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INNOVATION INTERMEDIARIES AS AGENTS FOR SMEs' ORGANIZATIONAL LEARNING: A CASE STUDY ON THE UCLA'S GLOBAL ACCESS PROGRAM

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Abstract

In this article we analyse the role that innovation intermediaries play in supporting SMEs international sales and growth, by creating highly firm-specific learning and making it possible to access and accumulate strategic resources. We based our analysis on a set of 24 Italian firms that participated to an international program (GAP) organized by the business school of UCLA. Results show that thank to this intermediary, SMEs had been able to obtain different learning outcomes regarding the accumulation of new skills and organization competencies needed to enter a new market and to exploit complementary resources. This learning process followed a different pattern in entrepreneurial and managerial firms. The process created by the intermediary made it possible to match the firm's idiosyncratic technological and market knowledge with complementary knowledge resources that the firm could not access through their local search dynamics. In raising this evidence, the paper intends to provide a novelty contribution to open innovation studies, which regards the way innovation intermediaries can contribute to the growth and the organizational learning of SMEs.

Keywords: Open innovation, Entrepreneurship, Innovation Intermediaries, SMEs, internationalization

1. INTRODUCTION

Although Small and Medium Enterprises (SMEs) are often the source of important innovation, they often face severe difficulties in bringing their innovative products in international markets, due to constraints on available resources, lack of market power, reputation and poor knowledge on market dynamics abroad (Hollestein, 2005). Despite advances in telecommunication and logistics services have reduced some of costs of doing business abroad also for SMEs, the complexity of internationalization strategies has been growing due to a reconfiguration of many values chains, a growth in global competition, and a shortening in product life cycles. SMEs have traditionally reduced part of the complexity raising from these trends by relying on export intermediaries (Fletcher, 2004) such as dealers and agents located either in the targeted foreign market or in the home market. However, such forms of intermediation often imply for SMEs the loss of part of their current profit margin (Acs and Terejsen, 2006) and a limited ability to fully exploit the strategic opportunities generated by their R&D efforts on an international scale, especially when SMEs enter a foreign market by licensing out their technology, instead than by commercializing a "whole product".

These economics in the intermediation of SMEs in internationalization ventures poses a growing attention on the way SMEs are able to select international markets and to

define the related value proposition, which is a process that anticipates the establishment of partnerships with commercial intermediaries. As today SMEs tend to focus on niche markets having an international geographical scope, strategy planning for what regards the “go-to-market” process entail search processes having a broad scope and multiple sources to analyse. In dealing with the cognitive difficulties of this search process, SMEs do not rely on the resources and the formalized organizational capabilities that most of their larger counterparts have developed to face the challenges of international competition. Despite internationalization requires knowledge search processes that exhibit considerable discontinuities for SMEs with regard to both the market and the technological components of the innovations that are required for entering foreign markets, current literature on open innovation has curiously taken into marginal account this topic, posing a limited attention on the role that innovation intermediaries may play in SMEs’ endeavours to enter and penetrate international markets. Whereas export intermediaries link buyers and sellers in geographically distinct markets, innovation intermediaries create values for firms by identifying, accessing and transferring knowledge and in particular solutions to problems in various stages of the innovation process (Hargadon and Sutton, 1997; Verona et al. 2006). Innovation intermediaries that can have a role in supporting small firms’ international endeavours can be universities, incubators, technology brokers (e.g. IDEO), and service organizations (see Howells, 2006 for a review).

