive and it is subjective, both in the sense of being subject-specific and in the sense of being subject to under of over estimation by an individual's particular judgement;

Also, problems with the dichotomy between alertness to arbitrage discovery and creativity to introduce innovative changes were raised by Kirzner (2009) himself, arguing that his earlier explanation of arbitrage discovery as the entrepreneurial role in the economy was an emphasis put with the objective of explaining the market process, not the entrepreneur as an actor, and this was the only reason why the innovative aspect of entrepreneurship was not even acknowledged – such creative actor is not needed to explain the dynamically competitive market process, because even in the absence of Schumpeterian entrepreneurial creativity the market process is still set in motion and never in equilibrium (KIRZNER, 2009). For Kirzner (2009), the alertness to *discover* existing opportunities, *speculation* over possibly existing opportunities or *creation* of future opportunities all are ultimately based on price differentials, and related to the concept of arbitrage, and whether the opportunities are discovered in the environment or created in the entrepreneur's mind is an *"almost meta-physical question"* (KIRZNER, 2009, p.9) which was not intended to be addressed by his work.

Kitching and Rouse (2016) argued that discovery and creation conceptions of opportunity do not properly address the social ontology issues attached to dealing with opportunity as a social object of study, with discovery authors sometimes implicitly drawing from critical realism and creation authors making unjustifiable connections with ontological assumptions to support or reject particular positions. A critical realist-inspired critique led the authors to conclude that while discovery and creation approaches have shed light into entrepreneurial actions, the use of opportunity as a concept offers no additional theoretical insight and existing opportunity-related research topics could be addressed in terms of *"having a business idea; acquiring, combining and mobilizing resources; networking with stakeholders; creating new ventures; and achieving a product sale"* (2016, p.11), which relate to different social objects with their own conceptualization and ontological differences, making it impossible to group them into an opportunity construct without causing confusion. Sarasvathy *et al.* (2003) are mentioned as an example of ontological confusion since the authors include both *belief* and *action* as elements of the same social object.

According to Kitching and Rouse (2016), attempts to synthesize discovery and creation (*e.g.* MAINELA *et al.*, 2014) compound the confusion by not acknowledging the ontological difficulties in defining the social object of study. Simply admitting that the same social object (opportunity) can be categorized in different types, and that one of these types is context-embedded, while the other is actor-dependent, is chaotic from a social science conceptual perspective. Dealing with the issue as being one of degree (*e.g.* SHORT *et al.*, 2010) also ignores the differences in ontological assumptions. In summary, from a critical-realist perspective, the same social object cannot be categorized as either existing prior to entrepreneurial action (discovery) or being the result of entrepreneurial action (creation) or a mixture of both, even if conditions are specified.

Kitching and Rouse (2016) offer their own ontologically supported framework to study the causes, processes and outcomes of entrepreneurial action, without the use of the opportunity construct. This framework emphasizes that social contexts, composed by structure and culture, possess causal powers and propensities that render particular actions easy or difficult, possible or impossible, rewarding or costly. Therefore, entrepreneurial agency, while crucial, is enabled, motivated and constrained by structural and cultural conditions, even if the entrepreneur is not aware of such contextual social powers. Agency and context interact in a cycle where structural and cultural conditioning enables agency, and the outcomes of actions and interactions support a continuous structural and cultural elaboration process. This view coheres with Granovetter's (1985) call for analysis of economic action as neither under-socialized nor over-socialized, with an actor's agency being in fact *"embedded in concrete, ongoing systems of social relations* […] *(networks)."* (p.487).

Entrepreneurial actions are *"investments in resources intended to produce goods and services for market exchange, in terms of the interaction of agential, social-structural and cultural causal powers"* (KITCHING; ROUSE, 2016, p.2), with examples being: imagining and developing a business idea, acquiring, combining and mobilizing resources, networking, creating a new venture and making a sale. Structural and social contexts are the *"conditions of action"* (ibid., p.12), similar to Davidsson's (2015) External Enablers, and a series of entrepreneurial actions comprise an *entrepreneurial project* (ibid., p.2) that is consciously formulated by adopting a goal after consideration of possible ends, and is constantly revised in light of the consequences of actions already taken. The nexus of entrepreneurship (SHANE; VENKATARAMAN, 2000) then, is one between agential, cultural and structural powers that interact and are all necessary both for entrepreneurial action and its explanation (KITCHING; ROUSE, 2016). This view contrasts with the agency-focused explanations of entrepreneurship (*e.g.* effectuation, bricolage) that, using the argument that prediction doesn't apply to business environment, end up summing up external factors as contingencies, not acknowledging the existence of contextual causal powers.

2.5 INTERNATIONAL ENTREPRENEURIAL OPPORTUNITIES

Entrepreneurship theory understands the introduction of new geographical markets as entrepreneurial opportunities (ECKHARDT; SHANE, 2003). In the early behavioral approach to internationalization literature, opportunities in foreign markets were seen as being perceived and formulated by firms with an end to enable growth, while controlling for risk, as a mean of increasing long term profits prospects (JOHANSON; VAHLNE, 1977). Johanson and Vahlne (1977), based on the difference between experiential and objective knowledge, differentiated between *concrete opportunities* and *theoretical opportunities* in foreign markets. Concrete opportunities could only be perceived by people who have experiential market knowledge and are able to *"have a 'feeling' about how they fit into the present and future activities"* (ibid., p.28), while theoretical opportunities could be formulated on the basis of objective market knowledge.

Coviello *et al.* (2011), partly motivated by the explicit inclusion of opportunity in the definition of IE by Oviatt and McDougall (2005), argued for the need to better understand how international opportunities are defined and operationalized in IE research. Ellis (2011), defines, from a market-making perspective, international opportunity as

> the chance to conduct exchange with new partners in new foreign markets. However, as entrepreneurship cannot be inferred unless opportunities are actually exploited, for all intents and purposes the only meaningful opportunity is the one that leads to the formation of a new international exchange. If there is no exchange, nothing has been risked, and there is no entrepreneurial activity to observe. Exchange partners may be foreign intermediaries (e.g., distributors, wholesalers or retailers) or foreign consumers. (p.101).

Mathews and Zander (2007), based on the increased importance of INVs and accelerated internationalization, argued that the globalized economy offers opportunities in the form of dispersed knowledge, resources and skills which can be acted upon through entrepreneurial insight connecting those elements to provide supply to potential customers in different international settings. The authors redefined internationalization as *"the entrepreneurial process of* […] *discovering, integrating, and adapting new business ideas into the structures and networks of the global economy"* (p.20,27). Importantly, Birkinshaw (1997) had previously highlighted that international opportunities may also exist domestically when the resources to meet an internal market need are located in another country, even if inside the same company, which extends the characterization of international opportunities beyond the focus of markets and considers cross-border exchange more broadly.

Mainela *et al.* (2014) stated that international entrepreneurship research should be enabled to study international entrepreneurial opportunities based on entrepreneurship conceptualizations of opportunity – including innovation and arbitrage opportunities, as well as discovered and created opportunities – but emphasizing the features of cross-border situations and how they influence opportunity development. With that end, the authors defined that *"international opportunity is a situation that both spans and integrates elements from multiple national contexts in which entrepreneurial action and interaction transform the manifestations of economic activity"* (p.16).

International opportunities are the central issue of international new ventures (MAINELA, *et al.*, 2017). For Ellis (2011), the distinguishing characteristic of an international entrepreneurial opportunity is the unprecedented nature of the exchange venture, not the type of exchange or partners involved. After examining the origins and nature of international opportunities, Mainela *et al.* (2017) brought attention to the fact that, while seen as a core concept in services and industrial marketing, creation of value had received little attention in IE opportunity-focused research. The authors sought to understand how international opportunities are perceived as value-creating activities by extant IE research. The following three approaches were identified:

- *Value-creating opportunities in INV establishment*: this view of international opportunity is intertwined with the very definition of an international new venture. The value creation of INVs includes border crossing behavior since INVs derive their competitive advantage from exploiting resources and markets in multiple countries (OVIATT; MCDOUGALL, 1994). International opportunities are possibilities for INVs to create value through combination of dispersed knowledge or resources;
- *Opportunities for Value Capture Through Internationalization*: focus on capture of value through market entry. The central issue is no longer a particular venture connected to the opportunity, but the identification and exploitation of value exchange opportunities across borders. International opportunities are arbitrage opportunities in foreign markets that enable creation of value and provide possibilities for company growth. According to Johanson and Vahlne (2003), this view was the one taken by the most of IB research;
- *Social Construction of Value in Entrepreneurial and Internationalization Processes*: understands international opportunities as the result of cognitive process of sense making and enactment (WEICK, 1979) carried out in specific settings that cut across different

national, institutional, cultural and social contexts. International opportunities are the by-product of cross-border interactions and reactions to context-specific contingencies. This view is mostly the one taken by effectuation theory and authors who have adopted it (*e.g.* SCHWEIZER *et al.*, 2010);

Based on these approaches and building on a previous analysis of international entrepreneurial opportunities (MAINELA *et al.*, 2014), Mainela *et al.* (2017) differentiated international opportunities according to their type and nature. As far as type, international opportunities are said to be either *venture opportunities,* in which cross-border combination of information and resources by a new venture creates value, or *market opportunities*, which arises from the needs in foreign markets for a company's products. Regarding nature of opportunities, the authors use the objective and subjective dichotomy elaboration from Alvarez and Barney (2007). The resulting typology is shown in Figure 8.

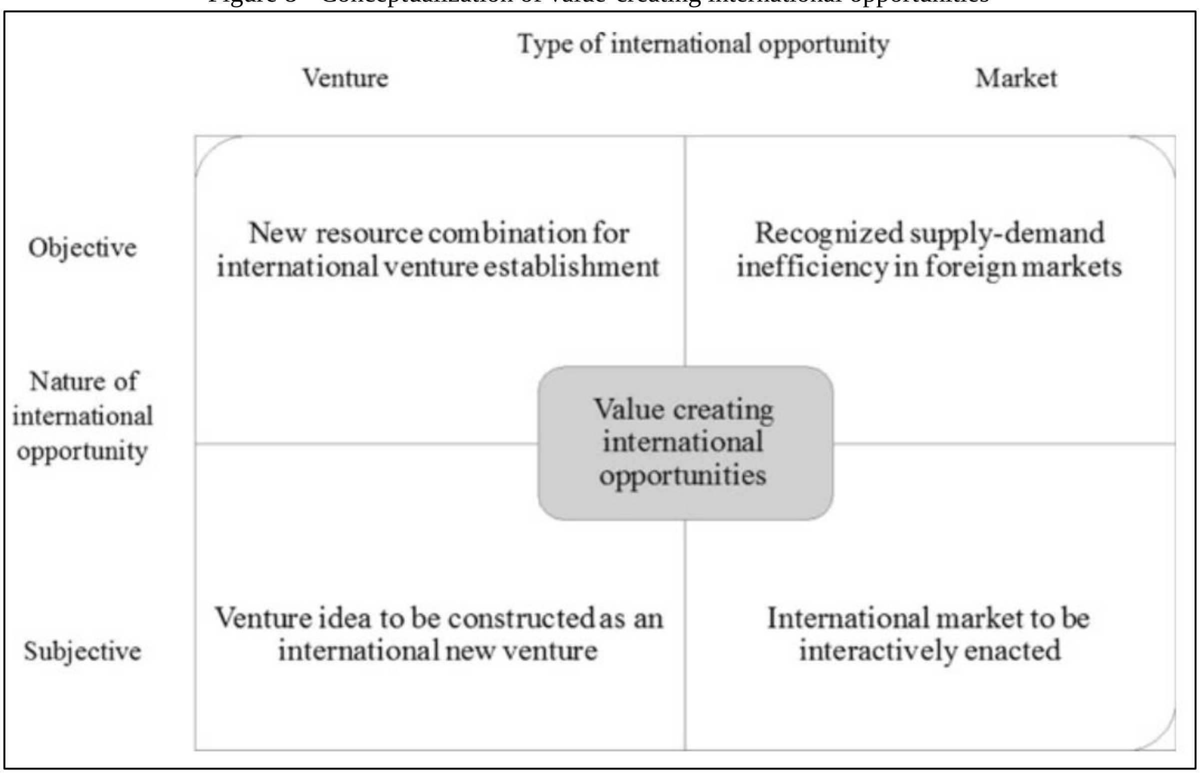
Objective venture opportunities refer to innovative cross-border resource combination, meaning the formation of new means, ends or means-ends relationships (SHARNE; VENKATARAMAN, 2000) across borders. Mainela *et al.* (2014), referring to these opportunities as *"realization of international opportunities in INVs and MNCs"* (p.8), posited that such opportunities are discovered, and knowledge and alertness are the main antecedents of discovery. Realization of the opportunity usually involves hybrid organizing methods, and both innovation and arbitrage type of opportunities are exploited. INVs exploiting such opportunities revitalize and renew the international economy, and ventures are not exclusively new firms, they may be changes or extensions of existing businesses, or be started up beside existing firm businesses.

Objective market opportunities are characterized by existing means and ends (ECKHARDT; SHANE, 2003), and depend on entrepreneurs discovering market arbitrage opportunities from dispersed information (KIRZNER, 1997) across borders. Entrepreneurial cognitions and networks are the key determinants to discovery and exploitation of these opportunities according to the research adopting this view of international opportunity (MAINELA, *et al.*, 2014). While not creating innovative patterns, such opportunities are profitable due to elimination of market inefficiencies (MAINELA *et al.*, 2017). Despite the Kirznerian character to these opportunities, the arbitrage distinction is unimportant because the focus is on internationalization rather than entrepreneurship (MAINELA, *et al.*, 2014).

Subjective venture opportunities are the result of creative processes that generate venture ideas across a global landscape (HILLS; SHRADER; LUMPKIN, 1999). Entrepreneurs create their version of reality and the opportunities are about using knowledge and social ties to enact new economic activity, which can result in new value creation logics and business models (MAINELA *et al.*, 2017).

Subjective market opportunities arise from entrepreneurs integrating objects and information through collaboration with stakeholders to reach common understanding of what the opportunity consists of; the opportunity is initially unplanned and evolves through interactions among stakeholders. Johanson and Vahlne (2009) exemplify this view of international opportunities, and the authors focus on the role of learning within relationships in constructing an opportunity.

Figure 8 - Conceptualization of value-creating international opportunities



Source: Mainela et al. (2017, p.68)

2.5.1 Recognition and discovery of international entrepreneurial opportunities

Chandra *et al*. (2012) sought to explain internationalization as an entrepreneurial process and proposed a view on opportunity identification and development that accommodates both domestic and international opportunities. Opportunity identification and development is one single gradually evolving process *"characterized primarily as a creative act in which an entrepreneur develops new ideas by recombining dispersed bits of incomplete and frequently contradictory knowledge that are spread among people, places, and time in novel and productive ways that can add value"* (p.76), which builds on prior knowledge and depends on networks to provide access to the dispersed elements that accumulate over time and are continuously processed in a form of recombinant innovation.

Despite such general concepts of opportunity, IB and IE scholars have explored the issue of opportunity recognition and discovery applied specifically to international contexts. Locally contained knowledge and resources, geographical distances, cultural and institutional differences are examples of specific cross-border aspects that are said to affect flow of information and resources that are needed to form international opportunities, bringing particularities to opportunity recognition, discovery and exploitation in international settings (ELLIS, 2011; MATHEWS; ZANDER, 2007).

Ellis (2000), motivated by the failure of normative IB literature regarding the explanation of foreign market entry decision, sought to understand the process of foreign market opportunity discovery in the form of exports. Foreign market export opportunities can: be brought to firms and entrepreneurs by foreign buyers that have knowledge of opportunities in their home market, result from buyer-seller encounters promoted by third parties (*e.g.* broker, governmental agency) or be attained from existing network contacts. According to Ellis (2000), the seemingly random foreign market opportunity discovery is contingent on social network structures providing idiosyncratic benefits from non-redundant ties – connections that link network structural holes (BURT, 1992). Structural holes exist between available means and existing market needs spread across different countries, and systematic search for objective market information has little explanatory power for foreign market opportunity discovery (ELLIS, 2000).

Of specific importance for international opportunities, the effects of prior knowledge on opportunity discovery discussed by Shane (2000) are said to be influenced by the entrepreneur's history with international travel, work experience abroad and immigration which provide the entrepreneur with higher probability of being able to interpret, transform and integrate dispersed and locally bound knowledge, thereby identifying international opportunities that others can't

(MATHEWS; ZANDER, 2007). Using Shane's (2000) conclusions, Schweizer *et al*. (2010) contended that current business activities add to a firm's stock of knowledge and creates the *"readiness to be surprised"* (p.347), or *"entrepreneurial alertness"* (KIRZNER, 1973, p.39), thus, while many authors diminish the importance of systematic search, they separate 'discovery' from 'luck' stating that *"accidental discovery"* (ARDICHVILI *et al*., 2003, p.115) is not purely a *"lucky discovery"* (Schweizer *et al*., 2010, p.347). Chandra *et al.* (2009) also observed that international opportunity discovery involves problem solving that uses dispersed information, and the process requires more than the accumulation of idiosyncratic information.

Ellis (2011) observed that *discovering* and *seeking* an opportunity are different, concluding that the former is the most common form of international opportunity recognition, and finding that discovery has nothing to do with luck, but it has to do with the entrepreneur's preexisting idiosyncratic social ties. The author argued that international opportunity recognition is a highly subjective process, shaped by preexisting social ties that both enable and constrain the entrepreneur, defining a specific "*opportunity horizon"* (p.106) that can be recognized, given the existing set of ties. Besides being limited by the idiosyncratic network structure of existing ties, the horizon of international opportunities is affected by geographic, cultural, psychic and linguistic distances. Also, since opportunity recognition or discovery is an individual act (ECKHARDT; SHANE, 2003), the personal level of network analysis is more relevant for obtaining information on potential opportunities, as opposed to the inter-firm level highlighted by the business network approach (ELLIS, 2011). Chandra *et al.* (2009) found that a higher number of international weak ties makes the entrepreneurs relatively more likely to discover opportunities, rather than search for them, since these weak ties provide them with the needed dispersed information to form international opportunities.

As an alternative to being limited to an idiosyncratic opportunity horizon, international entrepreneurs that do not have an extensive number of international weak ties can either seek to expand their network or to engage in non-tie methods of opportunity recognition and discovery such as using official information sources (e.g. trade promoting agencies), trade fairs and impersonal advertising, though these opportunities tend to take longer to be exploited due to possessing no preexisting trust, different than tie-based opportunities (ELLIS, 2011).

According to Chandra *et al.* (2009), deliberate and systematic search of opportunities require that the entrepreneur understands which needed information that is not currently known, therefore differentiating this process from discovery, in which the opportunity is formed out of information to which the entrepreneur is previously unaware of his or her own ignorance to it (KIRZNER, 1997). The authors found that more internationally experienced entrepreneurs have higher awareness of the information that is necessary for international opportunities. Also, the accumulation of knowledge is another way through which awareness of missing information emerges, since prior knowledge provides the framework for perceiving new information. Consequently, the greater international experience and knowledge, the greater is the likelihood of engaging in deliberate and systematic search of opportunities.

3 METHODOLOGY

In this section the research method used in the study is discussed by elaborating on the research problem, research questions, the reasoning behind the choice of methods used for data collection, analysis and interpretation and a description of such methods. Despite the linear presentation of the items, *"the typical parts of the research process are better conceptualized as tasks whose progression follows a general direction, but may be repeated to accommodate emergent questions and concepts"* (SINKOVICS; ALFOLDI, 2012). While acknowledging the existence of an iterative process between the development of theoretical and conceptual foci, data collection and data analysis, detailing of such process has been suppressed.

3.1 RESEARCH PROBLEM

The study sought to understand how the use of institutional ties influences the formation of international opportunities by investigating how these ties affected specific aspects of opportunity formation. To this end, cases of international opportunity formation were analyzed along with the interactions between entrepreneurs and institutional actors involved in the process in order to understand how the resources provided by institutions affected different aspects of opportunity formation identified in the extant literature.

The problem addressed is situated at the convergence of multiple topics related to international opportunity formation: the different opportunity formation processes of recognition, discovery and creation, the different dimensions along which international opportunities are characterized, the most relevant influencing factors of opportunity formation, the characteristics of the most relevant ties for the opportunity and the effects of institutional ties in all of these aspects.

3.2 RESEARCH QUESTIONS

The research question that the study sought to understand was: ***"How the use of institutional ties influences the formation of international entrepreneurial opportunities?"***. To reach such understanding, the effort aimed at describing the formation of international opportunities connected to entrepreneurs and corporate entrepreneurs, with specific attention to the role of institutional ties and to how the opportunity formation processes observed related to the ones described by the extant literature. At the same time, the role of different influencing factors was understood for each opportunity, providing a view on the relative importance of social capital, external enablers, entrepreneurial alertness and systematic search for information in each opportunity.

The main research question is a reduction of what the study sought to understand regarding the process of international opportunity formation and it was necessary to address other topics that led to the main question and provide richer understanding of the subject and connected themes. Therefore, additional secondary research questions were addressed to deepen the understanding of the phenomenon analyzed and the elements involved:

- Which specific type of international opportunity entrepreneurs form?
- Which of the different opportunity formation processes are used by entrepreneurs?
- What are the main influencing factors of international opportunities?
- What are the resources accessed through institutional ties and how do they interact with the main influencing factors?
- What are the characteristics of the entrepreneur's main relationships and institutional ties?