Most of the innovation intermediaries taken into account in open innovation literature are not viable solutions for small firms. Furthermore, studies on SMEs internationalization have examined the role of intermediaries in relation to the logistics and administrative issues related to exports (e.g. how export intermediaries support negotiation with foreign customers or how they reduce commercial risks associated with operating in a foreign market), but they have overlooked whether and how intermediaries can support the accumulation of entrepreneurial competencies required for redefining the product’s value proposition, identifying customer segments and setting-up new distribution channels in a foreign market. This topic is of particularly interest especially for economies where the contribution of SMEs to GDP is particularly high (e.g. Denmark, Italy, etc.) and growth must be achieved abroad because of the small size of the home market. More broadly speaking, existing studies have also posed limited attention on the impact of innovation intermediaries since in many cases the impact of intermediaries occurs indirectly (Howell, 2006) and is not directly observable, because of the limited opportunities for scholars to observe directly the intermediation process and what happens after the support of the innovation intermediary.

Based on these gaps, this study intends to contribute to literature regarding the role of innovation intermediaries in sustaining international growth of SMEs by sustaining the creation of new skills and capabilities. This type of focus allows the understanding both of the immediate and long-term impact that innovation intermediaries have on facilitating the creation of dynamic capabilities in SMEs

Evidence on the impact of intermediary comes from the analysis of the Global Access Program (GAP), which is offered to non-US firms by the Anderson School of Management at the University of California in Los Angeles (UCLA). The possibility of

carrying out case studies on 24 Italian SMEs gave us the opportunity to have a direct observation of both the immediate and the ultimate impact of innovation intermediaries in SMEs internationalization endeavours. The research is still on-going, with additional analysis and case studies in progress.

2. THEORETICAL BACKGROUND

2.1 THE NEED FOR INTERMEDIARIES IN SMEs INTERNATIONALIZATION PROCESSES

There are multiple reasons that explain the need for intermediaries for SMEs, and most of them can be essentially traced back to the following causes:

- It is difficult to transfer abroad the economic value of SMEs' innovations, especially when products are complex and are founded on a body of idiosyncratic technical and market knowledge
- In case the product is targeted to large customers, they prefer not to buy from SMEs since they do not have the needed reputation and financial stability;
- SMEs cannot afford the commercial expenses needed to directly sell abroad nor are able to attract capital from professional investors
- The size of local country markets is too small to cover the fixed costs associated with the creation of international branches.
- SMEs have not the individual skills, the organizational capabilities and the financial resources for undertaking internally the whole strategizing process that is needed to identify and exploit market opportunities abroad.

As we stated in the introduction, partnerships with export intermediaries in the foreign target market (such as agents and distributors located either at home or abroad) can only in part support SMEs in mitigating these weaknesses and cannot allow a full exploitation and return appropriability of the strategic opportunities that are available in foreign markets. In most of the cases the way SMEs select export intermediaries and partners for distribution in foreign markets reflects a "local search" that is constrained by the limited social capital available to SMEs.

Putting this issue in terms of resource dependency theory (Pfeffer and Salancik, 1978), as the partnerships with export intermediaries can have high costs for SMEs, a small firm should search for alternative paths aimed at reducing the dependence from these types of intermediaries. Innovation intermediaries, being more focalized on the strategizing process, can represent a way for internationalization that can be more economically sustainable for SMEs on the long term.

Studies on SME's internationalization tend to overlook that intermediaries supporting small firms in "going abroad" process can also assume a role in the strategizing process and the innovation endeavours that are needed to enter a foreign market. Under this point of view, in internationalization endeavours innovation intermediaries can play four crucial roles, as suggested by recent studies on the open innovation (Howells, 2006). First, by playing a gatekeeping and brokering role, intermediaries can facilitate exploration of market opportunities by allowing firms to avoid problems of "local

search” (Rosenkopf and Almeida, 2003) and “over-search” (Laursen and Salter, 2006) in environmental scanning. Second, intermediaries can play more than just a linking role and can help firms to transform the ideas and knowledge being transferred into a product or processes (Van der Meulen and Rip, 2003). Third, intermediary bodies – such as research councils, funding bodies, universities and research organizations - can play an institutional role by allowing firms that are poor in social capital to gain access to important financial investors or strategic customers. Finally, innovation intermediaries can play a management support role, which has been investigated mainly in relation to start-ups (Lee et al., 2010) and not to more established SMEs.

In relation to this fourth role, the way innovation intermediaries contribute to the accumulation of entrepreneurial competencies in SMEs’ internationalization process has been object of limited attention and theorization, and this is particularly important if we consider obstacles that such firms encounter in entering new foreign markets. The reason lies in the fact that to implement internationalization processes, SMEs need competencies for being alert to new commercial opportunities, combining existing resources in novel ways and articulating an inspiring vision which draws in other actors (Leiblein and Reuer, 2004). Nevertheless, some differences can exist among smaller firms, where the entrepreneur owns all the decision making power, and larger and more established SMEs, where some managerial roles exist and strategizing processes are more formalized. The role of innovation intermediaries can be beneficial to both types of SMEs, but some important differences may exist, thus increasing the importance of a better understanding of the role played by intermediaries.

2.2 INNOVATION INTERMEDIARIES AND THE CREATION OF NEW COMPETENCIES FOR THE SMEs INTERNATIONALIZATION PROCESSES

The most critical obstacles for SMEs willing to grow in international markets are not directly related to the R&D efforts needed to design new products for foreign markets, but they rather lie in an array of assets, knowledge resources and organizational competencies that are required to sell such products on international markets.

In transforming R&D results into products sold on international markets, SMEs often lack entrepreneurial competencies, reputation and the absorptive capacities that are needed to identify global opportunities, undertake market segmentation analysis, define a compelling value proposition, develop agreements with local dealers and sales channels, etc. Moreover, SMEs often bear a “liability of newness” (Bruderl and Schussler, 1990) due to a lack of reputation in front of potential stakeholders (suppliers, customers, investors, partners, etc.) in a local foreign market. The development of such competencies is necessary, but expensive, risky and subject to time compression diseconomies as it entails time consuming and costly “trial and error” attempts, which often discourage SMEs in pursuing internationalization strategies.

Export intermediaries tend to make such competencies available, but SMEs can hardly internalize them due to the lack of absorptive capacities; the final effect is that they offer a limited short-term learning experience for entrepreneurs and organizations, which cannot be applied for entering other markets.

In light of these problems, innovation intermediaries can contribute in different ways in creating in SMEs strategizing routines and absorptive capacities that are needed to enter foreign markets.

One potential effect regards the introduction of new organizational routines, that may take the place of existing ones. Past research (Anderson and Eshima, 2013) suggest that when it comes to internationalization strategies the lack of entrepreneurial competencies – and thus the importance of intermediaries in compensating these gaps – may concern SMEs regardless of their age. Specifically, on the one hand, older (and relatively smaller) SMEs may be unable to reap the performance rewards from entrepreneurial-centric strategies as their established routines often devolve into core rigidities that make any change slow and incomplete. On the other hand, younger SMEs often lack formalized routines and processes able to provide guidance in strategic-decision making; this weakness may result into an excessive “trial and error” behaviour without a clear strategic purpose, which is not compatible with the limited availability of financial and organizational resources.

Also absorptive capacities for sensing a new market are scarce within SMEs, due to their limited availability of slack resources, the lack of gate-keeping roles and of social capital in foreign markets and the absence of any former experience in managing the entry in new market segments. Furthermore, the lack of experience in dealing with different business cultures, a more homogeneous workforce in terms of culture, and the lower variety of professional experience in the management team, make altogether SMEs less capable of managing cross-cultural collaboration, and in particular of interpreting and assimilating knowledge and information from across an international network, much of which is tacit and culturally specific (Leiblein and Reur, 2004).

For both young and more established SMEs absorptive capacities are thus critical to enter a foreign market, as internationalization requires product innovation to meet the requirements of the new market, collaboration with local firms, and capability to recognize the market segments with the most favourable potential.

Since firms’ and entrepreneurs’ characteristics may in any case heavily influence the accumulation of such capacities, the role of innovation intermediaries should change accordingly.