3.3 RESEARCH METHOD

The research approach selected for the study was qualitative, and the specific method used was case study, within a multiple-case embedded design (YIN, 2009). A qualitative research approach was understood to be appropriate as it allowed richer data collection on the complex phenomenon of international opportunity formation, as well as understanding the context of each opportunity. The case study method allows to investigate opportunity formation as a process unfolding over time (CHANDRA *et al*., 2012) and is better suited than quantitative methods for examining dynamic processes such as those involving opportunities (SHORT *et al*., 2010). Case studies enable to capture situational information and allow input from multiple sources of evidence (YIN, 2009). They can be used to provide description and explanation to phenomena, to develop and test propositions and even to develop theory (EISENHARDT, 1989; YIN, 2009).

According to Yin (2009), case studies arise out of the need to understand complex social phenomena and *"in general, case studies are the preferred method when (a) 'how' or 'why' questions are being posed, (b) the investigator has little control over events, and (c) the focus is on* *a contemporary phenomenon within a real-life context"* (p.2). Case methods are also relevant whenever extensive description of social phenomena is desired and operational links need to be traced over time (YIN, 2009). The holistic multiple-case design is justified by the high risks of single-case studies without a specific reasoning for it, and by the unit of analysis being the international opportunity, with no other relevant sub-units for the specific research objective.

The assessment of the quality of the research is an important methodological concern. Creswell and Miller (2000) argued that qualitative studies need to demonstrate validity. Yin (2009) and Eisenhardt (1989) even developed criteria to be used in establishing internal validity (the causal relationships between variables and outcomes), construct validity (the quality of the conceptualization or operationalization of a concept), external validity (analytical generalizability, substituting statistical generalizability) and reliability (understood as transparency and possibility of replication of conclusions using the same data). Differently, Armstrong, Gosling, Weineman and Marteau (1997) argued that *"reliability and validity are fundamental concerns of the quantitative researcher but seem to have an uncertain place in the repertoire of the qualitative methodologist"* (p.597), and Sinkovics and Alfoldi (2012) advocated credibility, transferability, dependability and confirmability as more realistic and useful criteria to assess quality. In attempting to meet these criteria, seen as more applicable to the present study, rich case description and member checking were used – the final version of all case descriptions were reviewed and approved by the entrepreneurs involved.

The use of the case study research method as a tool to develop and test theory is widespread in IB and IE research. Since the initial formulation of behavioral theories of internationalization case studies were the base of important research developments such as the establishment chain (JOHANSON; WIEDERSHEIM-PAUL, 1975) and the Uppsala model (JOHANSON; VAHLNE, 1977). The strength of the method remained a constant in the field, with Oviatt and McDougall (1994) using a series of findings from case studies from all over the world to articulate a definition and a theoretical view of international new ventures. The outlines for the network model of internationalization process (JOHANSON; VAHLNE, 2003) were also based on a case study coupled with existing evidence from other case studies that had failed to support the Uppsala model. Schweizer *et al*. (2010) developed the entrepreneurial model of internationalization using an abductive method that used extant theory and a single in-depth case study, combining abstraction with analytical generalization. In the area of international opportunity research, Chandra *et al.* (2012) employed multiple case studies in their study, which enabled a process view of international opportunity formation, and Mainela *et al.* (2014) reviewed several case studies along with conceptual articles to articulate a definition of international opportunities.

Since the main source of information are interviews, it was decided that data analysis would be supported by elements of the content analysis technique (BARDIN, 1977), as a foundation to structure the study data and organize its results. This technique encompasses three phases: 1) pre-analysis, in which a data structure is prepared for data collection, 2) material exploration, in which criteria are defined and content is analyzed and, finally, 3) outcome processing, inference and interpretation, in which the understanding of the phenomenon under study is organized and presented. The structure provided by content analysis helped present the outcome of the emergent cyclical process of interaction between data and theory, best described as progressive focus (SINKOVICS; ALFOLDI, 2012), that gives rise to the findings in qualitative research.

According to Bardin (1977), content analysis technique allows performing data collection and analysis without hypothesis or propositions derived from theory, allowing instead for meaning to emerge from data. The formulation of theoretical propositions was planned as an output of data analysis and interpretation.

3.3.1 Case selection

Case selection was performed as the first step in the pre-analysis phase of content analysis technique (BARDIN, 1977). Initially, it was estimated that six entrepreneurs should be interviewed. They should preferably be in the process of forming international opportunities, have clear plans to do so or have just completed such process – the cases could be either in early phases of opportunity formation or in the exploitation phase of the opportunity lifecycle (ECKHARDT; SHANE, 2003) – this lifecycle boundary is a desired feature of properly defining the unit of analysis in case studies (YIN, 2009). Importantly, since the study adopted an opportunity-based view (CHANDRA *et al*., 2012), even though for pragmatic reasons the case selection was based on entrepreneurial ventures (or entrepreneurs), data collection focused on instances of international opportunity formation for each venture, which is the unit of analysis, or the “case” itself (YIN, 2009).

After going through this iterative process of finding cases, analyzing outcomes from field work, reconsidering case selection criteria and finding new suitable cases, a final list of four cases to be considered in the final data analysis was consolidated:

- PB&B (Switzerland): medical technology venture focused on aesthetics and plastic surgery technology and products with international scope from inception;
- TWIST (Brazil): IT venture focused on data science and artificial intelligence systems with previous international opportunity formation and plans for further internationalization;
- GoNitely (US): short-term rental and property management venture founded by Swiss entrepreneurs, operating in Switzerland and US and planning further expansion;
- Onix Bodycare (Hong Kong): large manufacturer of private label and own brand toiletry and laundry products with global reach and extensive entrepreneurial background;

Initially, the entrepreneurs to be chosen were all in some way be tied to Switzerland's swissnex network. This network was a subset of Switzerland's Education, Research and Innovation Network (ERI-Network). The ERI-Network is an institutional instrument run by Switzerland's State Secretariat for Education, Research and Innovation (SERI) in cooperation with the Federal Department of Foreign Affairs (FDFA), with the objective of supporting the deployment of the country's international education, research and innovation (ERI) strategy. The ERI-Network *"supports activities and programs to develop and enhance bilateral and cooperative ties with selected partner countries in the areas of ERI"* (SWISSNEX, 2017). The ERI-Network is composed by the swissnex network in Brazil, China, India, Singapore and US, and the Science and Technology Counsellors (STC) which is a network of scientific personnel at Swiss embassies around the world. One of swissnex's stated core values is to *"support the internationalization efforts of Swiss academic institutions and companies, with a special focus on R&D based start-ups"* (SWISSNEX, 2017).

Swissnex was financed by its partners' contributions, as well as by public and private sponsors. Its partners included universities, multinational companies, high-tech start-ups and research institutions (SWISSNEX, 2017). These characteristics fit well with the definition of institutions that was used in the most relevant IE and IB research that addressed the topics of institutions and network research at the same time (HADJIKHANI; THILENIUS, 2005, GIBB, 1993; OPARAOCHA, 2015). Swissnex Brazil was located in Rio de Janeiro, and had a small outpost in São Paulo, and had previously collaborated with COPPEAD to develop the Brazilian event of the Academia-Industry Training Program (AIT), an initiative of the Swiss Federal Institute of Technology in Lausanne (EPFL). This relationship provided access to the institution and expectation of facilitated access to the entrepreneurs tied to it. Due to the nature of the institution, most connections available were to potential and novice entrepreneurs, usually researchers or former academics, in varying stages of venture development. The facilitated access to a relevant international institution and the entrepreneurs tied to it, coupled with the fit of the setting with the research question, justified the adopted case selection pool, making the choice of cases theoretically and purposefully justified, even if not statistically so (EISENHARDT, 1989).

Some of the criteria for selecting who was eligible to the services provided by the Brazilian office of swissnex were: being involved in building new ventures in the areas of science, education and innovation, preferably with some connection to Brazil (Swiss entrepreneurs) or Switzerland (Brazilian entrepreneurs). Swissnex broadly described its business support services as: being a platform for visibility, networking opportunities and local intelligence and expertise. The focus from swissnex in supporting R&D intensive entrepreneurial ventures would facilitate cross-case comparisons and provide a clear boundary to which analytical generalizations drawn from the study should be limited to (EISENHARDT, 1989; YIN, 2009). Also, the common institutional actor could possibly facilitate common cause attribution on the effects that institutional ties have on international opportunity formation. Still, this required clarification of the underlying reasons for why such relationships existed since it was possible that commonalities among opportunity formation were due to other broad commonalities among the cases.

In order to find the entrepreneurs suited for the study, a profile preliminary analysis was performed together with swissnex management to identify a set of entrepreneurs that were seeking to form international opportunities. The following criteria was adopted for preliminary selection of cases:

- Entrepreneur should have interacted with swissnex in its capacity as an institution;
- Entrepreneur should be seeking, or have clear plans, to form an international opportunity;
- Entrepreneur should be willing and able to answer questions about the process of opportunity formation, even if the opportunity was not fully developed;

Based on these selection criteria, a list of four potential case studies was provided by swissnex. Two of those cases were from Switzerland and two were from Brazil. Once the initial contact was made, only one case from each country made themselves available for the requested interview. After this, four additional potential cases were identified by swissnex, three from Brazil and one from Switzerland. All of these four were available for an interview.

After six interviews were performed (four cases from Brazil and two from Switzerland), and preliminary analysis of the content was made, four cases were deemed unsuited for the study. Three of the Brazilian ventures were not near having strong internationalization efforts and the entrepreneurs' answers to questions related to international opportunities were mostly speculative or educated guesses. One case from Switzerland reported a complete absence of institutional ties in the venture's history, which made the case suboptimal to investigate the study question.

With only two usable cases on hand, the initial intention to include in the study only entrepreneurs that were connected to swissnex Brazil was abandoned and alternative sources of case studies were investigated. COPPE/UFRJ's business incubator was contacted and provided five potential cases, all from Brazil, but only one of those was available for an interview. The interview had to be shortened to a maximum of 30 minutes on the entrepreneur's request (the expected time was one and a half hours) and the result ended up being subpar, with the entrepreneur's answers being very limited in their elaboration of details. The entrepreneur declined to schedule a follow-up interview and it was decided that including the case in the study would not be fruitful.

One additional case from Switzerland, Embotech, was recommended by one of the previously interviewed entrepreneurs. Despite being a good fit with the study, time constraints again jeopardized the interview's outcome and the information collected was judged as insufficient to fully understand the venture's international opportunity formation process. Other efforts were made to connect specifically with entrepreneurs from Switzerland (*e.g.* cold calling through e-mail), but due to lack of responses and time constraints it was decided to broad the possibility of cases to include other countries. As an outcome of new efforts in finding suitable cases, two cases were included in the study, one from Hong Kong and one from the US – this last case, despite being based in Pacifica (Silicon Valley), was a venture founded by Swiss entrepreneurs.

The case from Hong Kong was a large multinational company called Onix. This case was included in the study as a contrasting case with the others, which were all small companies with business models that required high level of technological development. As such, venture age and size were ignored as criteria since, as concluded by Chandra *et al.* (2012): an opportunity-based view reveals that these criteria may be found to be misleading once the opportunity formation process is fully understood. Also, many authors (*e.g.* JONES *et al*., 2011; KEUPP; GASSMAN, 2009; MCDOUGALL; OVIATT, 2000; OVIATT; MCDOUGALL, 2005) established, suggested or implied that variables of firm size and age may end up not being particularly relevant for IE phenomena, even though case and sample selection in the field are often determined by these parameters. Nevertheless, venture age and size are relevant when analyzing case data since they can impact absorptive capacity and influence the relative importance of different firm resources and capabilities (JONES *et al.*, 2011).

Besides the notable difference in size of the Onix case, it is also worth to highlight that, despite PB&B, TWIST and GoNitely being ventures heavily supported by technology and reliant on knowledge intensity to compete, they all belong to completely unrelated industries as far as product, industry structure, other competitive dynamics, investment needs, operational challenges and a host of other business aspects. Comparisons along such differing dimensions would be interesting for studies concerned with the topics of strategic entrepreneurship, industrial marketing and others, but these comparisons are not a focal point of the study, which allowed such a diverse set of cases to be used. The focus of the study is on the behavioral aspects of entrepreneurial activity that cross borders, making all the cases relevant in supporting the analysis that aimed to answer the research problem.

3.3.2 Data collection method

Next, still as part of the pre-analysis phase of the content analysis technique described by Bardin (1977), it was decided that data collection would include primary data and secondary data. Primary data was to be obtained from interviews, using audio and video conferencing tools, with entrepreneurs involved in the formation of the international opportunities. The use of these tools was seen as valid for the purposes and context of the study, also finding support in Yin (2009); *"you could even do a valid and high-quality case study without leaving the telephone or Internet, depending upon the topic being studied"* (p.15). As the physical presence of the researcher would provide little relevant observational type of data to answer the study's research question, no material downside was identified in the approach. Also, the use of such tools allowed the inclusion of entrepreneurs from multiple locations without costly travel expenses and long study lead-time.

The data collected through interviews was the main pool of information obtained. Secondary data was collected through other sources such as venture's and entrepreneur's electronic documents, venture's website (when available) and other publicly available records and news (venture information, industry data, market data, entrepreneur's information on online professional networks). The secondary data collected validated or complemented the primary data and enriched the understanding of opportunity formation and therefore strengthened the study's credibility and confirmability.

All interviews followed a standard semi-structured protocol. Not all questions were enunciated in all interviews, partly because some answers to later questions in the protocol were found in the interviewer's answers to earlier questions. When presenting a question, the interviewer provided slack to the interviewees so that they could answer freely according to their own understanding of the question and the research topics – this was done to avoid leading questions and biased answers. When an acceptable answer did not naturally emerge from the interviewee's discourse, or the question was not understood, explanations and examples were provided to help the interviewee elaborate on the subject.

Such semi-structured and open-ended approach to interviewing was adopted to increase the scope of the possible answers, allowing interviewees to provide detailed answers with facts, events, their own impressions and opinions. This provided leeway for each interviewee to explore the questions from their own perspective and move across different topics that related to their own individual context and previous experiences. This freedom avoided excessive framing, which could lead to loss of detail and would be detrimental to the rich description that was desired. At the same time, the protocol assured that all cases were investigated from the same conceptual perspective, with the interviewees being posed the same set of questions (with some adaptations as field work progressed), therefore enabling comparison between the answers.

The interview protocol was split in three parts: 1) general information about the entrepreneur, the venture and the industry, 2) aspects of international opportunities formation and 3) networks and institutional ties. Within each topic addressed, the entrepreneur was asked questions that aimed at clarifying the content of international opportunities, their formation processes and main influencing factors. Network usage was explored in order to understand the use networks in general and institutional ties. The full interview protocol can be found in Appendix A (English version used with non-Brazilian) and Appendix B (Brazilian Portuguese version).

For each case study, one complete interview was performed with the main entrepreneur, who in all cases was also the person who was most involved in the venture's interactions with its institutional partners. In only one case (TWIST) it was judged to be needed, and possible, to interview more than one person to get access to relevant additional details. In the Onix case, the interviewed entrepreneur led the company at the time, but several of his accounts related to his father's actions, the founder, to whom direct access was not possible.

The interviews had varying duration since each entrepreneur elaborated the answers to a different extent. The shortest interview lasted 76 minutes and the longest one 124 minutes, all recorded in digital audio. The transcript to be used in the analysis was done within two weeks of each interview. The interviews were done over a period of approximately six months, from April 28th, 2017 to October 19th, 2017 due to limited availability of the participating entrepreneurs.

3.3.3 Data analysis method

Data analysis was divided in four different phases: 1) material preparation, 2) development of content categories, 3) individual case analysis, 4) cross-case analysis. While material preparation is still part of the pre-analysis phase of content analysis (BARDIN, 1977), the development of content categories is part of the material exploration phase.

The material preparation consisted of making a transcript of all interviews, gathering relevant secondary information and asking additional clarifying questions to the interviewees through e-mail. Miles and Huberman (1994) observed that good interview transcription generates data that is not affected by the researcher's personal judgements of what is writable by the author and readable by potential study audiences. Any personal judgement in this process may directly affect the interpretations and later ascription of meaning, undermining the interpretations that can be drawn from data. Since all interviews were recorded in digital audio, the transcript did not suffer from these potential hazards.

Once all data was collected, a description of the cases was written in an attempt to organize the relevant data chronologically and thematically so that the ventures and the international opportunities could be understood from a linear descriptive discourse. This exercise forced reflection and synthesis of all collected information and produced readable accounts for all cases, which are reproduced in full in this report. This task provided the researcher with deeper familiarity with all data available and secured that the excessive fragmentation experienced during interviews (*e.g.* going back and forth to explore different topics) and secondary data collection would not be carried onto the final data analysis.

The next step was to define how exactly the study's findings would be inducted from the data. According to Eisenhardt (1989), data structuring is necessary to lead the researcher from raw data to supported conclusions, partially by helping to deal with the task of synthesizing large amounts of data, known as data reduction (MILES; HUBERMAN, 1994). Following Eisenhardt's (1989) recommendation, it was decided that the main design of this task would be a tabular display of the content categories and the cases, built to support within-case analysis, cross-case analysis, replication logic (YIN, 2009) and the construction of the resulting propositions. The use of this kind of display is one of the strategies by which researchers can avoid drawing conclusions based on text only (may lead to poor structure) and relying exclusively on overly simplified patterns (MILES; HUBERMAN, 1994).

The development of the content categories used in the tabular display adopted a progressive focusing approach (SINKOVICS; ALFOLDI, 2012), starting with a thorough review of the relevant literature and a purely theoretical point of view on research design and contextualization of the literature. The design articulated by the content categories was then continuously revised as field work progressed by suppressing or extending categories and elements of analysis within them to improve the fit between the research questions, the study's theoretical support and the context found in the different cases analyzed. This iterative process resulted in revisions of the previously established secondary research questions being addressed by the study in a manner to better support the exploration of the main research question in light of the collected data.

Making use of the defined content categories, the next task consisted of analyzing all cases, one at time, in a standardize manner. In light of the content categories, each paragraph of the case description was analyzed for elements that could be related to the category elements. A cornerstone of the study is found in this initial within-case analysis, in which the objective was to understand in detail what actually happened in the formation of each international opportunity and the context in which it happened, leading to tentative identification of relations and patterns. As the analysis of some of the cases revealed multiple international opportunities, each of them were treated as a single unit of analysis. For TWIST and GoNitely cases, since interesting events had occurred, but had not materialized as market opportunities, those were considered to be "opportunity events" and were analyzed to the extent it was possible and fruitful. For the Onix case, in which the description multiple market entries were bundled together by the interviewee due to their similarity, for simplicity purposes it was decided to analyze those opportunities as an "opportunity set"; a group of opportunities considered as having identical formation processes for the purposes of the analysis.

While a qualitative analysis with this amount of cases did not seek generalizability of the results, especially any kind of statistic to populations, the purposeful selection of cases with a full understanding of the important features in each case (*e.g.* cultural context, industry dynamics, location, R&D intensity, institutional partners) resulting from the case data analysis allowed some specific research findings to be generalized as theoretical propositions – *i.e.* analytical generalization – that can be tested in later research work (YIN, 2009). Such use of study case, as discussed previously, is frequent in international business and is increasingly supported by methodological literature (EISENHARDT, 1989).

3.3.3.1 Content categories

Foreign market choice

Despite not being a priori part of the research problem, the choice of foreign market in which to form an opportunity emerged as an interesting aspect to investigate during field work. This choice, whether conscious or imposed, is relevant to fully understand the international opportunity formation process. Within this category, three main aspects were included in the analysis, following the most relevant aspects reviewed in the literature. Johanson and Wiedersheim-Paul (1975) observed that most international business literature prioritized the size of the potential market as criteria for market entry but, along with Johanson and Vahlne (1977), the authors added psychic distance as another main criteria on which foreign market choice was based. Johansson and Vahlne (1990, 2003, 2009) and Schweizer *et al*. (2010) favored idiosyncratic network structure and the perception of opportunities in the current set of relationships as the main influences over the definition of which markets are entered (JOHANSON; VAHLNE, 2009).

Table 2 - Foreign market choice category: short description of category elements

Category element	**Summarized description**
Market size	Size of the total market relative to the opportunity is used by the entrepreneur to choose where to form an international opportunity
Psychic distance	Differences in culture, language, education, business practices and industrial development between counties is used to assess difficulty of forming opportunities in foreign markets
Networks	Preexisting ties guide opportunity formation in foreign markets and countries are not formally assessed as entities a priori

International opportunity type

For the purposes of the study, international opportunity is understood as the creation of new economic activity (KIRZNER, 1997) involving partners in foreign countries. Aside from this basic definition, both international entrepreneurship and entrepreneurship literature provide different dimensions in which opportunities can be differentiated from one another (*e.g.* ECKHARDT; SHANE, 2003; MAINELA *et al*. 2014). Some studies find relevant relationships between opportunity types and the character of the main influencing factors – *e.g.* networks (ANDERSSON *et al.*, 2005), therefore this category is used to observe if there is empirical relevance towards other influencing factors. Specifically, the study uses the opportunity type typology developed by Mainela *et al.* (2017), differentiating opportunities between objective (found in the environment) and subjective (negotiated between stakeholders), and between market (demand in a foreign market is met by deployment of resources organized in home country) and venture (opportunity and the business model associated with it are enabled by cross-border resource combination, internationalization is inseparable from the entrepreneurial process). One of the main intents is to verify how the use institutional ties relates to, or if they may affect, the type of opportunity formed.