To the best of our knowledge, although the above-mentioned weaknesses have been well documented in previous literature, earlier studies do not clearly define the structure of the organizational learning processes that an intermediary may trigger and support in the internationalization endeavours of SMEs. Also studies on internationalization processes privileges a view of intermediaries as entities that support firms entering a foreign market by allowing a better orchestration of the capabilities and assets that are required in the new focal market. In so doing, these studies tend to consider the immediate output of the intermediation process and do not explicitly consider the long-term effects that intermediaries can generate. In the same manner, earlier studies have had a limited view also on the support that intermediaries may give in the early stages of the internationalization process by triggering the transfer of entrepreneurial know-

how and routines that are required for market segmentation decisions and for the assessment of business opportunities.

Based on our analysis, we believe that innovation intermediaries role is more complex, since it puts together immediate results (i.e. the use of knowledge resources for overcoming local search problems) and longer term results that influence organizational routines and capabilities. It also allows SMEs to internalize capabilities that are idiosyncratic to their business, and that cannot be acquired on the market.

In particular, in light of their peculiarities, the dynamics of the organizational learning process that an innovation intermediary initiates in a SME can differ significantly from what occurs in a larger firms through the intermediation process. In particular, as in smaller SMEs decision-making processes that relate to strategy definition and market selection are less formalized, the collaboration with an innovation intermediary may lead to a learning process that is individual and involve only the entrepreneur or the senior managers involved in interacting with the intermediary. In larger SMEs, this individual learning process may represent the micro foundation for subsequent organizational learning dynamics that lead to the creation of new entrepreneurial routines and formalized processes that SMEs deploy in the various phases of definition and execution of an entry strategy into a foreign market. Factors that may lead to the development of routines in larger SMEs can be related to two type of reasons. First, in larger SMEs there is a broader delegation of decision-making process and a broader top management team. This may lead the firm's entrepreneur/senior manager to have a greater intentionality to exploit the intermediation experience for an opportunity to develop formalized routines and processes for strategizing. Second, as firms and individuals need prior related knowledge to assimilate and use new knowledge, larger SMEs, relying on a greater breadth of prior diversification attempts, may be better prepared to use the intermediation experience to build new routines and organizational competencies.

Based on this discussion, this study intends to contribute to literature regarding the role of intermediaries in sustaining international growth of SMEs by examining the following research questions:

- i) In SMEs are managerial competencies and organizational routines focused on market analysis an important complementary resource in driving the internationalization this process?
- ii) how can SMEs create new entrepreneurial routines/competencies and acquire new complementary resources by interacting with innovation intermediaries?
- iii) How can innovation intermediaries sustain such learning process and which is its time horizon and objectives? Are they complementary to more traditional commercial intermediaries and/or to direct export modes?

This type of focus allows the understanding both of the immediate and long-term impact that innovation intermediaries may have on facilitating the creation of this type of dynamic capabilities in SMEs, using also different metrics for each stage / impact.

3. RESEARCH DESIGN

In order to investigate the role of innovation intermediaries, we focused our attention on a set of 24 Italian SMEs having developed (after R&D investments) hi-tech products whose customers can be found in many countries. Such SMEs participated from 2007 to 2012 to an internationalization program organized by the Anderson School of Management at the University of California at Los Angeles (UCLA), which plays the role of innovation intermediary.

We also highlight how the learning process significantly differs from the one that can be activated by consultants when entrepreneurs and manager are asked / forced to apply new routines that represent “best practices” into their day-by-day activities.

3.1 THE GLOBAL ACCESS PROGRAM

The Global Access Program (GAP¹) has been created around state-of-the-art methods aimed at analysing new market opportunities to management of non-US companies seeking strategic advice, particularly concerning operating in and selling to international markets.

The Anderson School of Management acts as an innovation intermediary that support SMEs both in (i) learning and developing new capabilities and skills, and in selecting and accessing complementary resources needed to create an international sales base; they include “reputation” (coming from the selection process SMEs must go through to participate to the program), access to international network (SMEs can access potential customers or commercial partners through UCLA contacts) and detailed market information. The GAP long term objective is therefore to create a learning-by-doing experience able to transfer to the management team and to the entire organization some “good practices” needed to growth in international markets.

During six months, the companies participating to the GAP have the opportunity to engage a team of five Fully-Employed MBA (FEMBA) students in a field study² having the objective of developing a business strategy that enables them to sell in international markets. In order to do this, each team signs an agreement and works with the company management to address strategic business issues, develop a comprehensive and independent market analysis, including the validation of company value proposition and planning of entry decisions³. The six-month program ends with a presentation in front of some market experts and professional investors.

To be selected, companies must have products with a potential international market, and show some unique technical competencies; they must also go through a two-stage selection process, being the first stage accomplished by national intermediaries and the second by the Anderson faculty. Interviews with the management team and the expected commitment of the management team to the project are one of the main selection

¹ <http://www.anderson.ucla.edu/programs-and-outreach/gap>

² This FEMBA has been rated #1 by Business Week within American equivalent programs.

³ The plan typically involves launching a new product into an existing market, launching an existing product into a new geographical market, offering an existing product into a new market segment, developing a new product for a specific market segment, or leveraging existing intellectual property into new products and new markets.

drivers applied by Anderson faculty. Specifically, there must be in each company at least 2 managers that commit 4-8 hours a week of joint work with the team; managers in most of the cases include the company owner. As a result of this selection, the average quality of managers and/or entrepreneurs is high, causing a selection bias.

There are multiple expected outcomes for SMEs participating in the GAP program, each with a different time horizon: (i) a comprehensive, independent assessment of company's current plan including growth strategies and market opportunities based on extensive primary and secondary market research (on average 100-200 on-field interviews with competitors, potential customers and sales partners, etc.); (ii) a six-month learning process for the SMEs management teams, which is intended to commit the firm to work side by side with the UCLA team, applying state-of-the-art management analysis techniques, discuss market data, share financial projections, and share recommendations designed to accelerate company; (iii) a business plan that receives contributions, reviews and constructive feedbacks from outside executives and experts, including attorneys, accountants, technology experts, angel investors and venture capital professionals; (iv) last but not least during the program, SMEs are able to access UCLA Anderson's extensive business network of students, alumni, faculty and consultants to receive management support and/or to access potential partners, customers and investors.

Since 1998, the Global Access Program has generated over \$200 million in direct investment in SMEs that participated to it; such data testify both the quality of the selected companies and the quality of the plan prepared during the program.

The Anderson School of Management has some national partners (i.e. the Turin Chamber of Commerce in Italy) that help select Italian companies, and sustain learning by organizing some specific training courses for entrepreneurs and managers of the SMEs involved.

3.2 RESEARCH FOCUS

Coherently with the purpose of the GAP, intermediation was studied as a process, rather than as the role played by an organization (or more) to facilitate collaboration of a firm with multiple actors relevant in its innovation process. As such, we assessed three types of impact that the GAP's intermediation process could generate, each with a different time horizon (from immediate to medium-long term). In so doing we also identified metrics for each stage in our framework.

Our sample suffers from a bias due to the two stages selection process the companies had to go through (companies are more innovative and own more organizational capital than average). Nevertheless our analysis includes both companies that had not started foreign investments before participation to GAP and firms that already had international operations before GAP operations.