Another important dimension in opportunity formation is differentiating if the initial information used to identify the opportunity comes from existing social ties, or if they are provided by unsolicited encounters (*e.g.* trade fairs) or formal market research – non-tie-based opportunities. The specific definition by Ellis (2011) is used to categorize the opportunities: *"the distinguishing characteristic of any tie-based exchange is a prior connection linking the exchange partners that* *is used to convey information regarding the exchange opportunity"* (p.110). Therefore, non-tie-based opportunities matches the expected role of institutional actors whose mandate is to promote new ties (GIBB, 1993).

Table 3 - International opportunity type category: short description of category elements

Category element	**Summarized description**
Objective opportunity	Entrepreneur perceives external elements and use them to form an opportunity
Subjective opportunity	Entrepreneur acts on incomplete information and opportunity is formed with feedback from market stakeholders
Venture opportunity	Combination of resources across borders is required to form an opportunity in a foreign market
Market Opportunity	Home country resources are used to exploit opportunity in foreign market
Tie-based	Preexistence of a common connection point between the exchange partners, and this common point is used to exchange information relevant to the opportunity formed
Non-tie-based	No common connection between the exchange partners is used to obtain information related to the opportunity formed

Formation process

Opportunity formation is the entrepreneurial process that results in new economic activity (MAINELA *et al*., 2014). As indicated by Alvarez and Barney (2007), once an opportunity is formed, it can be interpreted both as being created and discovered due to the internal consistency of the theories behind each perspective. Nevertheless, the analysis of the formation process of an opportunity uncovers the view adopted by the entrepreneur, which leads to different strategies when forming opportunities. The two dominant processes of opportunity formation described in the literature are discovery and creation (ALVAREZ; BARNEY, 2007), but discovery can also be differentiated from recognition (ARDICHVILI *et al*., 2003; SARASVATHY *et al*., 2003). Therefore, the study uses these three concepts as reference for analyzing the formation of international opportunities: recognition is understood as matching existing market demand and means to fulfill it, discovery is observed when an opportunity is formed by acquiring information about unknown demands (or means) and using known means (or demands) to fulfill it (or deploy it) and creation is the formation process when the entrepreneur's ideas about market demand, means available or both are modified after interacting with the external environment, mainly represented by other stakeholders (suppliers, financiers, new partners, customers).

Table 4 - Formation process category: short description of category elements

Category element	Summarized description
Recognition	Match information of generally known demand and means in the form of new business activity
Discovery	Match previously unknown emerging demand (means) with known means (demand)
Creation	The interpretation of the appropriate means and/or demand to be matched in order to form a business opportunity is shaped through interactions between the entrepreneur and other stakeholders

Influencing factors

The discussion over opportunity formation process is rich and many times conflicting in the literature (*e.g.* ALVAREZ; BARNEY, 2007, 2010; SARASVATHY *et al*., 2003). However, within these different processes, many common influencing factors have been extensively identified and discussed as important for opportunity formation. The main influencing factors extracted from the literature for this study are: social capital or network position (ELLIS, 2011; JOHANSON; VAHLNE, 2009;), environmental influences (DAVIDSSON, 2015; NARROZ; CHILD, 2017), entrepreneurial alertness (ARDICHVILI *et al*., 2003; KIRZNER, 1973) and systematic search (CHANDRA *et al*., 2009). To understand the influence of institutional ties in international opportunity formation, it is key that the role of these influencing factors is analyzed for each of the international opportunities so that the outcomes of the interactions with institutions can be related to the relevant factors in the specific international opportunity formation. Alertness was included due to the high frequency of the concept in the literature, and it was analyzed mainly by evaluating idiosyncratic prior knowledge (SHANE, 2000) and networks (*e.g.* ARDICHVILI *et al*., 2003), but not personal traits since the study has no intention to delve into cognition research. To facilitate analysis and due to its relevance in the literature, tie strength are analyzed with more detail as a separate content category.

Table 5 - Influencing factors category: short description of category elements

Category element	Summarized description

Social capital / network position	Partly managed intangible asset that facilitates establishing new ties and accessing information and resources relevant to opportunity formation
External enablers	Changes from previous state on elements such as technological breakthroughs, new regulations, demographic and consumer behavior shifts
Alertness	Perceiving relevant new information and integrating into a business opportunity (a behavior shaped by personality traits, social networks and prior knowledge)
Systematic search	Purposeful use of objective information from databases and market reports to form opportunities

Tie strength

Networks are an important aspect of internationalization research, and they have been studied as the environment in which opportunities are formed (SCHWEIZER *et al*., 2010). Structural factors of networks such as size, strength of ties and network density (GRANOVETTER, 1973; OVIATT; MCDOUGALL, 2005) are important dimensions of analysis in internationalization and are said to affect speed and effectiveness of internationalization processes and to impact opportunity types (ANDERSSON *et al.*, 2005; OVIATT; MCDOUGALL, 2005). It was decided to focus the analysis on the tie strength of main relationships involved in the formation of international opportunities and the ties between entrepreneurs and institutions. Tie strength was assessed by identifying the presence of social layering (GRANOVETTER, 1985), trust and commitment (ANDERSSON *et al.*, 2005; JOHANSON; MATTSSON, 1987) in the relationship. Whenever applicable, the influences of the institutional ties on other relationships were highlighted in the analysis.

Table 6 – Tie strength category: short description of category elements

Category element	**Summarized description**
Social layering	Non-economic dimensions of a relationship that either facilitate or hinder economic action.
Trust	Willingness to take action first in expectation of a certain response from an exchange partner.
Commitment	Evidence of short term sacrifices or efforts towards maintenance of long-term healthy relationship.

Content categories summarized

Table 7 - Content analysis: categories and elements

Content category	**Elements of analysis**	**Theoretical support**
Foreign market choice	Market size Psychic distance Networks	Johanson and Wiedersheim-Paul (1975), Johanson and Vahlne (1977) Johansson and Vahlne (2003, 2009)
International opportunity type	Objective market opportunity Objective venture opportunity Subjective market opportunity Subjective venture opportunity Tie-based / Non-tie-based	Mainela *et al.* (2017) Ellis (2011)
Formation process	Recognition Discovery Creation	Alvarez and Barney (2007), Ardichvili *et al*. (2003), Sarasvathy *et al.* (2003)
Influencing factors	Social capital / Network position External Enablers Alertness Systematic search	Ardichvili *et al.* (2003), Chandra *et al.* (2009), Davidsson (2015), Ellis (2011), Johanson and Vahlne (2009), Kirzner (1973), Narooz and Child (2017), Shane (2000)
Tie strength	Social layering Trust Commitment	Andersson *et al.* (2005), Granovetter (1973, 1985), Johanson and Mattsson (1987), Oviatt and McDougall (2005)

3.4 STUDY LIMITATIONS

Concerning research method limitations for the study, it is important to clarify that, despite the advantages of the case study method, which led to its selection for the study, the method itself and the overall qualitative approach to research imposes limitations that need to be acknowledged and taken into account in data analysis. Three main limitations are highlighted as important for the study: 1) the reliability of the data sources, 2) researcher's biases in analyzing, interpreting and ascribing meaning to data and 3) the potential for generalizability of the findings.

The first limitation takes place in the data collection phase. Primary data collected through interviews, like other qualitative approaches of data collection, can be affected by interviewee's biases, voluntarily or not. Memory recall issues, partial personal views from the interviewee and broad social biases hinder an objective and reliable depiction of events that are separate from the entrepreneur's interpretation, despite both being crucial for the subsequent analysis.

Researcher's personal views and biases can manifest in data collection, analysis and interpretation, distorting the acquisition of data and ascription of meaning to it. According to Nickerson (1998) confirmation bias is perhaps one of the most problematic aspects of human reasoning, and it has been long recognized to permeate academic research. It manifests itself basically as an unintentional *"selectivity in the acquisition and use of evidence* […] *molding of facts to fit hypotheses or beliefs"* (p.175). Not being intentional also means that the researcher conducting a study affected by such bias is unlikely to be aware of it. From a design perspective, the current study sought to avoid such bias by not developing propositions prior to data collection and analysis. The development of a priori propositions based on extant literature is a common research choice in case study designs, and it is even highlighted as being potentially positive in the sense of helping to deal with the large amount of data by focusing on confirmatory or disproving evidence relating to the specific propositions analyzed (YIN, 2009). The study adopted the procedure described by Bardin (1977), developing only the content categories – which were iterated with field data through progressive focusing (SINKOVICS; ALFOLDI, 2012) – to direct data collection towards certain topics, but no a priori propositions were used.

Another topic regarding methodological limitation is the issue of generalizability of the findings. As mentioned previously, the only potential generalizability of case studies is analytical (YIN, 2009). As such, no claims can be made on the behavior of populations based on this study since it is not possible to provide statistical support to this type of generalization. The propositions derived from the study are of theoretical nature, and they can only potentially explain certain relationships under certain conditions. Consequently, they can only be tested under the same specific conditions, and should not be expected to explain relationships for a population.

4 CASE DESCRIPTIONS

The study analyzed a total of four cases from different countries (Brazil, Hong Kong, Switzerland and US), different industries (medical technology, consumer goods, IT/data science and hospitality services) and involving entrepreneurs with different nationalities (Brazil, Hong Kong and Switzerland) and backgrounds. While Onix exhibited relevant international entrepreneurial phenomena, it was used mainly as a contrasting case in the study. The other cases displayed some similarities which could be considered as relevant for the analysis.

The first a priori similarity among cases was the size of the businesses. PB&B, TWIST and GoNitely were startups of slightly different sizes and stage of development, but they all shared limitations such as limited internalization of activities, illustrated by the fact that none of them owned fixed assets outside their home country. Onix was a significantly different; even though the origin of the company as an international venture was analyzed, and entrepreneurial behavior could be identified, at the time of the interview the company had focus on activities that were typical of large enterprises such as search for new markets to deploy existing fixed assets' capabilities. The analysis of its later behaviors were important as example of corporate entrepreneurship.

The second a priori similarity related to the entrepreneurs who were somehow tied to swissnex. Swissnex focused on supporting R&D based start-ups, which meant that those entrepreneurs were expected to have a technical and scientific background and to develop ventures and explore opportunities that were knowledge intensive. This held true for two of the cases in the study: PB&B and TWIST. While both of them had only brief interactions with swissnex and had not participated (as applicants) to its AIT program, they fit the profile that the institution aimed to support. Unique to TWIST was the fact that the venture was incubated at COPPE/UFRJ and had access to its support services.

All cases involved companies that had, or were effectively sure to have in the near future (PB&B), revenue from activities in foreign countries – the most defining trait of internationalization, therefore the analysis expected to uncover the details of the process of forming the opportunities that led to such economic activity.

4.1 Case PB&B

Anthony Aho is a Swiss-Canadian entrepreneur who spent most of his life between Switzerland and Canada (mostly Vancouver), but also lived two years in France and eight months in Brazil. His parents were artists and kept moving between Europe and Canada, and they made a conscious decision that Anthony would experience both continents to enrich his cultural background and take advantage of the diversity that their lifestyle could provide him.

In 2003 he decided to pursue a BSc. Life Sciences degree at the Swiss Federal Institute of Technology in Lausanne (EPFL), where he also pursued his MSc. degree in bioengineering and biotechnology, concluding it in 2010. From early on he had an interest in working with human aesthetics, lifestyle health and longevity, different from the majority of research in life sciences, which is traditionally focused on the studies of diseases and treatments for them. He felt motivated to develop knowledge that later would be applied in a way to make people have more joy in their lives by feeling better about how they look, as opposed to dedicating his efforts into mitigating symptoms and pain connected to different diseases.

Anthony recalled that he always intended to have his own business because, among other reasons, he was not particularly fond of the idea of having a boss, and he liked being able to take the decisions he felt were right. Being an entrepreneur would also allow him to deal with a variety of aspects of science and business, something he was interested in as he did not want to become too specialized in what he could do. In the end, he felt being an entrepreneur was the only option for him, and his intention was to start up a company that could create businesses around the biotechnologies he was interested in developing.

PB&B's founder described a high amount of uncertainty when proceeding with the launch of his life sciences venture since the type of company he planned to start required a large amount of funding and a certain number of extremely qualified partners. He also observed that startups in this area are usually based on a large amount of knowledge that is accumulated during years of research that is most often executed in university laboratories. PB&B is described by its founder as having a completely different emergence process. Anthony started the company based on his interpretation of what would be an ideal product for the market he wanted to explore; he believed there was a great opportunity in the area of plastic surgery, specifically in breast augmentation. All available procedures required some form of body implant, and Anthony's insight, together with co-founder Sergio Klinke, a friend from Anthony's undergraduate years, was that there would be enormous interest in replacing this type of invasive procedure with a solution that would achieve the same results by stimulation of natural cellular growth. In their assessment, the development of the right technology at that point in time was the missing enabler in exploiting this opportunity.

> *"If you can invent a product that can really disrupt the market, and is unique and patented, I don't think you're going to have to worry about selling it… people want something that is more natural, the whole market is shifting in that direction."*

This insight shaped all of Anthony's and Sergio's decisions regarding which specializations and courses they took during the remaining of their studies, and these choices were made always with the goal of acquiring the scientific knowledge and skills that would be required to develop their concept later on. After his graduation in 2010, Anthony decided to work with the development of clinical research at *Le Centre Hospitalier Universitaire Vaudois* (CHUV), as a scientific collaborator, in order to acquire expertise on the topic which he knew would be crucial when developing his own biotech company; clinical research and trials. He felt it was necessary to spend some time in hospitals and work together with doctors in order to understand how they performed clinical research and tests, because companies developing biotechnology spend ten years on average performing those activities before being able to launch certain products to the market, therefore any entrepreneur in this area needs a minimum broad understanding of how these tests are set up in clinics and hospitals together with doctors.

At the same time, he started researching on his own to understand the biological mechanisms of cellular growth that his solution would have to replicate, and also to look for technologies that could be used to stimulate such replication in the human body without surgical intervention. Despite him and Sergio sharing the vision of the opportunity in making breast augmentation a natural process, they had completely different technical perspectives on how to achieve it. By the end of 2011, Anthony shared a report of his research with Sergio, who still did not believe there was enough molecular and tissue level understanding of how the solution could work. Anthony continued working on his research and sent a new version of his report to Sergio in 2012, after which they agreed that the biological strategy that had been outlined was feasible. In total, Anthony spent two and half years doing this research based on academic materials and, by the end of this period, he wrote the final version of an 80-page technical report that described the existing research and outlined the scientific strategy to develop a new solution for cellular growth. Anthony used his research report to recruit one additional partner for PB&B and to contact research institutions that could support the company by performing laboratory and pre-clinical animal tests to demonstrate that the solution actually worked.

"We started with no money, no data, no labs… we developed step-by-step"

Despite having outlined and agreed on the molecular and tissue basis for the solution they wanted to develop, Anthony and Sergio did not have any knowledge on how to build the necessary product in a laboratory environment. Their next step then was to find someone with experience in tissue engineering and drug development that could support them. They posted a request online with these requirements and also used their own network to find someone. Eventually they found their third partner, Sandeep Raghunathan, who had just finished his Bioengineering PhD at EPFL and became interested in the idea behind PB&B.

The partners worked without any compensation in the beginning. As the company started winning innovation prizes, it was able start funding the work that needed to be developed in laboratories. The company was officially started up in 2013 after it won Venture Kick's innovation prize of CHF 130,000. Venture Kick is a program, funded by private foundations, companies and individuals, that has the goal of increasing the amount of spin-off companies out of Swiss universities, accelerate their time-to-market and raise the visibility of these startups for professional investors. A year later, PB&B won the HUG Innovation Trophy 2014 from the University Hospitals of Geneva (HUG). As the initial laboratory tests started producing promising results, it became easier to find investors and other people interested in being part of the project. Funding from the Swiss government was also received through the Commission for Technology and Innovation (CTI) and, at the time of the interview, PB&B had raised a total of three million US dollars in funding.

After some time, PB&B realized that the first application they envisioned for the company's product (breast augmentation) would be extremely risky, expensive, complicated and it would take a long time to reach the market. Realizing this would put too much strain on a startup company, they decided to pivot towards a simpler product that would be less risky and would produce the most efficient use of the capital that was available – a minimum viable product (MVP). This led

PB&B to focus on the development of a solution for facial filling that would use the simplest version of the technology initially outlined. Even with this new direction, PB&B's products would not be available to end consumers at least until 2020. The company had started pre-clinical animal tests in the beginning of 2014 in Switzerland, and those tests successfully demonstrated the feasibility of the solution. In order to proceed with clinical tests in humans, the company was required to get the sign off from an EU-approved ethics committee, which demanded a plethora of documentation and data about the previous studies on the solution in order to assure the committee of the safety of the tests to be performed. At the time of the interview, PB&B planned to finish another round pre-clinical animal tests, being conducted in France, and gather all the required information to get the ethics committee's approval by the end of 2017, which would allow them to start clinical tests in humans still in the first quarter of 2018. Before the conclusion of this study, PB&B had moved its clinical test plans for the third quarter of 2018.

Anthony reported that when developing a medical product, legal and regulatory aspects played a major role in a series of strategic decision for the company. One such decision was that the first regulatory approval to be sought would be from the European Medicines Agency (EMA), firstly because the approval process was easier than the one at the Food and Drug Administration (FDA) in the United States (which would be a second option), and secondly because after getting approval from EMA, it would become extremely easy to get approval from an extensive list of countries that use Europe's agency as a reference for this type of regulation, specifically Middle East, Brazil and Northern Africa, where no additional testing would be required. PB&B used external consultants to clarify all legal and regulatory-related issues in order for the partners to make informed decisions that impacted this area.

At the time of the interview, the company relied heavily on suppliers of highly specialized services that involved expensive facilities and equipment. As a startup, even if it would be possible to acquire, such equipment would not be put to use in their full capacity, which would be a poor investment decision. Therefore, it was very clear to Anthony that it would be necessary to rely on external partnerships to execute much of the needed activities, and he described testing and production facilities as the main components of the existing external partnerships supporting PB&B. Regarding testing, the first partners were academic laboratories from EPFL and HUG but, since there were many limitations on the types of tests that could be executed in academic settings, soon after it was needed to buy the services from a large international contract research organization (CRO) with experience in executing pharmaceutical and biotechnology tests on a contractual basis. Importantly, Anthony was able to find a partner with relevant experience in testing facial injectable products for aesthetics, and the tests started being conducted by this company in France. Simultaneously to testing, PB&B had already found a supplier in Boston (considered an innovation hub in US's life science sector) that would be used for manufacturing the product, and had requested the supplier to start scaling the production facilities to meet the forecasted demand.

PB&B's customers would be plastic surgeons, and Anthony acknowledges that usually these customers are expensive to reach, as they require significant sales representation effort on-site. As such, even though this was not completely decided, PB&B would most likely license its technology and products to a larger player in the medical industry so that the company could focus its efforts in the continued development and testing of new products – this is what the founder saw as the real value delivered by the company. The company had filed an extensive patent application, from which different types of products could be developed, and there was already the need to continue to develop these products to support the growth of the company after the first product reached the market. A second route to market being considered by the company was to rely on distributors, a strategy used by many companies in the area of aesthetics. A third, and less likely option according to the partners, would the development of PB&B's own sales team to reach out to customers.

Typically, startups in the area of biotechnology are acquired by larger companies before ever reaching the market, especially if they have a very innovative and promising technology. Anthony described the example of Kythera Biopharmaceuticals, a US startup that developed a facial injection to kill fat cells (the opposite of PB&B's application) and was able to raise approximately USD 100,000,000 to get approval from the FDA agency in the US for their solution, which was the first non-surgical treatment to submental fullness (referred to as "double chin") and, a few weeks after getting the approval, was acquired by Allergan, the largest pharmaceutical company in the area of aesthetics, for approximately 2.1 Billion US dollars. This strategy is common for startups in the industry, and it is often presented to initial investors (*e.g.* venture capitalists) as the planned exit strategy since most early-stage investors believe the value of these startups is in developing innovative solutions and getting regulatory approval for them, but they are not willing to invest in these companies to grow into a sales operation as well – this requires a different type of investor. PB&B's partners believe that an acquisition was also the most likely path for their company, since it would be unlikely that a large established player would not be interested in their technology once it got regulatory approval. Allergan, which produces Botox and controls over a third of the facial filling market, is one of the main competitors for PB&B, together with Galderma (owned by Nestlé) and Merz Aesthetics, a private family-owned company based in Germany – all of them could potentially make an acquisition offer.

Despite this characteristic of the industry, Anthony considered that PB&B had been lucky with the investors the company was able to attract. According to him, investors wanted to stick with the company as long as they could, not pushing for premature sale of the business. Also, the biggest investment made in PB&B came in April of 2016 in the form of a two million Swiss Francs strategic investment from a large Chinese company that had its own chain of aesthetic treatment centers in China and targeted the elite segment of that market. The investment came about as a result of this investor's strategy: it positions itself in the Chinese market as an exclusive supplier of premium European aesthetics products. To be able to deliver this promise to the market, the company established an office in Paris with the aim of securing exclusive distribution deals for premium European products in China. This office was given the mission to actively look for innovative high-end products in the European aesthetics industry. Even though Anthony never found out who recommended PB&B to this investor, he explained that, since he was often pitching the company to groups of plastic surgeons across Europe, and this investor also had an established network of contacts that included a large number of plastic surgeons, most likely the word-of-mouth spread of information among these professionals brought the information about PB&B to the aforementioned office in Paris.