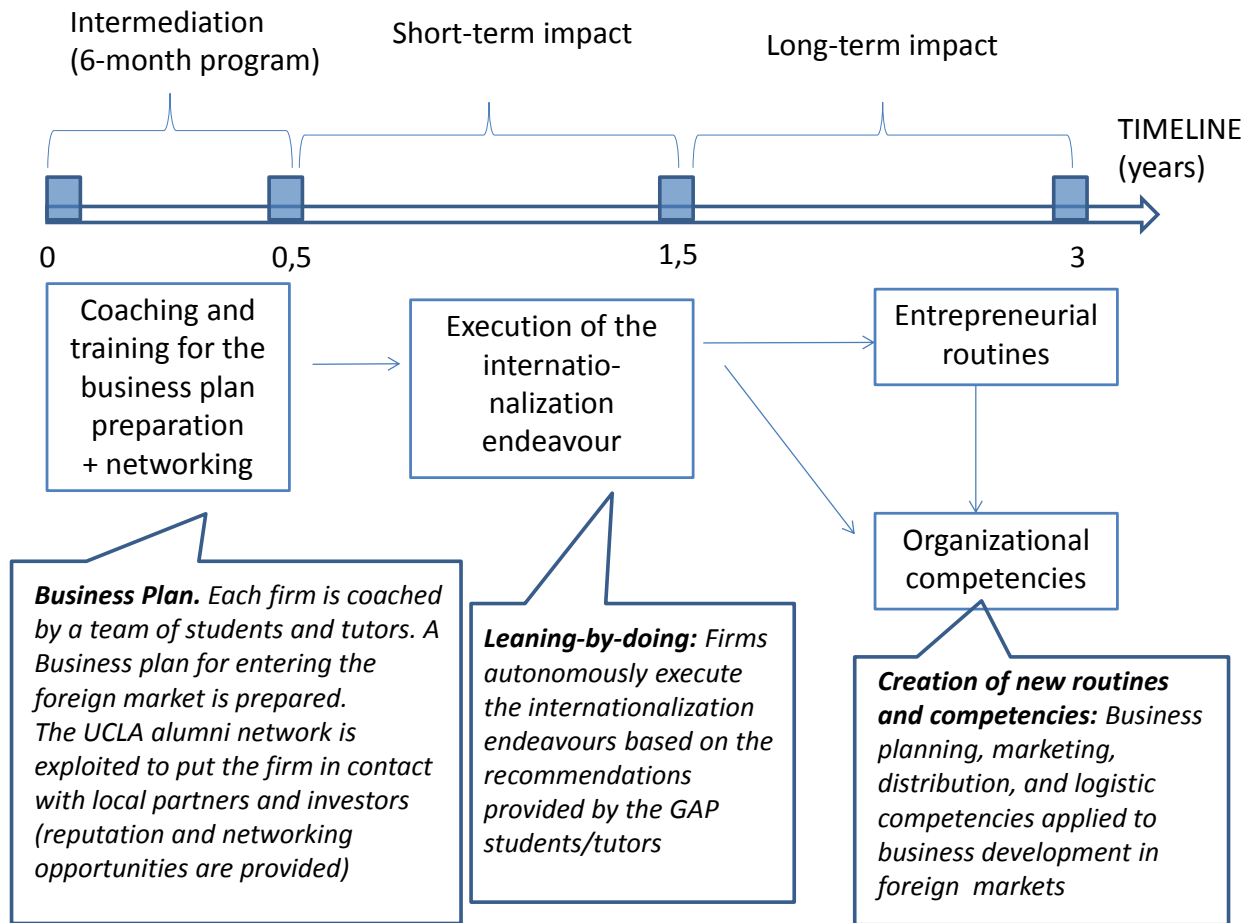


Figure 1. Conceptual framework of the benefits of the GAP intermediation process

- i) the effectiveness of the program in providing the involved SMEs with market research, networking opportunities, recognition of commercial opportunities, reputation, and design of a strategy and a business plan for entering a foreign market;
- ii) the development of managerial competencies required to undertake the endeavour of entry into a foreign market;
- iii) the development within the organization of new routines and organizational competencies that are applied on a regular base in analysing markets and competition in global markets.

3.3 RESEARCH DESIGN

The research followed a two-stage process. In a first stage, we interviewed (a) managers and owners of the companies selected for the case studies and (b) UCLA professors that acted as team mentors. Furthermore, one of the author had been participating in the GAP program since 2003 in selecting Italian companies and in coaching their executives during the entire program.