The investor planned to distribute and sell PB&B's products within its own distribution channel, and they were not particularly concerned about having an exit strategy for PB&B since the strategic reasoning for the investment was not only the acquisition of a stake in the company, but also to securing exclusive distribution rights for the Chinese market of PB&B's facial filling product and having the company supplying new innovative products in the future. This investment changed once more the go-to-market strategy for PB&B since its new investor requested the development of an even simpler product than the company's previous MVP, in the form of an antiaging facial cream, that could be marketed within a short timeframe. At the same time, the investor committed to cover all the development costs of the requested product while being significantly hands-off as far as the operational activities of PB&B. Due to the simplified nature of the product, the timeframe to reach the Chinese was advanced to the end of 2017, which would allow the company to have revenue much sooner than what was previously anticipated.

While the specifics of the situation brought a well-defined impact to PB&B's product portfolio, Anthony highlighted that doing business with other countries could have a host of significant implications to other decisions the company made. He explained specifically the issue of where the product would be manufactured and the incentives and barriers for that: while manufacturing in China could be cheaper, this would very likely damage the prospects for the product in Europe, where there are concerns over medical products, especially injectables, that would not be subject to European levels of quality control. In Brazil, on the other hand, there would be significant taxes over the imported product, which made PB&B reason that the Latin American market would be more efficiently explored if its products were licensed to a company that would have the capability to manufacture them locally in order to keep its competitiveness. For the US market, where the current manufacturing partner is located, there could concerns if manufacturing was not located in that country since the foreseeable trend in US policy was to adopt higher taxation for imported products. Specific to the Chinese market, Anthony observed a hardly questionable need of having a Chinese business partner closely involved in supporting sales in that country, something that he perceived as being incentivized by the Chinese government, and also an aspect that had several confirmatory examples, one of them being Uber, who tried to enter the market without local partners to sustain higher profit margins and ended up losing market position to a Chinese copycat solution of its service. While the objective regulatory aspect of markets was clarified by PB&B through specialized consulting services, broader and softer aspects of the different markets were researched by the co-founders, either using public information or using their network in the Swiss high-tech startup community, which was described as having an extremely high level of trust among its entrepreneurs, with a free flow of valuable entrepreneurial experience from the exploration of international markets and other startup issues.

"Some of the best advice I have received comes from other entrepreneurs and CEOs who had conducted business in different countries. That's the

> *experience that I get the most value of, not from consultants or someone that worked within a large company with a lot of resources and limited set of responsibilities"*

The mentality of Swiss startups was described by PB&B's founder as being somewhat limited regarding internationalization. While he, from the beginning, always aimed at introducing his company's products to countries that had the most attractive market to them, most Swiss startups internationalize to Germany, France and UK, more or less in that order. PB&B analysis had led the company to consider US, Brazil and China as favored markets for introducing its products. Interestingly, from these countries, China was always perceived by Anthony as the market that would be introduced last in the company's scope, and his mindset was mostly focused on getting EU-approval to have facilitated access to the Brazilian market and in planning for US approval for the products. He also admits that, despite US and Brazil in fact being the biggest markets to the company's products, he felt personally comfortable and motivated to pursue these markets since the described Canadian and US cultures as extremely similar, and he judged himself as having a fair grasp of the Brazilian market and culture due to his eight-month experience living in Brazil, where he met his Brazilian wife – who ensures some Brazilian culture is always present in his life – and also managed to learn Portuguese to a good level.

This priority was completely changed due to the new investments received. Anthony went to the US to develop fund raising efforts, which ended up helping to raise the company's profile among possible investors in Europe, and might also have played a role in PB&B's Chinese investor taking the initiative to invest. He highlighted that unexpected events could have definitive impact on the company's ability to exploit different market opportunities.

> *"There are a number of factors… being at the right place and time, what the competition is doing… how is the consumer going to react… small technical details can also make it all go away."*

Anthony highlighted that the potential of generating valuable intellectual property (IP) is probably the most valuable asset of any biotech startup, since it is from IPs that all the value is derived from in this market. Therefore, to understand the value of an opportunity, the company needs to know how original and unprecedented an idea actually is, which is usually done through a freedom to operate (FTO) search that can cost from ten to thirty thousand dollars, depending on the regions included in the investigation. The outcome of the FTO is an important factor in attracting investors since any possible limitations to the application of an idea severely damages the perception of value in the startup.

The regulatory environment also plays a major role in the value of an idea because depending on how the product is engineered, it can be classified differently and be subject to different levels of regulatory oversight and requirements prior to market launch, which plays a major influence in the risks and financial requirements of the company developing the idea. Anthony estimated that roughly a product categorized as a drug can be up to ten times more expensive to approve when compared to a product categorized as a medical device, and it also takes about three times (on average) as long to reach the market. This aspect was the main driver for PB&B to pivot its initial plan to tackle breast augmentation since the solution to ideally replicate natural human biology in this application – one that would address all relevant biological aspects and have results lasting for about ten years – would be classified as a drug, or a combination product (device complemented by drugs), while the simpler facial application, with a shorter lasting results, could be categorized as a medical device. With a simpler product on the market, the company could reduce its initial time to market and then continue developing more complex applications.

Regarding the network of PB&B and Anthony's personal network, there is an extensive overlap between them since his idea of having his own company in the area of life sciences has accompanied him for most of his life, which ended up shaping his relationships towards people from related fields and also with potential business partners, such as wealthy families that could become investors. At PB&B's stage of development, its investors and shareholders were seen as main actors in the venture's network due to the need to manage their interests and expectations towards the company. Along with investors, production and testing partners were identified as key to the continued development of opportunities. While the network that was in place was seen as able to providing a host of opportunities to be explored, Anthony mentioned that if faced with the need to expand his network to reach necessary information or resources, using the existing network tended to be more efficient than using a systematic search approach.

4.2 Case TWIST

Fernando Guimaraes Ferreira, a 32-year-old entrepreneur, born in Pelotas, Rio Grande do Sul, was brought up briefly in Porto Alegre, but lived in Rio de Janeiro (RJ) for most of his life. In his early youth he was interested in physics and astronomy, but a brief experience with junior high school research projects at the *Planetário do Rio* and *Observatório Nacional* left him with the impression that this area was slow-moving and insufficiently funded in Brazil, which led him to explore different options. After receiving counseling from high school professor, he decided to steer his efforts into an electronic engineering degree at Universidade Federal do Rio de Janeiro (UFRJ), an area that he considered to offer a broad range of choices in which he could develop into later on.

He was, at the time of the interview, pursuing a doctoral degree at *Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa em Engenharia* (COPPE-UFRJ) with a research focus in computation intelligence, the same topic he had studied in his MSc. studies at the same institution. During his undergraduate studies he had the opportunity to be involved in a research project at the *Laboratório de Processamento de Sinais* (LPS) from UFRJ, which provided support to ATLAS, one of the major general-purpose detectors at the Large Hadron Collider (LHC) at the *Conseil Européenne pour la Recherche Nucléaire* (CERN) in Geneva, which led him and some of his research colleagues to live in Switzerland for on-and-off periods of time from 2007 until 2014 – these colleagues later on became partners in starting up TWIST. The possibility to go to Switzerland to work at CERN was a big draw for students who were working at LPS, and it was no different for Fernando. During his studies, he focused on the computational aspects of engineering, and he based his graduation thesis on the development of web-based monitoring systems for scientific data gathering – a topic that also spilled over into this MSc. research – which was the type of solution students from LPS were developing for CERN. Despite dealing with the same broad research area on his doctoral studies, this latter project veered into the application of machine learning in the oil and gas industry. Fernando presented himself as a data scientist, focused on the developing of machine learning, following the latest denomination to emerge in this area of knowledge. The project with which Fernando and his colleagues worked to support CERN consisted basically of the development of a system that was able to access different databases, integrate the different data structures and display the information in a single graphical user interface. This system was needed at CERN due to the collaborative aspect of the project, which involved more than 140 institutions globally, each developing different components for ATLAS that gathered and stored data in different ways. All the data generated by these components needed to be read and understood by all other researchers, who were mostly physicists and did not have the IT knowledge to integrate the different databases in an efficient way.

TWIST was founded in the end of 2011 when Fernando was about to finish his MSc. The founding of the venture was encouraged by LPS, since it was a way for Fernando and his colleagues – which were highly regarded at LPS – to continue working with projects for the laboratory even if they left their academic status (all of them were about to finish their MSc. research projects). Also, Fernando recalled that many public notices for the development of research projects at *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro* (FAPERJ) and *Financiadora de Estudos e Projetos* (FINEP) required a high percentage of the research financial aid to be used towards the payment of private companies, which raised the interest of LPS in having Fernando and his colleagues providing research services as a small business venture – a way for LPS to optimize the allocation of the funding provided by those institutions. Another motivation to pursue this alternative was the fact the funding received by LPS to maintain its support to CERN was decreasing, which prompted Fernando and his colleagues to discuss, together with advisers from LPS, the actual startup of the venture as a way of allowing the team to be hired directly by CERN, as opposed to working through the institutional arrangement with UFRJ. As a way to give fruition to the intention, the partners successfully applied to be part of UFRJ's incubation preparatory course.

When applying to the incubation program, Fernando and his partners researched the market and reached the conclusion that the need to integrate databases with different structures was far from being a problem specific to CERN or to the academic environment, and was in fact a common challenge of most business in the recent years, as they have to deal with continuously growing amounts of data, and have narrowing margins of error due to growing levels of competition in most industries. Therefore, despite the very specific reason to receive the initial encouragement from LPS, Fernando and his partners aimed for their venture to grow outside LPS's intentions, since there was also a personal interest from them in developing new solutions that could be marketed. Prior to formal incubation, Fernando and his colleagues attended the five-week preparatory course at the incubator, with the final objective of producing a business plan for the venture to be started up. This was a significant challenge and shock for them since they all had an engineering-only background, and little experience in organizational structuring, business management and market research, some of the important entrepreneurial capabilities that were explored in the preparation course. Despite having recognized the need for the type of solution they had developed, Fernando recalled that they were not clear who were their customers:

> *"We had the hammer, but we were still looking for a nail that we could hit with it!"*

The preparation course gave them the chance to try to find an application for their expertise in data integration. Initially, their market research pointed to the area of logistics as seemingly providing great application potential, since value chains often span large geographical territories and require large amounts of data coming from different companies to be integrated in order to optimize pick-up, transportation and delivery timing. This application was the one that TWIST used to elaborate its business plan and get it approved to enter UFRJ's incubator. Their approval was also facilitated since there was clear connection with UFRJ's research labs, and the possibility to work for CERN, which further strengthened TWIST's ties with the university and the reasoning for URFJ to have the venture inside the incubator.

At the time of startup, TWIST was formed by six partners – all of which shared the common experience at LPS and CERN. Some projects were delivered to LPS in the beginning of TWIST's operations, but the company pursued a completely different direction than what was outlined in its original business plan. Also, the partnership with CERN never materialized due to a bureaucratic barrier of the CERN setup: due to Brazil not being an official member of the program, the institution could not hire Brazilian private companies directly. Payments could be made to UFRJ because the university had an account in Switzerland so that it could pay for the expenses incurred in Switzerland while supporting projects there, but this money could not be transferred back to Brazil. While there was a decision that Brazil would become an official member, this required the approval of certain bodies of the Brazilian government – since official membership required annual payments to be made by the Brazilian government to CERN – which never happened.

In the beginning of 2012, TWIST started developing a new system with the same philosophy behind the system developed for CERN, but which had a simpler interface and could be more flexibly marketed into different applications. Developing the system itself proved to be an extensive challenge since at the same time that its functionality was more complex, its final output needed to be more easily used by final customers. In this phase, the incubator provided important consulting services in the areas of marketing, branding and legal support, all of which helped Fernando and his partners transition from a group of academic researchers into an entrepreneurial venture. He describes the transition as more difficult than what it may seem, especially due to aspects of business such as customer engagement and the need to communicate a highly professional image when potential customers have no prior knowledge of TWIST and its capabilities. Another aspect in this transition was the functional division within the company since, at the very beginning there was no clear responsibility split. Fernando explained that initially they thought it would be a good idea that all partners were involved in some key areas of the company, such as programming, since it was seen as the core knowledge of the company. The idea soon proved to cause some confusion and the team eventually acknowledge the need to have clear responsibilities and division of work – even programming could not be done by everyone.

> *"Just like a bad football team, all players were running towards the ball, instead of focusing in specific areas of the field. I had to be in several meeting with customers, and often delayed programming deliveries"*

During the development of the system, the company started prospecting potential customers and meeting with them. As an output of that, TWIST started realizing that the data integration system was going to be extremely difficult to market. Supporting this conclusion was the fact that even though data integration within large companies was not optimal, it was already done in some way, and most potential customers signaled that they were not willing to invest more to have a different solution, even if the solution in place was not efficient. Secondly, the customers that were willing to invest in this area usually did not have confidence that TWIST would be able to deliver a robust solution, since the company did not have a track record in delivering data integration for a business environment, but only academic. These customers preferred market-tested solutions from big players like Oracle, SAP and IBM, even if the price differential was more than fourfold compared to TWIST.

Also during 2012, TWIST was in negotiations with Odebrecht to take part in a public bid project in the area of defense, in which data integration would be needed. Within this project, there was the potential need to integrate non-structured data, which led TWIST to include non-structure data into its technical scope. Even though this project never materialized, it encouraged TWIST to focus on the analysis of data that was already integrated some way, in order to produce business intelligence from raw non-structured data. Further, in the end of 2012, the company ventured into analyzing text (e.g. news, social media content, text documents, etc.), a common form of non-structured data. The system that started being developed by TWIST aimed at identifying people, topics and places mentioned in a text and transform this into structured information that could be analyzed quantitatively.

In 2013, after a period of prospecting customers with the new value proposition, one of TWIST's partners received a job offer from Rede Globo television network to work with data intelligence. In light of this opportunity, the partners decided that two of them would attend the job interview to present the type of analysis the company was developing. The interview meeting ended up generating a few projects with Rede Globo as a customer, an experience which confirmed that the new direction for the company was promising. Since then, the company has developed three different business applications products that are offered to its customers in the software as service (SaaS) model, in which a period-based fee is charged to access different levels of functionality. While the company has large customers for its products, Fernando reported that the market scale had not yet, at the time of the interview, reached a level which it would be clear to the partners that the current product portfolio communicated to potential customers – and investors – the full value of TWIST's capabilities. The main customers for the products were advertising and press agencies – which had faced reduced profit margins in recent years and had a clear need to improve the efficiency with which they provided their services, strategic business intelligence departments of large corporations, broadcast networks and even political parties. Other than SaaS products, TWIST also worked with specialized business intelligence projects as a way of prospecting new customers, build its network and have additional revenue streams. Fernando highlighted the highly technological nature of TWIST's products and, specifically, the high pace at which the data science field is evolving, due to extremely large global IT companies investing a lot in research and development in this area, made it a challenge to keep the technological basis of the data science products up to the date with the latest industry developments.

During the planning stages of the 2015/2016 AIT program, the Brazilian office of swissnex reached out to UFRJ's business incubator, looking for entrepreneurs and ventures that could have valuable experiences to be shared with the participants of the program. Aware of the strong ties of TWIST's partners to Switzerland, the management of the business incubator recommended them to swissnex, a recommendation that was immediately accepted. TWIST became one of the presenters in the Rio de Janeiro leg of the AIT program. During the program, Fernando and his partners became acquaintances with the entrepreneurs from a venture called SThAR, a Swiss marketing startup that used mathematical models and principles from physics to predict patterns of how information spreads in a geographical region in relation to where it is made physically available – e.g. outdoors, pamphlets – and to the means used to transfer the information. STAR's partners were one of the participants of the AIT program that year.

After this initial contact, the companies continued to discuss possible collaborations. This eventually came to fruition through a project request that came from Telefonica to SThAR and that required the type of service provided by TWIST in order to be executed. The project emerged when Telefonica Spain acquired Tuenti, a formerly popular Spanish social network platform whose popularity had decreased significantly, and decided to use the existing brand to launch a mobile network focused on young adults. The request from Telefonica to SThAR was to monitor the shift in the customer's understanding regarding what the brand represented. While SThAR used its knowledge and tools to recommend specific areas in which marketing and promotional material should be displayed and distributed, TWIST was recommended as the business partner to monitor the response from target groups in social media platforms and confirm that the audience understood the brand transition from being a social network to becoming a mobile operator – this was possible due to TWIST's system capability of classifying text into categories that represented specific topics being discussed.

Despite the project being successfully executed both by SThAR and TWIST, the results of the analysis pointed to a failure from Telefonica's marketing strategy; outcome of the investment was subpar since the target audience did not react according to what was expected. This caused the company to cease this marketing effort and stop the partnerships with SThAR and TWIST. Fernando reported that they keep a close relationship with SThAR and communication with the Swiss partner, having recently met with CEO of the company during a visit of his to Brazil, which could lead to more collaboration projects in the future since the two ventures have somewhat complementary capabilities related to marketing and business intelligence.

By June of 2017, TWIST had retained four of its original partners, working with responsibility split in commercial, finance, operations and technology development, plus three additional interns – two of them supporting system development, and one focused on commercial communication. The company was in the process of being approved to join UFRJ's technological park, a natural next step after leaving the business incubator – something the company was preparing to do. Joining the technological park would grant certain benefits such as physical infrastructure. Another factor into play, before leaving the incubator, was the decreasing support from the institution in the form of consulting services due to recent budget cuts, which was mitigated through a closer partnership between the incubator, COPPEAD and its alumni network, who are able to offer mentoring and other consulting services. Mentoring from COPPEAD alumni was mentioned as important since it had led to some important connections with potential customers. One other such consulting service, delivered in a cooperation between two COPPEAD's MSc. students and three students from University of California San Diego, was the planning for TWIST's further internationalization.

The analysis done by the consulting team provided TWIST with some interesting recommendations. As an input to the analysis, TWIST provided four candidate countries to which the company had previously considered to internationalize: Switzerland, United Kingdom (UK), Canada and US. While Switzerland was considered by the partners due to the existing ties of the company with that country, this option was quickly dismissed by the consulting team based on three arguments: first, the complexity of performing text analysis for the Swiss market since the country has four official languages, of which only French is a language that TWIST's products were partly capable of performing analysis, secondly, due to the small size of the Swiss market, internationalization to that country would have to be soon followed by exploration of other opportunities in Europe – which is not as straightforward as it could be since the country is not part of the European Union (EU) common market, and thirdly, the rules for immigration are especially strict for non-EU citizens. The UK had been listed by TWIST because the company had received in 2015 and 2016, through UFRJ's incubator, representatives from Britain's consulate that were prospecting startups to be brought to that country. Since the analysis was performed before Brexit, the UK presented some interesting characteristics, such a single language with which TWIST's products were ready to work with and free access to the EU common market. Regarding the US market, the consulting team, mainly based on the inputs from San Diego members, did not recommend it for internationalization effort, due to an extremely high level of competition found in that country in this industry, especially coming from tech companies from Silicon Valley that enjoy high levels of credibility, which could make extremely difficult for a Brazilian company to be chosen as a supplier of this type of solution by the potential customers.

Canada was listed by TWIST because it had been in contact with the Canadian consulate in Rio de Janeiro, through contacts made available by UFRJ's incubator, to discuss the possibility of opening an office in that country. After an initial contact, a continued relationship with the consulate was established through participations in workshops, networking events and invitations to be part of internationalization incentive programs from the Toronto area and to become a member of the *Câmara de Comércio Brasil-Canadá* (CCBC). Canada was pointed as the most promising country by the consulting team because it had a considerably sized market (approximately the same as Brazil), required only English to be handled in text analysis, had lessened competition if compared to the US and could be more open to welcoming a Brazilian company developing highly technological solutions.

Felipe Fink Grael, the partner at TWIST responsible for the technology area, visited Canada and investigated the structure that had been advertised by the Canadian embassy to UFRJ's business incubator and offered to companies like TWIST. Through this internationalization incentive program, he also made some connections with business incubators, other companies and clarified what was the specific support provided by the Canadian government, such as lower rate financing of salary payment to hired employees and facilitated access to becoming Canadian citizens if the company operated for a certain time in the country. Despite this effort from TWIST, Felipe reported difficulty in clarifying the details of this type of incentive program, finding mostly generic information to be available, which left him with mixed impressions towards their actual favorability to the company since, in the end, the company would initially invest a large amount up front to enter the market, without being clear on the support that it would receive in successfully growing in their business inside the country.

Due to focusing on other activities and being unable to frequently visit the country and potential partners, this opportunity had not been further explored yet. While the relationship with the Canadian consulate and CCBC had the potential of providing good market insights services and perhaps generating direct recommendations to potential clients, both Felipe and Fernando speculated that it would probably be necessary to have more consistent representation for the company on-site in order to build relationships with potential customers and materialize the opportunities. This conclusion is also based on their experience in Brazil since the majority of TWIST's customers were garnered through word-of-mouth recommendation from institutional partners, previous customers or other contact persons that were able to establish TWIST's credibility to the new potential customer. TWIST had previously performed systematic market research followed by cold calling sales efforts in the Brazilian market. While the strategy succeeded in some occasions, the success rate was much lower and could indicate a significant barrier for the acquisition of foreign customers. Still, Fernando highlighted that at the time this strategy was executed, there were other factors that may have jeopardized its outcomes, such as an insufficiently clear communication of the company's value proposition and suboptimal communication material (*e.g.* website lacking information). As such, he did not fully dismiss the possibility of systematically searching for customers abroad in the future when those aspects had become a strong pillar of TWIST, as opposed to being a shortcoming. Felipe added that the cultural differences would also be a challenge to be overcome since the communication with potential clients would have to be structured in a way to reduce their perception of risk when hiring a small Brazilian company that is trying to grow and internationalize – especially because TWIST might have to compete with local companies that may enjoy an unfounded lower risk perception by the clients.

Beyond the perceived requirement of being physically present in the target market, it was only possible to expand to markets that have languages that are known to some extent by TWIST's partners so that the products could be adjusted with the necessary algorithms (the products were already prepared for Brazilian Portuguese, Spanish and English). Still, the partners at TWIST believe in a high potential for internationalization of the company and its products since the need to manage non-structured data is not specific to any geography. Fernando stated that the company was willing to be flexible with some of its practices, such as adjustments to the business model and some customizations to its systems, in order to enable the exploitation of an unexpected internationalization opportunity, but it would be extremely unlikely that an internationalization opportunity could motivate TWIST to completely change its core technology and value proposition, even if the company is open to experimentation and gradual change.

The period of 2016 is described as a hiatus of new customers, which put a financial strain on the company, but also allowed the team to improve its products, clarify the company's values proposition and identify – through the mentoring of Artplan, a publicity agency – the need to work on its branding and communication material. The main point of the change in TWIST's communication was to clearly differentiate it from social media monitoring services, which are abundant in Brazil with both national and international competition, and had recently suffered from an increasing perception that the information delivered by such services is too narrow and of limited value to customers. Furthermore, this work would be valuable in communicating the right image to potential investors since the company had been approached by different investors with proposals that were completely misaligned with the interests of TWITS's partners regarding future direction for the company. As an example, TWIST had sought to form partnerships with other larger companies that could lend market credibility and a broader network of potential clients, therefore facilitating sales efforts, but in some occasions these potential partners ended up being interested only in acquiring a stake at TWIST, which led the company to have more reservations in using partnerships as a path to expand the business.

TWIST relied strongly on networking, with both institutional partners and other companies, to be recommended to potential customers and reach them with an established minimum level of credibility – a challenge to be overcome due to a higher perception of risk that potential clients commonly attribute to deliveries from small-size companies. Institutional partners seemed to be particularly helpful in establishing TWIST as a professional company that had fully transitioned from a team of students and researchers to being a specialized service provider. Institutional recommendations referring to TWIST as a highly knowledgeable solution provider also helped establishing a certain marketing positioning for the company. But when it comes to direct recommendations to large potential customers, the network of mentors was identified as the most power asset in the TWIST's network, since it had already produced several important networking opportunities for the company. The institutional partners were reported to be important in providing connections outside the current network of the venture, and there was little expectation that these institutions would provide resources such as relevant financial aid. Despite these differences in benefits provided from each type of relationship, no particular difference in the communication dynamics was reported.

Fernando reported the importance of being aware of how their contacts have both the potential of making direct recommendations to customers and also supporting to spread the marketing message for the company in order to increase its network and establish it trustworthy reputation. In his view, the partners' background and their capability of developing technologically advanced solutions is the main asset used by TWIST to build its social capital to maintain and expand its network, but the effectivity in using it is dramatically improved when an institutional partner assures a potential customer of the company's capabilities. This assurance is sometimes secured due to having a dense network.

> *"We often meet the same people in apparently completely unrelated events. It's hard to say if we have a large network, but it is definitely dense"*

The close relationship with the university was also mentioned as an advantage in providing access to highly skilled young professionals, something seen as critical for the continuous development of technical solutions to be integrated into the company's products. Maintaining those skilled people was reported as a current challenge since the company is unable to offer financial benefits that can compete with the type of offers received by highly-qualified interns at large companies. The company's relationships with suppliers is very straightforward since its biggest need towards them is the use of data servers, a service purchase that is based purely on technical requirements and price, especially for smaller companies that have little bargaining power towards the suppliers of this type of service – usually giants such as Amazon and Microsoft. Another relevant need is the purchase of relevant data to perform certain data analysis, but again, usually the supplier are large social media platforms and search engines that provide more or less standardized data packages at different prices.

At the time of the interview, TWIST was fully engaged in the Lean Startup Program – a training program executed through a partnership between the Berkeley University of California, Alumni COPPEAD, UFRJ's technological park and the *Instituto de Educação para Empreendedores* (IEPE), with the objective or enhancing the capability of ventures in testing and launching innovative products and services. During a period of eight weeks, TWIST partners interacted with a large number of companies and this could potentially lead them other international opportunities.

4.3 Case GoNitely

Markus Scharnowski is a 34-year-old Swiss entrepreneur who lived most of his life in Switzerland and travelled extensively to over 50 countries up to the time of the interview. He also had lived in Colorado Springs (US) for an exchange period during high school and in Cartagena (Colombia) in 2000-2001. His early professional aspirations were to become a high school teacher – a highly respected and well-paid career in Switzerland. In pursuit of those plans he obtained a double master’s degree from the University of Bern in Sports Science and Spanish Linguistics and Literature. Markus worked since the age of 13 and decided to start his first company in 2010. This first venture was started up with a friend and provided services in the area of public relations and graphical design. At the same time, he also decided to pursue a PhD education in Spanish language literature as a continuation of his Master thesis on Colombian literature. Although the topic of his education turned out to be unrelated to his later pursuits, Markus was engaged by the mental challenge involved in developing the complex analysis required to obtain his degrees.

In 2014 Markus completed his PhD, got married, sold his business and decided to spent 12 months travelling to approximately 30 countries. Markus owned, along with his brother, a house in the Swiss mountains that had been built by his grandfather and belonged to his mother before him. This house had always been rented out to visitors and tourists through multiple online platforms and the whole process was managed manually by Markus, which was only possible because he was organized and tech savvy to handle the property’s calendar and the practical challenges of coordinating and providing support to the guests (payment issues, cleaning, house supplies, etc.). When planning to leave Switzerland, Markus realized he wouldn’t be able to do this remotely so he tried to find someone who could step in and manage the property. He concluded that people with the availability to do it were not organized or tech savvy enough to manage all the tasks he had been doing. Without having found an optimal solution, Markus asked his brother to manage the property and left the country.

During their travel, Markus and his wife, Judith, noticed that a surprising number of very attractive places to stay, as a guest or tourist, were empty despite the availability of solutions like

Airbnb and HomeAway that enabled vacation home owners to manage short term rental. Markus realized the situation he found himself (not being nearby to manage his house in the Swiss mountains) was a common challenge all over the world. When their travel led them to Pacifica (California, US), Markus and Judith stayed with friends who were facing similar problems. Those friends were investors and had recently bought a property due to its low price and were unsure of what to do with it – they hadn't got around to renting it as they didn't want to go through that process. Having seen the same pattern (availability of interesting properties and shortage of people capable and willing to manage them) repeat over and over, the couple decided to propose to their friends that they would manage the property. The house was in a tourist friendly location and overlooked the ocean – they figured demand for renting it would not be a problem. Having no commitments back in Switzerland, the couple focused on fixing up the house – they borne the cost to refurnish it and proposed they would get their money back from the rent revenue and, if it didn't work, their friends would have gotten free furniture and upkeep work done on the property.

After a few weeks fixing up the house, they listed it on two online short term rental platforms and, within a day, the whole coming month had been booked, which was enough to recover all the investment plus a profit. Having proved that their initial insight was correct and that they could make a profit on the idea, the couple started thinking how this could be transformed into a business. The same friends who had accepted to test the idea decided to let Markus manage a second property, and a couple more properties were obtained through personal connections in the area. These initial properties were successfully managed along the same lines as Markus had done in the past with the house he owned back in Switzerland.

The idea of growing a business out of this experience was weighted against the alternative of returning to Switzerland to get jobs and, in September 2015, the couple decided to seize the situation they found themselves in: starting a new life from scratch and working together on a project that could later give them an alternative lifestyle to the usual 9-to-5 job. The friend who owned the first property they managed liked their service and helped connect Markus to a local venture capitalist who gave advice on how to set up a company in the US and referred Markus to a large Silicon Valley law firm that could support him in the process. The law firm, as usual in the area, provided services free of charge, in hopes that the venture would become a large profitable account in the future, and supported establishing GoNitely as a Delaware C-corp. Using connections with friends, some basic elements of the company were formed (logo, website, etc.) and the couple went back to Switzerland to sort out their visa and immigration status, which was a cumbersome endeavor due to technicalities of US immigration laws.

Having solved the basic administrative issues and moved back to Pacifica, Markus and Judith continued to network in search for more clients. Once successful and starting to manage more houses for a couple of months, they concluded that property management in large scale was very inefficient because there was no technical solution to simple tasks such as listing the property in different online platforms (multi-list) – which required spending time in low value added administrative work, coordinating the property's calendar (to avoid double booking from different platforms) and handling payment issues. Other than the lack of scalability in the tasks, the entrepreneurs stumbled upon another limitation to the way they were operating: as soon as the company started managing a property in Palo Alto, located around 40 minutes' driving distance from the couple's home, it became clear that the distance made their job extremely impractical as it was often needed to provide on-site assistance to guests.

> *"we underestimated the amount of manual work… and it's not just a software that's needed… you have to be there… things break, people have all sorts of questions… guests may need you there for different reasons"*

The idea of putting unused property to better use still seemed like a great opportunity but the couple had no interest in developing only a local property management company in Pacifica – although Markus believed this could have been reasonably profitable. There was a desire to develop something big, and the intention to develop a business that would allow them to move back to Switzerland at some point – to enjoy advantages in health care and education compared to the US – and continue managing the company from there. Accordingly, the venture shifted its attention to coming up with a way to maintain the exact same business concept, but making its operations scalable so that it could grow. The conclusion was that scalability would be possible by: 1) developing an easy way to multi-list, manage calendars, handle payments and communicate with guests and 2) finding people that lived close to customer's properties and that were willing to manage them. That shaped what GoNitely consisted of at the time of interview: the provider of a platform solution that allowed almost anyone to manage a property.

Markus reached out to a friend in the area who had experience with technology development helped assemble a team of contract developers to develop a the platform. The venture was able to self-fund development with resources from the sale of Markus' previous business in Switzerland, but as the technical solution started being developed, he realized the complexity of the project was much higher than anticipated. The complexity arose from the requirement to multi-list in different platforms, setting up a system to execute the background financial operations, integrating calendar information from multiple sources and including a real-time messaging solution into the platform. In the coming months, the company focused on solving the technical challenges, it had launched its web application two months prior to the interview and was within three weeks' time of launching a fully functional mobile application to the major smartphone platforms. The software development team was formed by six people, five of them being outsourced through freelancing platforms such as UpWork and located in Asia and South America. This posed some managerial challenges such as following up details of the development, coordinating activities across different local holidays and executing tasks that needed several iterations between development and checking. Due to these, the company had planned to internalize more of its software development capabilities and was in the process of doing so.

During the development of the software the company continued to acquire new customers and it grew to manage a total of 20 houses in California and Switzerland, an amount judged to be the maximum it could handle without having a final software solution to the operational challenges of managing a large amount of properties. At the time of the interview, the focus was on stabilizing the software solution about to be launched, identifying property managers (the typical manager was expected to be a stay-at-home parent or early retiree living nearby the customer's property), increasing the operations team to onboard customers and managers (between customer signup and multi-listing) and boosting marketing efforts to acquire more customers and build brand recognition. Nationwide launch in the US depended on partnering with local organizations that could support the initial setup of the properties (checking that everything works, taking pictures and coming up with a text description for the property) for a fee. Partnerships were about to be established and all US territory would soon be covered by the platform.

Competition in the US consisted of other technology driven rental management companies like Vacasa, Evolve and Turnkey Vacation Rentals, but all these companies employed full-time staff in central offices to manage their properties – a fundamental difference from GoNitely's strategy, and one that limited their geographical reach to properties within a certain distance from their offices. The company had also become aware that Airbnb, the most popular short term rental platform at the time, was also developing a co-hosting solution, which allowed owners to delegate their property's management to any other person, a feature expected to increase the platform's penetration and a similar solution to the one being built by GoNitely. Airbnb's co-hosting solution was launched in Novermber 2016, which initially caused Markus to be concerned, but soon he realized that because the properties managed by GoNitely were being booked not only in Airbnb, but also in all other popular short term rental platforms (platform agnostic co-hosting), the occupancy reached by the properties they managed was much higher than if a house was single-listed in Airbnb, a substantial advantage from the home owner's perspective.

Development of the business in Switzerland started when Markus decided to list his own house in GoNitely's platform and arranged for a local acquaintance of his to manage it. Markus reported that the past year had been the most profitable in rentals ever since he had inherited the house. With the successful test on his own property, he decided to seek support from a friend in Switzerland who had been a successful entrepreneur. This friend helped establish a presence for GoNitely in Switzerland so that it could operate. After these initial developments, Markus hired a local operations manager to run the business in the country – the job initially consisted of clearing out the legal aspects of the business model, which was successfully done, and coming up with strategies to sing up customers. New customers joined the platform and Markus reported a very satisfactory development of the market, with eight properties being managed and ongoing activities to reach 20 properties in early 2018.

Other than US and Switzerland, the company had also investigated the possibility to expand to New Zealand. The investigation to enter New Zealand started along with the acquisition of a new customer in California. This customer had been referred by a friend of Markus and, after understanding what GoNitely did, the customer connected Markus with his daughter, who lived in New Zealand. Her husband had worked in the hotel business in that country for many years and wanted to leave it, but was interested in leveraging his knowledge and network in the hospitality industry. Markus agreed to discuss a possible partnership – New Zealand appealed to GoNitely for being a famous tourist destination that also had several second home owners from abroad that could not manage these properties on-site. To explore the possibility, Markus hired a local market research on a contract basis, which lasted for approximately six months.

The project in New Zealand had just been finished at the time of the interview and the outcome of the investigation caused Markus to reassess the decision to move into that market. The first challenge identified was the presence of a very dominant local player in the short term rental platform space, Bachcare, who dominated an estimated 80% market share, but operated in the same way as the competition in the US. Despite the business model disadvantage, the local player enjoyed very high brand recognition and was favored over other platforms for being a local company. The second issue identified in the market would be gaining the trust of local customers since New Zealand is a considerably conservative country as far as consumer behavior and a novelty solution from an up and coming Silicon Valley startup could have significant difficulty in getting customers' trust. Lastly, being a country with strong social welfare programs and socialist mentality, the freelance revenue-share model used with GoNitely's properties' managers, which did not entitle the person to any social benefits of full-time employment, sat in a grey area as far local labor laws. Having discovered all these aspects, the company decided to stop the market entry efforts, at least temporarily, since the managerial attention and financial investment needed to overcome the challenges were too great relative to the venture's size.

GoNitely also had developed relationships – through Markus' and Judith's social connections – with prospect customers in Greece, Italy, Portugal and Spain. The Spanish market was especially attractive for being a popular vacation destination in Europe and a place known for having second homes from people all over Europe who would benefit from the company's platform. Another unsolicited request to use GoNitely's platform came through a friend who was a missionary in the Philippines and was on a home leave in California. This friend knew that it was very common in the Philippines for people to keep their houses once they moved elsewhere and even abroad, and there would certainly be interest in using the platform to provide them with additional income.

> *"People were asking for us in some markets and we looked into it. Why would we force our platform somewhere else?"*

With possibilities at hand, the company was planning to expand gradually due to the managerial attention needed to sort out the local regulations on tax and freelance labor legislation.

Regarding short term property renting laws, the difference could be as granular as from one city to another, within the same country – recent legislation had been passed in major cities in Europe and US introducing restrictions on short term rentals and more cities were to follow. This did not necessarily affect GoNitely because its business model aimed at underutilized property, and the company had also decided to stay clear of major cities to avoid contributing to rising housing prices in these areas, but it illustrated the relevance of regulatory issues related to the short term rental industry.

Due to those complexities related to the business model, and pending venture capital funding for the company, Markus was careful in predicting exactly the expansion rate and to which countries exactly, but his intention was to enter, during 2018, at least one of the southern European counties where he had contacts. Markus felt that expanding through social connections gave him an accurate feel of the local market. Even though he acknowledged that relying strongly on social ties could be related to the venture's scale at the time, he estimated a very low probability of relying on formal market research to identify potential markets since he was able to receive quality insights from his existing network of contacts and unsolicited requests resulting from word-of-mouth spread of the company's concept. Nevertheless, the entrepreneur saw value in executing a detailed on-site research to attest that the markets were indeed feasible to develop – to do that, the company had developed an expansion requirement list, which contained a set of 25 questions about the local market that needed to be clarified to understand the feasibility and potential rewards in entering a new country. This list encompassed items such as legal aspects regarding property ownership, short term rental regulation, real estate market, existence and performance of competitors, labor laws, unemployment rates and others.

When discussing the communication with institutions, Markus reported that the novelty element of GoNitely's business model seemed to make it difficult for such organizations to fully understand it, or at least seemed to make them unable to support the company in more relevant ways. The company had interacted with many institutions during its development, especially organizations from Swiss origin, such as swissnex (US) and the Switzerland Global Enterprise (S-GE) through its Swiss Business Hub office in San Francisco. S-GE was a non-profit association that connected experts, companies and private and public organizations globally, promoting foreign trade. The association presented itself as *"the first point of contact in Switzerland for all questions* *relating to internationalization"* (S-GE, 2017) and was represented by local teams called Swiss Business Hubs in 27 countries).

Although the venture was able to build good relationships with these institutions, these ties seemed to provide very limited practical benefits to the company. The expectation was that these institutions would be efficient in clarifying the questions contained in the expansion requirement list developed by the venture, but this was not the case.

> *"It felt like dealing with a very large corporation. It's understandable since they're part of the government to some degree"*

Also, despite being partially subsidized by the Swiss government, another downside reported was the high cost of the services, some of which had unclear expected outcomes – an example given was a contact list of Silicon Valley investors that was offered to GoNitely by one of the Swiss institutions based in the US, and it would have cost multiple thousands of dollars. Those institutions were very unspecific on what was the information and resources they offered and what could be their role in supporting opportunities that were in different stages – their inability to gauge, or fully understand, where the venture was in its development and what support it needed seemed to be a crucial challenge to overcome.

The role of institutions in the Silicon Valley startup environment was reported to be overshadowed by the existence of both a dense network of entrepreneurs and an openness and incentive to networking behavior. Several free networking events existed, the availability of valuable information through connections was very high and experienced successful entrepreneurs were willing to offer support. The result was that trying to use formal channels with institutions to obtain information and resources was much slower and produced less valuable outcomes. GoNitely had been introduced to a large number of venture capital firms in the area through personal introductions and was in discussions with some of the biggest VCs in the area – none of those relationships had been facilitated by formal institutions. Other than traditional institutions, the region had angel groups, and GoNitely had interacted with Band of Angels, the oldest angel investment group in Silicon Valley. These groups provided opportunities for funding and expert advice to the ventures that applied to and went through their assessment program, and worked within a structure that was seen as more effective than formal entrepreneurship support organizations. Still, due to the sheer amount of this type of non-formal support organizations, the quality of the information and resources they provided was very heterogeneous and depended on a host of different factors.

As for outside the US, GoNitely sought institutional support to investigate market entry challenges in southern Europe. A couple of back of forth communications were exchanged with S-GE and another unnamed Swiss agency, but the services offered were either expensive or the information that could be shared was not valuable. Realizing that direct collaboration was not working, S-GE recommended GoNitely to work with its private partner organizations, but Markus soon realized these services were also expensive and not customized enough to the venture's needs.

"Their service felt no different than hiring consultants in the open market."

Markus observed that his personal traits favored the strategy of networking directly with people, either known friends, or their friends, and asking for information and advice. He also found this strategy to be significantly more efficient than participating in startup focused networking events because some of those had unclear value propositions and disproportional investment of time. The purpose-driven direct networking approach helped him develop his business and when he considered the possibility of seeking support from a business incubator, his company had past the point where an incubation process would make sense. He noted that institutional partners could have played a bigger role had he not been outspoken and able to source valuable contacts himself, but the development of the company would probably have been slower as well.

In the near future, the company's focus would be on deploying partnerships it had been planning – the buildup of a network of property managers was seen as a major asset being built by GoNitely; this networked community linked by the online platform would enable a host of possible services to different types of clients, which the company was planning to explore.

4.4 Case Onix

Kevin Flannigan is a 27-year-old corporate entrepreneur. Born in Taiwan and raised in Hong Kong, he moved to Los Angeles (US) when he was 14 years old for his high school education, after which he moved to San Diego to complete an undergraduate Computer Science education in the Jacobs School of Engineering (University of California San Diego). Kevin moved back to Los Angeles after graduation, where he started up his own business and developed it for approximately one year. Motivated by personal issues, he decided to sell his venture for a competitor and move back to Hong Kong. Once he returned to Asia, Kevin worked back and forth between Hong Kong and mainland China to oversee the operations of the two different companies under his family's business group (Onix) and, at the time of the interview, Kevin had just finished his MBA at the Hong Kong University of Science and Technology (HKST) Business School.

The venture he founded in Los Angeles, Careerbahns, developed an online job hunting platform that targeted fresh graduate students and provided them a tool to find jobs and opportunities that were best fit for their personal preferences. The platform used artificial intelligence driven algorithms to match students' profiles with opportunities, and grew a sixty thousand user base in four months of operations. At that time, there were a few similar companies developing alternative solutions to the same problem, and some of them approached Kevin with offers to acquire his business. Since Kevin had decided to move back to Hong Kong for personal reasons, he accepted the deal and left the US – after that, the platform was shut down and, later, Kevin learned that LinkedIn also bought and shut the company who had acquired his venture.

Onix Bodycare was founded by Kevin's father who was born and raised in Hong Kong. The company started operating, more than 40 years ago, as a trading company that sourced Levi Strauss & Co. products from distributors in US and sold them in Dubai and surrounding Middle Eastern countries. The idea to setup the business downed on him when in 1975, after a few years working in Taiwan, his job base was transferred to Dubai and required him to travel frequently around the Middle East region. He noticed that Levi's branded jeans was extremely appreciated in the region, but consumers had a hard time finding its products since they were not officially distributed in most of the region's countries and availability was very limited. Soon after he recognized such unmet demand, he travelled to the US and, after a long series of cold calls and negotiations, was able to get some of the brand's distributors to agree to sell him the merchandize that was not easily sold to the stores, which he would then export to the Middle East. With this agreement settled, he came back to Dubai and again used cold calling to contact diversified distributors in the area and get them to distribute the products, which was easier due to the brand's appeal. He was able to execute his idea and, once his business became successful, Levi's and its US distributors noticed how profitable the opportunity in the Middle East was and stopped supplying him with their products. This led Kevin's father to quit his job, move back to Taiwan in 1978 and startup similar operations, but now with Japanese clothing brands, such as COMME des GARÇONS, that were growing in popularity outside Japan but had limited availability in Taiwan. The entrepreneur used his personal connections to find sales channels in Taiwan, as well as the distributors who were his suppliers in Japan.

The company grew gradually and moved operations to Hong Kong in 1987, where it also started selling Japanese brands, and soon its own branded products – which were sourced from other manufactures. As the company developed, Kevin's father reasoned that an interesting way to expand the business would be to start importing innovative laundry products that would be complementary to the clothing product category – one such product were laundry balls, which substituted for traditional detergents, and became quite popular in the company's markets at the time (Taiwan and Hong Kong). Soon the company expanded to other countries in Asia by leveraging the entrepreneur's personal connections to find distribution channels to the products he had access to.

The opportunity to acquire a manufacturing plant of laundry detergents and toiletry products came in 1997 through a former university classmate. This classmate had a friend who was trying to sell the factory located in mainland China and introduced him to Kevin's father, who was looking for a way to further expand Onix. After the connection was made and negotiations were done, Kevin's father reasoned that the acquisition of the factory and the timing for it were both favorable to his business. After acquiring the factory, the company started operating as an original design manufacturer (ODM) and original equipment manufacturer (OEM) and focused mainly on the manufacturing and distribution of laundry and toiletry products, scaling down its trading activities. The purchase of the factory provided immediate access to several markets to which its outputs were already being supplied, and the company soon developed those markets further, especially Europe.

At the time of the interview, the company produced private label products to well-known global consumer goods brands and had its own brand as well (Alice and Law). Onix had ongoing businesses in all major markets around the world, with the exception of Latin America and Africa, and approximately 65% of the company's revenue came from markets outside China. There were many different customers and any company that wished to have custom laundry and body care products could be served by Onix (*e.g.* large hotel brands that have their own custom toiletry in their rooms). The company had built a strong image of supplying quality products, and was therefore easily able to compete in markets where quality is a stronger requirement than price, which is true for laundry and toiletry products in most markets.

The company bought around 70% of its raw material directly from local producers in China, a strategy to reduce cost and simplify operations, and the remaining material through intermediaries based in China, who pooled the import of raw material from US and Europe into the country. Most of these supply relationships were built through formal business channel and systematic search, and did not leverage previous relationships. Onix's competitors were a handful of companies in China who had the same type of operation, as well as lower quality competitors that produced in Vietnam, Indonesia and Africa. As an ODM, the company also tried to innovate and held patents on products like bath confetti, bath fizzer and laundry ball in China. These products could potentially be threatened by similar innovations from other large consumer good companies that were able develop comparable products.

In the early development of the firm, a relationship with a large prospect customer could have strong influence in the company's activities, but this flexibility decreased as the business grew. Onix performed only minor adaptations to its products to serve certain markets, with one example being the UK where, after shipping a batch of products for the first time, distributors reported that consumers were having problems because it did not work well with hard water (*i.e.* high mineral content water), which is used in the UK for laundry and required a reformulation of the product. Less relevant adaptions related to packaging, branding standards, labelling and shipping arrangements.

Since the demand for toiletry and laundry products was ubiquitous, the company needed to be able to choose in which countries to expand. Part of the long term planning activities involved figuring out macro-level trends, which the company did by discussing with related industries such as textile companies and trading companies that worked with toiletry products to anticipate trends on how consumers take care of their clothing and personal hygiene in different parts of the world – this defined the type of capabilities and connections the company sought to develop in the long term in each market, whether an expansion or a new entry. As for the short term decisions, although the company's management analyzed relevant market data such as growth rates in different markets, usually the decision to enter or expand into a certain market was based on the resources the company had to execute the strategy, with especial attention to existence of trustworthy and well connected partners who could introduce the company to distribution channels.

Kevin illustrates this reasoning in the company's decision making by using Africa as an example; while the company was aware of the high growth in the region and sizeable potential opportunity for its products, the current decision not to enter the market was based on the assessment that, due to lacking relevant local connections and the know-how of the business practices and local consumer behavior, the return on investment of entering the market would be low compared to entering a declining market where the company had strong ties, such as family acquaintances that had ties with relevant local businesses. A contrasting example is the US: in recent past the company hired a family relative who was working in a key position at a large US broad line distributor. This connection was helpful in establishing a relationship with this distributor and connecting Onix with a handful of large US brands who were willing to try the company's manufacturing capabilities. The trials were successful and led to growing the presence of the company's products in the US market, where it had only a very small relevance up to that point – the existence of the connection overshadowed the fact that US is a developed, slower growth and highly competitive market.

Comparing Onix's approach with his strategy as an entrepreneur, Kevin recalled that, in developing Careerbahns, he mainly sought to discuss the demand and his idea with as many relevant people as possible to make sure the venture would deploy a valuable solution to its main customers – recruiters and students. He was simultaneously creating prototypes of the solution and adapting them according to the new inputs he gathered and several hypothesis testing iterations. He recalled that the insight for his startup to tackle the opportunity in recruiting came from his own personal experience; at the time, he found extremely difficult to find a career opportunity that appealed to him. He also noticed that many friends were having the same problem, and many of those who started working were disappointed with the job, but at the same felt they couldn't quit since they were afraid of the "fast switcher" label from recruiters, which could make it difficult to be hired elsewhere.

As far as external factors, Onix's business is usually affected by trade agreements between countries and regions relative to China and the tariffs imposed to its products, which means the company has a relevant stake in monitoring the political outlook in its main foreign markets. Additional to that, as noted in its planning activities, the company is affected by consumer behavior relative to its products, such as a preference for higher quality products once emerging countries reach a certain the development level, leading the company to introduce new brands in these markets. At the time of interview, Onix had not entered a completely new market for a while and, aside the fact that the company's penetration was already quite extensive, this was also motivated by the push from Chinese government to increase internal consumption, which meant that the most interesting opportunities for the company were in expanding its business in various Chinese provinces due the subsidies and lower selling expenses.

The main actors in Onix's network include a handful of large customers that are vital for the business, the family's personal relationships and ties with trade associations in Hong Kong, mainland China, US and Europe. These trade associations, such as the Hong Kong General Chamber of Commerce, are most useful to Onix when they organize tours to foreign markets and connect the company with local authorities and local businesses that are relevant to understand the local context and the main characteristics of local customer behavior. The second step in these tours is a discussion with local authorities to clarify the specifics of the company's intentions so they can define which connections would be useful in building or expanding the visitors' businesses in the region. Once those specific connections are made, Onix and other companies are more less left to their own devices to learn about opportunities with local speaking partners and to discuss possible partnerships.

These trade associations also organize trade show events, but the effectiveness of those had severely declined in recent times due to the widespread use of online platforms such as Alibaba. Another service typically provided by these associations is market analysis and market trend prediction studies, but the perceived value of this was very small compared to the valuable connections that can be made and social capital that can be leveraged. As a consequence of that, ties with associations that focus on providing market analysis and systematic research information were perceived as being less valuable for Onix.

As far as mainland China is concerned, some of the cities' or regions' associations have the distinct characteristics of being very general, comprising all sorts of businesses who might possibly collaborate with each other for local development. The experience from Onix of doing business in mainland China was very different depending on the region, with strong differences between northern and southern China, as well as smaller differences across the provinces. These differences related to regulatory aspects, the way that relationship trust is built (*e.g.* heavy drinking in northern provinces), how transactions are structured, how newcomers are integrated (or not) into the existing business ecosystem as well as consumer demographics and behavior.

Kevin reported the example of a tour to the Guangxi province in southern China, organized by a trade association in Hong Kong and guided by Guangxi's local authorities. During this tour, Onix had two objectives: 1) learn about local consumer behavior as far as spending on house products and 2) explore the logistics structure and investigate whether it was possible to have access to certain areas of Vietnam and other nearby countries through that province to improve the company's position and operations in them. Onix was put in contact with local manufacturers that were distributing their goods to the same regions the company wanted, and had the opportunity to visit factories to understand how similar the operations were compared to their own and check the feasibility of their plans and if adaptations were need. In addition, the company visited supermarkets to understand local product assortment, product categories, brands that were present, share of shelf space and others.

The effectivity of the trade association was reported as very heterogeneous, with a few of those providing strong social capital for the companies joining their tours and making use of their services, but with most of them simply providing contact information and leaving up entirely to the companies to develop relationships on their own, which sometimes was met with low level of interest by local authorities and businesses, making the process dependent on networking skills and quickly figuring out local cultural idiosyncrasies. Some trade associations in Hong Kong were described as very exclusive and accessible only to business that have considerable scale, investment clout and a consequent social status of the business owners in the Hong Kong society. Those elite-only associations were usually the ones that deliver higher impact as far as connecting companies with key stakeholders in foreign markets and positioning them in a favorable way to discuss how to develop their business in the region of interest – this higher success rate is due also the connections that these associations have with key personnel in governmental bodies and agencies. Despite having access to these exclusive trade associations (one of them being the Hong Kong General Chamber of Commerce), the heterogeneity in the outcomes when using these ties made Onix rely a lot more on the personal connections that the family had developed over the years. Trade associations were used only when it was necessary to be introduced to stakeholders in places where no family ties existed.

Onix also has ties with US trade associations and had several experiences visiting trade shows and going on tours in different states, but the results had been below expectation. The company reports that those events were limited as they provided standard information that was available through other means.

"most of the advice we got was straight out of a cookie cutter…"

The company also had a hard time communicating with those associations, which made them unable to fully understand the support needs – partly because Onix was unwilling to share sensitive information with organizations that dealt with relationships in a transactional basis – a typical trait in US business environment. This made those associations less able to connect the company with relevant local partners.

While there is a considerable overlap between Kevin's and his family's personal ties and the relationships that are relevant to Onix, most of the relationships are industry specific since there were developed along the company's history. Therefore, in the event of a major industry diversification by Onix, it would be needed to start developing new relevant relationships to be successful.

5 DATA ANALYSIS

In this section the analysis and discussion of each case in the study is presented. The presentation is done based on the content categories. After iterating between field data and the relevant theoretical support, is was decided that the analysis would be benefited from separating the analysis of each international opportunity, "opportunity event" and "opportunity set" identified in the data collected. Below is a list of the units of analysis in each case:

- PB&B – one unit analyzed:
    - Unit 1 (Opportunity): obtaining financing and exporting products to China;
- TWIST – three units analyzed:
    - Unit 1 (Opportunity event): selling services to CERN (Switzerland), not materialized;
    - Unit 2 (Opportunity): selling services to Telefonica and SThAR (Spain, Switzerland);
    - Unit 3 (Opportunity event): further internationalization plans (Canada), not materialized;
- GoNitely – three units analyzed:
    - Unit 1 (Opportunity): manage underutilized properties in foreign market (US);
    - Unit 2 (Opportunity): internationalization "back" to home country (Switzerland);
    - Unit 3 (Opportunity event): further internationalization investigation and future plans (New Zealand, Greece, Portugal, Spain, Italy), not materialized;
- Onix – three units analyzed:
    - Unit 1 (Opportunity): buy and sell Levi's jeans (Dubai and Middle East);
    - Unit 2 (Opportunity): buy and sell Japanese brand apparel (Taiwan and Honk Kong);
    - Unit 3 (Opportunity set): export toiletry and laundry products to Asian and western markets (some markets accessed by acquiring the factory);

Each case and each opportunity event was analyzed in light of the theoretical support from each content category and the most appropriate element of analysis is chosen as the one best suited to the social phenomenon observed. In some units of analysis cross-border exchange was not materialized, such as unit 1 of the TWIST case, but they were included in the analysis as it was possible to observe many of the relevant behavioral aspects of international entrepreneurship that are central to the study's objective in understanding the role of institutional ties.

In its totality, the analysis seeks to answer the main and secondary research questions for each of the cases. The relevant aspects of each event are highlighted and a comparative angle is developed when suitable. Table 8 shows the summary of the aspects identified in each category for each of the opportunity events analyzed in each case.

Table 8 - Summary of elements identified in each unit of analysis

	Content category				
Unit of analysis	**Market choice**	**International opportunity type**	**Formation process**	**Influencing factors**	**Tie Strength**
PB&B Unit 1	Networks	Subjective venture opportunity, Tie-based	Creation	Alertness, Social Capital, External enablers	Low social layering, high trust and commitment
TWIST Unit 1	Networks	Objective market opportunity, Tie-based	Recognition	Social capital, External enablers	High social layering, high trust and commitment
TWIST Unit 2	Networks	Objective market opportunity, Tie-based	Discovery	Social capital, External enablers	High and low social layering, high/medium trust and commitment
TWIST Unit 3	Market size, Psychic distance, Networks	Not mature enough for analysis			
GoNitely Unit 1	Networks	Objective venture opportunity, Tie-based	Recognition	Alertness External enablers	High social layering, high/medium trust and commitment
GoNitely Unit 2	Networks	Objective market opportunity, Tie-based	Discovery	Social capital External enablers	Same as above
GoNitely Unit 3	Market size, Psychic distance, Networks	Objective market opportunity, Tie-based	Discovery	Social capital External enablers	High and low social layering, high trust and commitment
Onix Unit 1	Networks	Objective venture opportunity, Non-tie-based	Recognition	Alertness, External enablers	Low social layering, low trust and commitment
Onix Unit 2	Psychic distance, Networks	Objective venture opportunity, Non-tie-based	Recognition	Alertness, External enablers, Systematic search	High social layering, medium trust and commitment

Onix Unit 3	Psychic distance, Networks	Objective market opportunity, Tie-based	Discovery	External enablers, Social capital	High and low social layering, high and low trust and commitment

5.1 Foreign market choice

The choice of market is part of the formation process of an international opportunity, and the study tried to understand if institutional ties influenced any of the main aspects of foreign market choice or if they could change which aspect was more relevant. Onix and GoNitely were cases in which the international opportunity was formed already in a foreign environment by entrepreneurs, so the aspects informing this choice were of interest. PB&B and TWIST were both based on the entrepreneur's home country, which made the analysis more straightforward.

For PB&B, the foreign market choice followed an interesting path. Anthony had personal connections with France, Canada and Brazil, but his initial plans for internationalization were strictly based on analysis of the aesthetics market size. His analysis pointed to US, Brazil and China. While both US and Brazil had a much smaller psychic distance to him than China, the regulatory constraints in the US for medical products turned Brazil into the first international market which the company would seek to explore. This was also compatible with the venture's initial efforts in getting EU regulatory approval for the products, which would allow to export to Brazil, whose regulatory framework in this industry draws mostly from Europe. Due to taxes, the mode of entry sought would be licensing with a local manufacturing partner. Eventually, a large investment from China, that came about through the network that PB&B had established during fund raising roadshows with groups of surgeons across Europe, changed the order of priority for foreign market entry. Many roadshows had been enabled by institutions such as Commission for Technology and Innovation (CTI), so this institutional tie had an indirect role in these events since it helped expand the venture's network until it connected to its Chinese partner. The relationships from the investor facilitated understanding and overcoming regulatory barriers – compensating for the lack of Chinese market institutional knowledge.

In the TWIST case, the most obvious first international opportunity for the company did not materialize due to an institutional barrier: the specifics of agreements between Brazilian and Swiss governments spoiled the opportunity for TWIST to have the CERN as its first-ever customer. The market choice for this opportunity would have been a clear example of international opportunity risen out of an idiosyncratic existing set of relationships. As for its materialized international opportunity with SThAR and Telefonica Spain, it is also clear to observe the pivotal role of the venture's idiosyncratic network composition. Specifically, UFRJ's existing ties with swissnex and TWIST's close tie with UFRJ's incubator enabled the company to form a partnership with SThAR, a company with complementary capabilities and presence in the European market. Later, as reported in the venture's planning process for further internationalization, the foreign market choice was based on both psychic distance and networks: Canada was considered because TWIST had been contacted by the CCBC through the incubator, and because the language in the market is specifically relevant for TWIST. The caveat here is that the level of competition was factored in by the consultants and resulted in eliminating the US from the possibilities, which had been listed by the venture based on market size.

GoNitely and its founders travelled around the world and believed their business idea could work in many different places. What finally enabled them to start the business was their personal connection with people living near Silicon Valley. Their friends provided them both with interesting properties and with connections that helped them start up a business and relocate to US. The investigation to enter New Zealand was also the outcome of their idiosyncratic ties, but as the company already existed and was engaged in other activities, the market was carefully assessed by looking at competitors, legal aspects and other local market dynamics that helped vet the opportunity, which was decided not to be further pursued, at least temporarily. Further market entry choice was also guided by the founder's network of relationships, but were planned to be vetted in the same way as the New Zealand market had been.

The role of choice is only ambiguous in the origin of Onix. Being in a foreign environment, the entrepreneur was able to explore a local opportunity identified due his job relocation, which could be interpreted as result of his own network. In moving operations to Taiwan, it is possible to identify the role of reduced psychic distance and idiosyncratic networks as the entrepreneur sought to replicate the business model upon which he had stumbled on, but now in more familiar environment where he could also leverage his personal connections. In the later internationalization efforts of the company, the role of networks and institutional ties are more relevant for the company's choices, as it is also psychic distance, with expansion progressing to markets where existing relationships reduced the perception of risk.

Institutional ties had an indirect influence in foreign market choice for PB&B by enabling connections to an investor and partner in the Chinese market. Institutional ties directly enabled international opportunities for TWIST, but the first effort was jeopardized by the lack of commitment from the Brazilian government with the CERN initiative – here, the institutional arrangements were both enablers and barriers. GoNitely was a counter example since institutional ties seemed to have played no relevant role in its foreign market choice. Some exclusive institutional ties with elite trade association in Hong Kong and mainland China provided unique leverage for Onix in different foreign markets, supporting its international expansion.

Table 9 - Summary of foreign market choice elements

	Elements of analysis		
Unit of analysis	**Market size**	**Psychic distance**	**Networks**
PB&B Unit 1	Guiding principle to narrow down the possibilities.	Used to prioritize among largest markets and make strategic decisions	Deciding factor: the availability of specific tie led to China
TWIST Unit 1	Not relevant.	Not relevant.	Institutional tie between UFRJ and CERN created the opportunity.
TWIST Unit 2	Not relevant.	Relevant to business partners, but not to TWIST	Deciding factor: COPPE/UFRJ's incubator and swissnex ties
TWIST Unit 3	Main reason to consider US market.	Main reason to consider Switzerland and Canada markets.	Main reason to consider Canada and UK markets.
GoNitely Unit 1	Not relevant	Not relevant	Deciding factor: personal networks provided resources needed to develop the opportunity
GoNitely Unit 2	Used as vetting criteria	Used as vetting criteria	Guiding mechanism: the venture investigated opportunities brought to them by existing ties
GoNitely Unit 3	Used as vetting criteria	Used as vetting criteria	Guiding mechanism: the venture investigated opportunities brought to them by existing ties
Onix Unit 1	Not relevant.	Not relevant.	Corporate job led to environment where opportunity could be recognized.

Onix Unit 2	Not relevant.	Main reason to move to Taiwan and then Hong Kong.	Used to develop the business, but not guide market choice.
Onix Unit 3	Important, but not a definitive criteria.	Important, but not a definitive criteria. Barrier to further opportunity formation in western markets.	Deciding factor: personal networks reduced perceived risk and increase perceived economic potential.

5.2 International opportunity type

The data collected in the study illustrated the multiple perspectives from which an entrepreneurial opportunity could be analyzed. With three of the cases being startups, those were expected to show a higher level of innovation and more complex resource combination patterns, which could also mean more extensive overlap between the entrepreneurial process of venture emergence and the international opportunity formation process. The objective and subjective nature of the opportunities was expected to have close connection with the maturity level of the entrepreneur's initial insight on which resources needed to be organized to exploit the opportunity in question. The a priori role of institutional ties was unclear.

Since PB&B developed its knowledge and technological concept internally and assumed the existence of global market demand for the products, it could be expected that later international opportunities would be objective market arbitrage opportunities. Still, when analyzing the account of how the company shifted its initial product focus, such characterization is not possible. The initial pivot in the company's development came once the founders sought feedback from partners, private and public investors who critically evaluated their initial breast augmentation concept, which helped them realize that this initial application was too risky and would take too long to market. The second turn of events, the creation of a simpler product to explore a unique partnership in China, motivated by a host country investor, also shaped the venture's activities and, while the initial products are still in development, a new opportunity was created by interacting with partners from the market.

Also, since PB&B cannot internalize important activities, the partnerships needed have led the company to integrate activities across border by having partner testing products in France and production activities in the United States. Therefore, the limitations of a new venture forced the company to be more innovative and coordinate resources across borders in order to create the means to deliver on the market demand, without using organizational hierarchy. As a whole, the opportunity formed by PB&B is best characterized by the literature as being a subjective venture opportunity. Finally, since the opportunity arose from professional networking efforts of the venture the opportunity is characterized as tie-based.

As for TWIST, its initial opportunity to sell services to CERN, which never materialized, would have been an objective market opportunity since its execution depended basically on administrative and legal setups, not requiring innovative business development or negotiations between stakeholders to shape the opportunity – it had been formed previously as an arrangement between institutions. This initial opportunity would have been tie-based since the existing relationships would pretty much guaranteed the economic exchange. Its later successful partnership with SThAR and Telefonica is also better understood as an objective market opportunity since the company learned about the opportunity through its relationships and, despite not simply providing its standard SaaS solution, was able to use technological basis and capabilities, signaling that the opportunity was a match of existing home market means with a foreign market demand. This opportunity was also tie-based since the institutional tie with UFRJ's incubator initiated a chain of events that led to the opportunity, and the tie with SThAR secured that the exchange could happen.

GoNitely was established in the US as the outcome of the formation of an international (from the point of view of the entrepreneurs) opportunity, and it contracted the development of its platform to developers spread around the globe. The creation of the company and its internationalization are inseparable. At the same time, the market patterns that formed the economics of the business had been observed by the entrepreneurs in many different places and is strongly described as characteristic of the environment, with little role for enactment and change of perceptions by the entrepreneur – it is therefore best understood as an objective venture opportunity. Once the venture was created and established as a US entity, the opportunity in Switzerland was an opportunity to apply the same business model and resources developed in the US in another country, making this an objective market opportunity. The entrepreneurs used existing ties to obtain information about all opportunities developed thus far.

The first international opportunity exploited by Onix in the Middle East is an example of venture market opportunity. The market demand was closely observed by the entrepreneur, who was able coordinate resources and connect the existing supply from the US, generating arbitrage profits. Previous relationships had no identifiable role in this opportunity, which can be categorized as non-tie-based. The same planned rationale followed the company when it moved to Taiwan and in its further development but, differently, the new business relied on existing relationships to be developed and exploited, although not to obtain information about the opportunity. Once the company acquired manufacturing capabilities in China, supply had become the known factor, and Onix then sought to continuously find unmet demands which it could meet with only minor adjustments to its products and therefore expand its business – objective market opportunities. Existing relationships were a major factor in receiving privileged information and deciding to develop new markets, so the opportunities were understood as tie-based.

The same indirect role that PB&B's institutional ties had on its foreign market choice was also observed on its opportunity type since the content of the opportunity changed as the venture interacted with a new stakeholder. The first international opportunity for TWIST was an outcome of an institutional relationship, but it is not clear if institutional relationships can only give rise to objective opportunities, or they can be shaped by new stakeholders. On the other hand, certainly the opportunities that arise out of relationships between institutions will be considered tie-based. Despite its ties to swissnex and S-GE, those had no influence on the type of opportunity formed by GoNitely. Institutional ties were only relevant in later stages of Onix internationalization, but had not identifiable influence on the type of opportunity – this seemed to be defined by other factors.

Table 10 - Summary of international opportunity type elements

	Elements of analysis		
Unit of analysis	**Objective / Subjective**	**Venture / Market**	**Tie / Non-tie**
PB&B Unit 1	Subjective: opportunity shaped by market feedback and stakeholder interactions	Venture: hybrid organization methods used across boarders	Tie: networking allowed finding partner in China
TWIST Unit 1	Objective: opportunity clearly defined in terms of means and ends without iterations	Market: internal resources used to exploit market	Tie: previous social interaction and trust
TWIST Unit 2	Same as above		
TWIST Unit 3	N/A		
GoNitely Unit 1	Objective: demand and means observed environment	Venture: coordination of dispersed cross boarder resources enabled the business	Tie: entrepreneur's social ties enabled the execution of the opportunity in US

GoNitely Unit 2	Same as above	Market: internal resources used to exploit market	Tie: entrepreneur’s social ties helped establish operations in Switzerland
GoNitely Unit 3	Same as above		Tie: entrepreneur’s and customer’s ties bring demand from other foreign markets
Onix Unit 1	Objective: demand and means observed environment	Venture: coordination of dispersed cross boarder resources enabled the business	Non-tie: no common connection between exchange partners
Onix Unit 2	Same as above		Non-tie (despite social ties used in developing the business)
Onix Unit 3	Same as above	Market: internal resources used to exploit foreign market	Tie: family connections and institutional support

5.3 Formation process

The opportunity formation process reflected mostly the mental process from the entrepreneur’s perspective regarding the mode in which the means and the ends involved in his business had come into existence and how they were matched. Startups were expected to be more willing to adjust their plans to exploit valuable opportunities that presented themselves, while Onix, once it had become a large company, was expected to operate in a search mode. Data analysis attested some of these expectations and revealed other non-anticipated patterns.

The opportunity formation process that best describes the fact pattern observed in PB&B’s case is opportunity creation. The role that the institutional ties had in expanding the venture’s network sheds light into an interesting aspect of the role of institutional ties in the effectual network. While PB&B’s institutional partners helped expand the resources available to the venture, it is not clear how they shaped the goals of the venture in a direct manner. This could be related to the fact that institutions, when acting as network integrators, will impose less constrains the entrepreneur’s goals when partnering with them. The opportunity for the facial cream product in China was an artifact arisen out of the interaction with a new large investor, a strong evidence of an effectual network process set in motion where, with the additional resources given by the relationship, constraints arose and new goals were formed by the venture.

For the TWIST case, the formation process of its failed opportunity with CERN is understood as recognition since both the market demand and the means to meet it were known to the entrepreneur and his partners, and could easily be put together. The second international opportunity was formed through discovery since, before the idiosyncratic information about the opportunity with Telefonica reached the venture through its network, the demand was not known, although the means to meet it were already available in the technology of the company's core product, and there was no relevant influence in the venture's goals resulted as an outcome of its interactions with the newly found customer.

GoNitely's entrepreneur previous experience with his mountain house in Switzerland seemed to have been the initial source of the business model he later created. As described by Markus, the existence of underutilized property was ubiquitous, and so was the availability of neighbors who might be willing to manage them as a part-time job. The merit of the entrepreneur's idea was to match these two into a feasible idea and pursue its further development. This formation process is better described by recognition, thought he mental model was slightly reshaped during the development of the opportunity (the centralized model was replaced with a platform of networked managers). The subsequent opportunities of operating in Switzerland, and the planned expansion into southern Europe involved the discovery of local demand for the service.

The differentiating elements of recognition (BARON; ENSLEY, 2006; GEORGE *et al.*, 2016; KIZRNER, 1997) are strongly observed in the origin of Onix since Kevin's father recognized the value in matching dispersed information about the unbalance between available supply and demand of Levi's jeans in the Middle East. The business developed in Taiwan followed the same logic, but in this occasion the idiosyncratic pattern previously formed served as mental pattern which the entrepreneur deployed by looking for a new demand to meet with means that were known to exist. Since becoming a manufacturer, the strategy of deploying the same pattern gave way to a process of discovering to which markets the company would be best able to distribute its products in light of the available social capital and local consumer behavior.

The institutional ties used by PB&B had no distinguishable direct effect on the entrepreneur's beliefs about means and ends – direct influence seemed to stem from other experienced entrepreneurs who advised Anthony, but connected the venture to an investor and partner who triggered a creation process. The institutional tie UFRJ/CERN that preceded TWIST completely shaped an opportunity that was simply recognized by people involved. No significant role for institutional ties was observed in the GoNitely case. Some trade associations in China and Hong Kong supported the discovery process used by Onix – the absence of these ties could have incentivized the company to recognize or create different opportunities to pursue growth.

Table 11 - Summary of formation process elements

	Elements of analysis		
Unit of analysis	**Recognition**	**Discovery**	**Creation**
PB&B Unit 1	Relevant in the pursuit of the general idea, but not specific to the opportunity	Not relevant	Main process: evolving network of stakeholders shaped the opportunity
TWIST Unit 1	Main process: match of known means and demand	Not relevant	Not relevant
TWIST Unit 2	Not relevant	Market need discovered through networks	Not relevant
TWIST Unit 3	N/A		
GoNitely Unit 1	Main process: match of known means and demand	Specific starting area defined by discovery, but not the main process	Adjustment to the execution of the idea to enable expansion
GoNitely Unit 2	Not relevant	Market need discovered through networks	Not relevant
GoNitely Unit 3	Not relevant	Market need discovered through networks	Not relevant
Onix Unit 1	Main process: match of known means and demand	Not relevant	Not relevant
Onix Unit 2	Main process: match of known means and demand	Not relevant	Not relevant
Onix Unit 3	Not relevant	Market need discovered through networks	Not relevant

5.4 Influencing factors

The industry and general characteristics of each company indicated some main influencing factors that could be important. For TWIST and PB&B, external enablers were expected to be a driving factor, mainly because of the high scientific knowledge involved in the business and how it was expected to create market imperfections at least in segments of the industry. As all entrepreneurs had an international background, alertness to idiosyncratic information that crossed boarders was also expected to be observed. Social capital was also seen as needed, at least in the startup cases, who supposedly needed to access many external resources to exploit international opportunities.

By analyzing PB&B's international opportunity, it can be argued that the entrepreneur's personal interest in the area and idiosyncratic prior knowledge from multiple experiences in different countries put him in a privileged position to be alert to the potential opportunity in developing natural solutions for aesthetics purposes. The institutional ties had helped the company by providing it with the social capital to attract highly skilled research partners and serious investors committed to the venture's long term prospects. The company also produced its own external enablers since it is developing and testing completely new technology, and this was regarded by the founder as one of the key factors driving the company forward. Meanwhile, there is an "exogenous external enabler" in the specific opportunity in China; the recently growing demand for luxury western products, which led a major Chinese aesthetics company to prospect exclusive sourcing deals in Europe.

In the TWIST case, the existing ties with CERN as academics was the single factor enabling the first possible international opportunity for venture. Social capital was a major factor in the opportunity with SThAR and Telefonica and was provided through institutional ties in an interesting pattern: swissnex trusted that UFRJ's business incubator had valuable lessons to its AIT program participants, and the incubator, who had privileged knowledge of TWIST's experience, capabilities and background at CERN, trusted that the founders were able to share valuable knowledge to potential entrepreneurs from Switzerland, more so than other ventures hosted by the incubator. This shaped the credibility with which TWIST was presented to its foreign partners (SThAR) and later customers (Telefonica). It is a fair assessment that, without its institutional ties, TWIST would not have been able to find the opportunity it did and, even if it found, it would be less likely to be able to prove its capabilities to the customer, or it would take a lot more effort – company presentation, product demonstrations, etc. Not specific to this opportunity but still relevant is the emergence of data science as both a popular research topic and a highly demanded type of service in most industries as they seek digitalization of their business and optimized data-driven decision making – this is an external enabler for any opportunity exploited by TWIST, a fact highlighted by the venture's founders.

By the time GoNitely's entrepreneurs arrived in the US, they had already identified a ubiquitous opportunity in improving the occupancy of vacation homes. They social ties then enabled them to test their idea, establish and develop their venture in California. In further developing its business model to a platform, the entrepreneur's relied on the expansion potential enabled by the existence of demand a global shift in behavior related to short term rentals – people were increasingly willing to rent their available properties to strangers and foreigners visiting their countries. The social capital of the venture remained important in helping identifying potential markets with the support of people who had good relationships with the entrepreneurs and liked the business concept they developed.

Analyzing Onix, first the element of alertness is identified in its founder, Kevin Flannigan's father. Being relocated to Dubai and being exposed to several countries in the Middle East, he was able to identify a social trend (external enabler) as an opportunity of developing a business in the region and seized it. When moving to Taiwan, the same business framework was used, signaling an element of systematic search; the entrepreneur knew what he needed to learn in a new environment in order to form an opportunity – which in this case meant answering the question: which clothing brands are valued by Taiwanese customers but are not widely distributed? The change in trade tariffs in Taiwan was a relevant enabler as it created a larger market space for importers like Onix. The further development of the company was more heavily influenced by the relationships and social capital that the founder and his family could leverage to expand in different markets, but systematic analysis of the markets trends and trade agreements were also important factors.

PB&B was benefited from being linked to renowned research institutions and later to recognized Swiss agencies such as CTI. Such ties gave the small venture considerable legitimacy and social capital in the medical technology industry. TWIST was born out of institutional partnerships and had since enjoyed the ability to reach out to businesses that were connected to similar institutions – being a technology startup from a developing country meant that previous ties to foreign institutions in Switzerland were critical in establishing credibility for the company when it tried to develop opportunities in developed markets. GoNitely was again a case where institutional ties were unimportant. As pointed out by Markus, this did not mean those institutions wouldn't be able to support him in any way, but just that their usefulness and efficiency were lower than the support he found in his personal connections and on the startup community of Silicon Valley, with the most valuable support being the advice given by experienced entrepreneur on how to solve specific problems. For Onix, institutions only played a role once the company acquired large manufacturing capabilities and adopted a push strategy for growth, exploiting its internal capacity. Again, social capital was the main influencing factor supported by institutions. Even though only a few of the trade association ties were seen as valuable to the firm, they helped it reach localized knowledge by connecting it to local authorities and businesses, which it would not have been able to do otherwise.

Table 12 - Summary of influencing factors elements

	Elements of analysis			
Unit of analysis	**Social capital**	**External enabler**	**Alertness**	**Systematic search**
PB&B Unit 1	Important	Most important	Important	Least important
TWIST Unit 1	Important	Important	Not important	Not important
TWIST Unit 2	Most important	Important	Not important	Not important
TWIST Unit 3	N/A			
GoNitely Unit 1	Important	Important	Most Important	Not important
GoNitely Unit 2	Important	Important	Not important	Not important
GoNitely Unit 3	Important	Important	Not important	Only to vet opportunities
Onix Unit 1	Not important	Important	Most important	Not important
Onix Unit 2	Not important	Important	Least important	Important
Onix Unit 3	Most important	Important	Not important	Important

5.5 Tie strength

The cases in the study had different origins and the entrepreneurs had varied cultural and professional backgrounds. Looking only through a local culture perspective, the cases from Brazil and Hong Kong were expected to emphasize the importance of social layering in generating the trust and commitment needed to exchange information and resource since these cultures are known for having higher spillover between business and private life. In contrast, entrepreneurs from Swiss origin were expected to be able to rely on connections with low social layering, but high in trust and commitment due to universalistic rules, lower levels of uncertainty avoidance and absence of institutional voids.

PB&B's network was important since the company contracted most activities not critical to its core knowledge. Initially, its network was comprised mostly of strong ties with research institutes and the Swiss startup community. As the venture matured, several partners were needed to develop the company further – suppliers, investors, potential customers, and most of those ties were low in social layering, but high in trust and commitment. Due to large investments needed in labs, it was a feature of the medical technology industry that new ventures had to establish ties with large service providers in order to access capital intensive resources. The opportunity in China was also not enabled not by social layering, but by high level of trust from the Chinese investor and mutual commitment in the relationship – a long term investment promise in exchange for the focus on developing products for the Chinese market, a clear change in the venture's strategy. The role of institutional ties was facilitating the activities that helped PB&B find (or be found by) its most important investors and giving the company the legitimacy needed to get the investor's trust in the absence of social layering between them. The company's ties with institutions did not have especially strong social components, but was also high in trust.

TWIST's network was mostly dense and revolved around the technology community in Rio de Janeiro, indicating that most ties were strong and transmitted redundant information to the company. Other important ties were the customers acquired by the venture and the venture's mentors, some of which were COPPEAD alumni. The tie with UFRJ's incubator provided connections to governmental agencies from other countries, and some of these (*e.g. Câmara de Comércio Brasil-Canadá* (CCBC)) were described as strong ties and could bring new information on unique international opportunities to the venture which might not be available otherwise. The tie with the incubator had strong elements of social layering and had been pivotal in connecting TWIST with the partners that helped form what had been its main international opportunity. The exchange partners themselves, Telefonica and SThAR had high trust in the company, which was facilitated by its institutional ties.

GoNitely's entrepreneurs were outgoing and well-travelled persons with a global spanning network of social contacts with other entrepreneurial, wealthy and knowledgeable individuals. Some of those relationships were easily leveraged and transformed into more complex socio-economic ties that maintained its social aspect, which in turn was helpful in spreading positive information about what the company did throughout a dispersed and informal network of individuals around the globe. The company also tried to build ties with institutions, but different factors led those to be less relevant in the development of opportunities. It could be observed that despite institutional ties having mutual trust, there was very low willingness from institutions to make specific adaptations to their services to support GoNitely and its unique informational demands.

Onix's early relationships are marked by low levels of social layering, trust and commitment – signaled by the ties being severed once the company's suppliers saw profits in disintermediating it form the Middle Eastern market. Relationships in Asia proved stronger on social layering, trust and commitment. Despite the vast international business experience accumulated by the company's key decision makers, the company was not especially able, due to lack of trust, to develop strong relationships with institutional actors in the US that could help further expand its business. Instead, it was successful only when exploring the market through a family connection. The network of the company was marked by strong personal ties that played a major role in the development of business and some important ties with exclusive trade associations in Hong Kong and mainland China who were used to connect Onix with key stakeholders in foreign markets. Other weaker institutional ties were present, but since they did not contain enough mutual trust, their importance for the company was small.

The relationships PB&B had with CTI and other Swiss institutions allowed the venture to gain a high level of trust from the Chinese investor and partner company. The influence of institutional ties in the case TWIST is the same as the one described in the analysis of social capital. In the GoNitely case, social layering was relevant only to the entrepreneur's social network, but did not seem to play a role in the failure of the institutional ties in better supporting the venture. As observed in the Onix case, building trust between Asian and western businesses can be a challenge that would hinder formation of valuable international opportunities – in the that case, cultural differences overshadowed the international experience of the entrepreneurs and the company was more successful in developing opportunities in Asia as it had a negative view of the support provided by US trade associations. The trade associations in Hong Kong and China were well connected only in Asia, limiting their ability to support Onix in developing western markets.

Table 13 - Summary of tie strength elements

	Elements of analysis		
Unit of analysis	**Social layering**	**Trust**	**Commitment**
PB&B Unit 1	Low: new relationship with suppliers and investors. Mostly utilitarian ties with institutions	High: investor made upfront investments with relatively low demands. Institutions supported the company's legitimacy	High: the venture changed its product strategy to develop an interesting partnership
TWIST Unit 1	High: experience as students and academics in the same environment	High: projects were nothing but certain for the venture	High: the venture was created specifically to meet CERN's demand
TWIST Unit 2	Low for the exchange partners, but high with incubator	High: selling effort was minimal and customer trusted the venture's capabilities	Medium: doors were kept open, but no strong effort made to develop additional opportunities.
TWIST Unit 3	N/A		
GoNitely Unit 1	High: purely social ties used to identify valuable information and resources. No institutions involved.	High: initial business had no formal contracts and relied on high trust from both sides.	Medium: continued relationships , but no major commitments / mutual adaptation
GoNitely Unit 2	Same as above		
GoNitely Unit 3	High for both personal connections, low for institutional ties	High for both personal connections and institutional ties	Medium for personal connections, low for institutional ties
Onix Unit 1	Low: cold calling and business-only ties. No institution involved.	Low: business carried on a transaction basis, no development of trust	Low: relationship severed as soon as more attractive option was perceived
Onix Unit 2	High: social ties used to develop supply and distribution channels (but not to identify the opportunity). No institutions involved.	Medium: long term relationships developed with suppliers	Medium: continued businesses, but no major commitments/mutual adaptation
Onix Unit 3	High for family and social ties, high for Asian institutions, low for westerns institutions	High for relationships in Asia, low for westerns ties	High in Asia, medium in western markets with only small product adaptation.

6 CONCLUSIONS

The study sought to understand how the use of institutional ties influence the formation of international entrepreneurial opportunities. To guide the investigation, secondary questions were developed and those led to the analysis of how institutional ties are relevant in affecting different aspects of opportunity formation such as the choice of foreign market, the type of opportunity formed, the process of opportunity formation, the strength of an entrepreneur's main ties and main influencing factors selected from the extant literature: social capital, external enablers, entrepreneurial alertness and systematic search.

The study gathered information which, once analyzed in light of the reviewed literature, support different theoretical propositions on how the use of institutional ties may influence different aspects of international opportunity formation. The propositions developed as conclusions to the study relate to three different types of institutional ties: 1) institutions that work as network integrators, 2) institutions that provide business support services (*e.g.* market research, legal advisory, financing sourcing, etc.) and 3) government sponsored institutions that develop applied scientific research. This categorization of institutions emerged from the study and is not clearly found in previous literature, therefore it is also considered as one of the findings of the study. While these institution types are understood as the relevant ones for international entrepreneurship, because they emerged uniquely from the institutions that were connected to the cases included in the study, it should not be expected that this categorization is exhaustive in any regard.

The theoretical propositions on the influence of ties with network integrators on opportunity formation are:

I) Institutional ties can affect an entrepreneur's international opportunity horizon by connecting him or her to dispersed network clusters, which can affect foreign market choice criteria (from market size or psychic distance to network);

Propositions I sheds light into the role of institutional ties in expanding an entrepreneur's opportunity horizon (ELLIS, 2011). The potential effect of institutional ties on foreign market choice articulated in proposition I evidences that the predictive value in long-established concepts of IB, such as the role of psychic distance – most notably described by Johanson and Vahlne (1977), is contingent on the absence of other relevant contextual elements that guide specific market choices. While in many cases market size and psychic distance provide internally consistent ex post explanation for foreign market choice, and easily fit in intuitively sound narratives of past decisions, the role of idiosyncratic ties must not be overlooked, as clearly recognized by more recent IB literature – *e.g.* Schweizer *et al.* (2010), and this includes institutional ties too, not only relationships between businesses.

II) The direct influence of institutional ties on an entrepreneur's goals can be limited, therefore these ties have a unique role in opportunities that are formed through effectual processes: while they can increase the effectual network, they do not necessarily shape the means or ends of the opportunity;

Proposition II posits that the expansion of an entrepreneur's opportunity horizon is not necessarily connected to the effectual network processes described by Sarasvathy and Dew (2005). While network integrators have a role in expanding the possible interactions for the ventures linked to it, they do no directly affect any of the aspects of opportunity formation, but the connections they provide may play a major role in changing an opportunity or enabling the formation of completely new opportunities for the entrepreneur. Evidence from the cases suggest that, as previously suggested by Gibb (1993), from an entrepreneur's point of view, such indirect role may provide more efficient support than when an institution seeks itself to be a service provider since institutions are often perceived to be less flexible and less specific than business partners.

III) Institutions can provide relatively better support to international opportunity formation when they have relevant ties with experienced entrepreneurs than when they have ties with other institutions that work as business support providers since comparable services for these can be found in the open market, while experienced entrepreneurs provide unique problem solving support;

Proposition III brings to the forefront the issue of problem solving (CHANDRA *et al.*, 2009) in international opportunity formation, which can be seen as an evolution of experiential knowledge (PENROSE, 2009) from the management literature. The rationale is that a network integrator provides more value to the formation of an opportunity if it helps the entrepreneur integrate disperse information, not simply provide him or her with more information. This is supported by observations from some of the interviewed entrepreneurs regarding the overwhelming availability of all sorts of information, but difficulty in deciding what is relevant and how to use the relevant bits of information to solve practical business problems and make better decisions. The study failed to observe the relationship described by Andersson *et al.* (2005) between relational embeddedness and the type of knowledge transmitted in a relationship – the possession of idiosyncratic knowledge that is useful to problem solving seemed to be a better indicator of the type of knowledge obtained through a tie, rather than specific attributes of the relationship. The greater value ascribed to advice from experienced entrepreneurs furthers the findings of Baron and Ensley (2006) and indicate that the mental frameworks developed through experience in developing opportunities are helpful in integrating new dispersed information to support the formation and development of new international opportunities.

IV) Ties with home country institutions can help connect the venture to dispersed network clusters, while ties with host country institutions are more valuable in providing knowledge that reduces psychic distance – both from firm and customer perspective.

Proposition IV posits that institutions in home countries that wish to support the formation of international opportunities by entrepreneurs and SMEs should develop efforts to become well connected in target markets, enabling them to become bridge ties – as elaborated by Granovetter (1973). This bridge role is efficient in narrowing the value proposition of the institution to the expansion of the opportunity horizon of entrepreneurs connected to it, and it limits the scope of one institution to connecting ventures to knowledgeable actors in relevant markets, instead of also being tasked with providing detailed market knowledge and institutional knowledge – these would have to be acquired by the ventures themselves once they are bridged to the relevant market. Once established, ties with host country institutions appear to reduce the psychic distance and facilitate information exchange between businesses and their prospect markets. This support given by host country institutions is important to overcomes one of the particular challenges of international opportunity formation described by Mathews and Zander (2007): the issue of accessing locally contained or “sticky” market knowledge and resources.

One of the theoretical propositions derived from the analysis relates specifically to ties with institutions that provide business support services:

V) Business support services provided by institutions can be perceived by entrepreneurs to lack competitive advantage when compared with equivalent services available in the open market (*e.g.* consultants) regarding cost, speed, quality or some form of differentiation.

Proposition V serves as a caution warning to policy makers and administrators of institutions that focus on providing services. While intuitively there might be little doubt that making business support services available to startup and entrepreneurs is a way to support economic development, investments should be considered carefully and focus on areas where existing service providers do not meet the existing needs of startup and SMEs and, even then, institutions need to build capabilities that will enable them to be valued partners, not simply the only option available. The perception of some of the entrepreneurs in the study regarding the effectiveness of the support services provided by institutions put into question the net benefit of having institutional support instead of relying on business partners. This perception was in line with some of findings of Ramsden and Bennet (2005) and highlight the need for concern from institutions with service quality and depth of knowledge regarding entrepreneurial challenges, as well as with proper communication of what exactly the institution can reliably provide entrepreneurs with. Also supporting the findings of Narooz and Child (2017), the study suggests that some industries, especially knowledge intensive ones, already provide a support structure that supersedes the offerings from institutions, possibly making institutional ties less relevant.

Another theoretical proposition from the study applies only to government sponsored institutions that develop applied scientific research:

VI) Institutional ties among institutions from different countries that conduct joint research efforts carry knowledge that can be transformed into international opportunities in a global niche segment or as a localized arrangement between the involved parties that can further expand when new opportunities arise.

Proposition VI underscores that not only business-institution ties are of interest to the international opportunity formation phenomenon. In cases where previously institutional-only ties evolve into cross-border profit-driven economic activity, most aspects of the resulting opportunity will be connected to the previous activity being developed by the linked institutions. The proposition gives further support to the opportunity-based view of opportunities advocated by Chandra *et al*. (2012) as it illustrates one of the possible environments in which the foundations of international opportunities slowly grow until a certain event triggers the setting up of a venture that displays rapid internationalization. This propensity of institutional research arrangements creating business opportunities can also be related to McDougall and Oviatt's (2005) model of internationalization speed, since those institutional ties tend to involve high knowledge intensity activity. The author's model could be enhanced by more clearly recognizing that, in addition to moderating the speed of internationalization, knowledge intensity also has an enabling role in rapid internationalization since it is the possession of highly specialized knowledge that allows entrepreneurs and their small ventures to form opportunities by meeting specific demands in remote niche markets that do not possess such knowledge.

Two remaining theoretical propositions pertains to institutional ties in general:

VII) Links between institutions from developed economies with institutions from developing economies can provide credibility to firms in the latter, especially startups and SMEs, which facilitates gaining potential customer's trust in developed host countries;

Proposition VII illustrates the role of institutional ties in reducing psychic distance, especially between businesses in developed economies and startups from developing countries. Indeed, the study observed cases in which the relevant psychic distance level of analysis was the one of the individual decision-maker, not the distance between countries, a nuance that had been acknowledged by Joahnson and Vahlne (2009). Countering the perception of low relevance of developing economies in producing cutting edge innovation, partnerships between institutions lend to the involved ventures the credibility from the institution in the host country (developed economy), reducing the perception of risk from the customer side and enabling the formation of international opportunities. Finally, the proposition adds that, while the traditional focus of IB literature has been on risk perception from the perspective of the internationalizing firm, perceived risk is a relevant decision factor from the customer side, be it business or individual consumer.

VIII) Institutions can provide legitimacy to startups that develop high technology (*i.e.* knowledge intensive) products and services, therefore supporting the social capital needed to access higher quality external resources which, in these highly developed industries, often means access to specialized foreign resources (suppliers, investors, licensees, etc.);

Proposition VIII relates more specifically to the issue of credibility and focuses on the enabling role that institutions have in allowing very small startups to partner with large international organizations. This institutional role in shaping the social capital in business networks helps to understand how the coordination of resources through networks can replace internalization and therefore facilitate the formation of international opportunities by small ventures. The importance of coordination of resources through alternative means to hierarchical internalization has been long acknowledged by Johanson and Mattsson (1987), Oviatt and McDougall (1994) and other IB and IE authors, and the study's proposition helps to understand how institutional ties support such process.

Table 14 - Theoretical scope of the study's propositions

Proposition	**Opportunity formation aspect addressed**	**Examples of related literature**
I	Opportunity horizon, foreign market choice	Ellis (2011), Johanson and Vahlne (1977), Schweizer *et al.* (2010)
II	Effectual network, institutional support design	Sarasvathy and Dew (2005), Gibb (1993)
III	Experiential knowledge, problem solving, pattern recognition	Andersson *et al.* (2005), Chandra *et al.* (2009), Penrose (2009), Baron and Ensley (2006)
IV	Network structure, locally contained knowledge	Granovetter (1973), Mathews and Zander (2007)
V	Efficiency and competitiveness of institutions as service providers	Ramsden and Bennet (2005), Narooz and Child (2017)
VI	Enabling factors (knowledge intensity), opportunity-based view of internationalization	McDougall and Oviatt (2005), Chandra *et al.* (2012)
VII	*Liability of outsidership* as alternative analysis to *liability of foreigness*	Johanson and Vahlne (2009)
VIII	Coordination of resources outside hierarchies	Johanson and Mattsson (1987), Oviatt and McDougall (1994)

6.1 Practical implication from the study

It was possible to observe in different aspects, but most notably in the GoNitely case, that even institutions in developed economies that are well organized might fail to support the development of specific international opportunities. Part of this seems to be connected to the lack of understanding of the entrepreneurial challenges faced by new ventures developing business abroad since the support of other experienced entrepreneurs that had faced similar challenges was observed as being the most valuable resource used. Overall, this relates to the idea of experiential knowledge (PENROSE, 2009) and the previous observation from Gibb (1993) that institutions are better able to support when they behave like entrepreneurs and have precise knowledge of the different information and resources provided by other institutions as well. This higher entrepreneurial behavior could mend their lack of experiential knowledge in developing international opportunities.

6.2 Future research suggestions

Along the development of this study, additional questions regarding the formation process of international entrepreneurial opportunities arose and could not be practically addressed. Firstly, it seemed evident that the literature on international entrepreneurship is in its early development compared to many fields in business research. Therefore, many concepts have not been fully explored and some definitional confusions exist, such as the one regarding opportunity, which was approached in the literature review, but not addressed as an objective of this study. While there is no single recommendation that would address this issue, it seems necessary to continue developing conceptual and theoretical studies that seek to clarify the social objects under study.

In investigating the role of institutional ties on affecting several aspects of opportunity formation, this study was an exploration of the topic. Some findings suggest that more focused questions could be explored, such as the influence that network integrators can have on opportunity creation. The proposition II elaborated in the study could be tested and the impact of new relationships on an entrepreneur's goals, a key element of effectuation (SARASVATHY, 2008) could be analyzed from the lens of vertical and horizontal stakeholders, since, as elaborated by Hadjikhani and Thilenius (2005), horizontal relationships can generate uncertainty in interconnected relationships. Furthering the analysis of how horizontal ties (both business and non-business) affect an entrepreneur's goals would support integration between effectuation research and business network research.

Also, while the literature is rich in acknowledging the role of international experience in internationalization (*e.g.* JOHANSON; VAHLNE, 2009; MATHEWS; ZANDER, 2007, OVIATT; MCDOUGALL, 1995), analyzing the Onix case, the study found that such experience does not necessarily help overcoming psychic distances that need to be bridged to develop the trust and commitment to share knowledge and form and exploit opportunities with foreign business partners. It could be interesting to investigate how similarities and differences across different international experiences and personal trajectories build or not an entrepreneur's ability to overcome psychic distances and enable him or her to build trust and commitment with foreign partners.

During the field work for the study, two ventures and their international opportunities (TWIST and Embotech – the latter of which had to be removed from study) were formed by a combination of technology development inside universities and special cross-border institutional arrangements. In the TWIST case, the opportunity did not materialize, so it could be interesting to investigate if there are specific traits of cross-border institutional ties that lead to successful opportunity exploitation, and whether the institutions themselves can take measures to foster the creation of such economic activity.

Finally, in more than one occasion observed in the cases studies competition was a major factor involved in market entry decision and continuation of opportunity formation and development efforts. It could be interesting to incorporate more of strategic entrepreneurship concepts into the investigation of opportunity formation and how the entrepreneur's perception and consideration of different business strategy elements into his or her decisions influences the opportunity formation process. Interesting findings may arise from analyzing how variables such as size, strategy and other organizational issues shape the information and resources that the firm seeks through its institutional ties and how these will be used once acquired (*e.g.* a large firm might ignore information about a small opportunity which, for a startup, could trigger an opportunity creation process).

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APPENDIX A – INTERVIEW PROTOCOL (US ENGLISH)

PART 1 – General information about entrepreneur, venture and industry

Question 1 – entrepreneur's basic personal profile

(1) Before discussing the topics related to the research, I would like you to talk shortly about yourself and your life trajectory? (explanation: name, age, birth place, places you lived, formal education and extra-curricular)

Questions 2 and 3 – entrepreneur's professional profile

(2) How has your professional development path been like? (3) How did you choose this professional development? (explanation: academic area, career development, industry specific experience, entrepreneurship track record)

Questions 4 and 5 – venture development and current profile

(4) How did your company start and how did it develop until now? (5) Could you please describe how the company operates today and what is its current focus?

Questions 6 to 9 – industry structure

(6) Who are your venture's customers? (7) Who are your venture's suppliers? (8) Who are your venture's competitors? (9) Which are the main characteristics of the market in which your venture operates?

PART 2 – Aspects of international opportunity formation

Question 1 – general description of the opportunity

(1) Could you describe one or more international opportunity that your company was involved? (explanation: where? how the partners involved were found / found you?)

Question 2 – foreign market choice (market size, psychic distance, networks)

(2) In which way the markets that comprise this opportunity were defined? (explanation: which were, or will be, the criteria to choose a foreign market)

Question 3 – formation process: creation

(3) Do you believe the stakeholders involved in exploring this opportunity have changed the content of the business (problem/solution)? – due to constraints/requirements arising from these new relationships? (explanation: have new 'players' changed – constraining or enabling – the opportunity you are pursuing/exploiting?)

(If yes) How would you describe this influence? Why do you think it happens?

(If no) Why do you think it did not happen?

Question 4 – formation process: recognition or discovery

Introduction to the question: businesses can be described simply as a demand being met through certain means. (example: petroleum (mean), energy (demand)… other than burning it for energy, petroleum is used to meet the demand of producing materials with certain properties (plastic), and there are many alternative ways of meeting the demand for energy)

(4) In the opportunity your venture is exploring, what is the demand and what are the means to meet it? Could you elaborate on the origin of those and how they were put together?

Question 5 – Alertness

(5) How did your previous experience, personal traits and connections have influenced this opportunity?

Question 6 – Acquisition of information (alertness to idiosyncratic information or systematic search)

(6) What is the predominant way in which information and knowledge about this opportunity were acquired? Based on previous knowledge and connections and being alert, or systematic? (search for optimal partners via trade associations or governmental agencies)

Question 7 – External conditions (enablers and constraints)

(7) Which elements external to your venture help explore this international opportunity? Which elements external to your venture inhibit / hinder the exploration of the international opportunity (or are likely to do so)? (regulations, technology available, demographics)

PART 3 – Networks and institutional ties

Question 1 – Network actors

(1) Which are your venture's main relationships? Which connections are still missing or being developed? Are institutions relevant for the business?

Questions 2 – Tie strength

(2) How would you describe each relationship with more detail? (time, intensity, intimacy, reciprocity, levels of trust and commitment)

Questions 3 and 4 – Social capital / network position

(3) Which contacts/relationships played a major role in enabling resources to explore this opportunity? (4) What makes your venture able to access resources through these contacts/relationship?

Question 5 – Social layering

(5) Is there an overlap between your personal network and your venture's network? (explanation: if you would quit your current business, are you likely to rely on the same connections to develop a new venture?)

Questions 6, 7, 8 and 9 – Institutional ties

(6) Which are, or could be, the main institutions involved in the development of international opportunities? (7) What is, or could be, the role of these institution in developing these opportunities? (explanation: what can, or could be, obtained?) Follow-up (if applicable): please describe the items obtained in detail (8) How would you compare the dynamics of interacting with institutions versus interacting with businesses (clients, suppliers, investors)? (explanation: more formal or informal, more objective or subjective communication?) (9) Is there an influence of institutional relationships over the remaining business relationship? How does it manifest itself?

Acknowledgement and wrap-up

Is there something related to the topics we have discussed which you would like to mention or elaborate? Do you have any feedback on the interview?

APPENDIX B – INTERVIEW PROTOCOL (BRAZILIAN PORTUGUESE)

PARTE 1 – Informações gerais sobre empreendedor, empreendimento e indústria

Pergunta 1 – perfil básico do empreendedor

(1) Antes de discutir os tópicos relacionados à pesquisa, eu gostaria que você contasse brevemente você e sua trajetória? (explicação: nome, idade, onde nasceu, lugares onde morou, educação formal e atividades extra-curriculares)

Perguntas 2 e 3 – perfil profissional do empreendedor

(2) Como você foi sua trajetória de desenvolvimento profissional? (3) Como você fez suas escolhas profissionais? (explicação: área acadêmica, desenvolvimento de carreira, experiência específica na indústria, histórico como empreendedor)

Perguntas 4 e 5 – trajetória do empreendimento e perfil atual

(4) Como o seu empreendimento começou e como ele se desenvolveu até o momento? (5) Você poderia descrever como o seu empreedimento funciona hoje qual o foco atual?

Perguntas 6 a 9 – estrutura da indústria

(6) Quem são os clientes do seu empreendimento? (7) Quem são os fornecedores do seu empreendimento? (8) Quem são os concorrentes do seu empreedimento? (9) Quais são as principais características do setor no qual seu empreendimento opera?

PARTE 2 – Aspectos da formação de oportunidades internacionais

Pergunta 1 – descrição geral da oportunidade

(1) Você poderia descrever uma ou mais oportunidade internactional que seu empreendimento esteve envolvido? (explicação: onde? como os envolvidos foram econtrados / encontraram você?)

Pergunta 2 – escolha de mercado estrangeiro (tamanho de mercado, distância psíquica, redes)

(2) De que forma os mercados que essa oportunidade abrange foram definidos? (explicação: quais foram, ou serão, os critérios para escolher um mercado estrangeiro)

Pergunta 3 – processo de formação: criação

(3) Você acredita que os stakeholders envolvidos na oportunidade alteraram o conteúdo do negócio que se planejava inicialmente? (problema / solução) (explicação: os novos envolvidos mudaram – restringindo ou ampliando – a oportunidade sendo buscada / explorada?)

(Sim) Como você descreveria essa influência? Por que você acha que ela acontece?

(Não) Porque você acha que essa influência não aconteceu?

Pergunta 4 – processo de formação: reconhecimento ou descoberta

Introdução à questão: negócios podem ser simplesmente descritos como uma demanda sendo atendida através de certos meios (exemplo: petróleo (meio), energia (demanda)... além de fonte de energia, petróleo também é usado para atender a demanda por materiais com certas propriedades (plásticos), e existem muitas formas alternativas de atender a demanda por energia)

(4) Na oportunidade que seu empreendimento está envolvido, qual é a demanda e os meios sendo usados para a suprir? Qual a origem da demanda e dos meios e como seu empreendimento conectou ambos?

Pergunta 5 – Alertidão

(5) Como suas experiências passadas, suas caraterísticas pessoais ou contatos influenciaram essa oportunidade?

Pergunta 6 – Aquisição de informação (alertidão à informação idiosincrática ou busca sistemática?)

Qual é a forma predominante pela qual as diferentes informações sobre essa oportunidade foram adquiridas? Baseada em conhecimento prévio e conexões, ou busca sistemática (exemplo: busca por conexões ideais por associações comerciais ou orgãos governamentais)

Pergunta 7 – Condições externas (facilitadores e limitadores)

(7) Quais elementos externos ao seu empreendimento ajudam explorar essa oportunidade internacional? Quais elementos externos ao seu empreendimento inibem ou dificultam a exploração dessa oportunidade internacional (ou são prováveis dificultadores)?

PARTE 3 – Redes e laços institucionais

Pergunta 1 – Elementos da rede

(1) Quais são as principais relações para seu empreedimento? Quais relações estão faltando? Instituições são relevantes para o negócio?

Pergunta 2 – Força da relação/laço

(2) Como você descreveria de forma mais detalhada cada relação? (tempo, intensidade, intimidade e reciprocidade, níveis de confiança e comprometimento)

Perguntas 3 e 4 – Capital social / posicionamento na rede

(3) Quais relações tiveram um papel importante em facilitar recursos para a busca/exploração de oportunidades pelo seu empreedimento? (4) O que torna seu empreendimento seja capaz de acessar recursos através dessas relações?

Pergunta 5 – Componente social

(5) Há sobreposição da sua rede de contatos pessoal com a dos seu empreendimento?

(explicação: se você se desligasse do seu negócio atual, seria provável que poderia depender das mesmas conexões para desenvolver um novo negócio?)

Perguntas 6, 7, 8 e 9 – Laços institucionais

(6) Quais são, ou poderiam ser, as principais instituições para o desenvolvimento de oportunidades internacionais? (7) Qual é, ou poderia ser, o papel dessas instituições no desenvolvimento dessas oportunidades? (explicação: que tipo de informações e recursos são, ou poderiam ser, obtidos?)

(se aplicável) Como você descreveria essas informações/recursos em detalhes? (8) Comparando instituições com parceiros de negócio (cliente, fornecedores, sócios), quais diferenças se destacam na dinâmica dessas relações? (explicação: mais formal ou informal? comunicação objetiva ou subjetiva?) (9) Há influência das relações institucionais nas demais relações de negócios? Como isso se manifesta?

Agradecimento e término

Há algo, relacionado aos temas que conversamos, que você gostaria de mencionar ou elaborar mais? Algum comentário sobre a entrevista?