Interviews with firms' managers and GAP tutors – along with the first-hand involvement in the GAP program for one of the authors - allowed to operationalize the constructs related to the impact of the intermediation process at the company level. The focus was thus on the “what”, namely on understanding the type of impact exerted by the intermediation process on the internationalization strategies and on the creation of new routines and competencies.

The second stage of the research process followed a concurrent nested model (Creswell, 2003), during which both quantitative and qualitative data were collected simultaneously. Specifically, a structured questionnaire was developed and used to assess both the short-term and the long-term impact of the GAP program in each company. The short-term impact was referred to the support given by UCLA teams and tutors during the six month program and to the firms' capacity to put into action the recommendations received during the program in the following year. The long-term impact was analysed by referring to changes that took place in the company three years after the GAP participation. This approach implies that the long term impact could be observed only for 13 companies out of 24 (the ones that took part to the program before 2010).

Data collection through the questionnaire served to use quantitative methodology to observe aggregate relationships across firms (on the phenomena linking the different types of impact to firm's ex-ante characteristics). Such relationships were explored using the summary statistics related to OLS regression models. Thus, regression models and the related summary statistics supported the cross-case search for patterns, which

made it possible to observe the relationships among more than 2 constructs per time. In other words, we could build cross-case search for patterns by extending the classical 2X2 tables that research based on case studies often use to compare several categories at once (Eisenhardt, 1989).

Concurrently to the analysis of the quantitative data, interviews with managers and owners of firms allowed a focus on understanding the dynamics present within each case following a replication logic. In other words, qualitative data helped to understand the “how” and the “why” certain types of impact of the intermediation process were observed in some companies (Eisenhardt, 1989). Thus, the qualitative analysis generated an understanding of the dynamics underlying the relationships that became evident through the quantitative analysis.

3.4 *THE SAMPLE*

In case study research each case is analogous to an experiment that is used to refine and extend a certain theory. Thus, in this study each firm is analogous to a non-random experiment. The 24 cases thus represented multiple experiments that were all subject to the same treatment, the GAP program. Those experiments were non-random, as each firm was selected for the GAP program by the Turin Chamber of Commerce and the Anderson faculty, based on their potential for entering a foreign market. Selection criteria include characteristics of the management and the potential of the focal product for being sold on foreign markets. In most of the cases, products have been designed according to very focused R&D activities undertaken in Italy on the basis of technical knowledge that was very idiosyncratic and specific to some application domains that were part of entrepreneurs work experience and that represent industrial niche worldwide. Some examples are given by products like:

- coolants filtration systems, swarfs conveying and treatment (specific of some niches of the metal working industry)
- machine tools for gears machining (specific of a niche in the automotive supply chain)
- data management software developed for Italian banks to comply with some European Union obligations for reporting & reconciliations.

We run interviews with the owners and the managers that took part to the program. The firms in the sample are very different, but all of them reached a stage of development that “obliged” them to look at international markets for growing.

The 24 firms belong to medium or hi-tech industries: 10 to mechanical industries, 5 to energy / cleantech, 7 to ICT, 2 to pharma. The first selection round was jointly accomplished by the local Chambers of Commerce and some professors of a technical university. The 24 firms have been selected among 42 that joined the program between 2007 and 2012; they had an average age of 26 years at the time of participation to the

GAP program. Six firms in this sample were start-ups that had at least completed round A investments with venture capital funds. All the 24 firms are owned by founders (10 were fully owned by a family), and 9 out of 24 have managers (others than the entrepreneur) with significant decision-making power. The size of the firms studied ranged from 9 to 420 employees, with an average number of employees equal to 90. Table 1 summarizes data about size and growth of SMEs in the sample, showing that most of these firms have been able to manage the prolonged recession of the Italian economy.

	Data at year of GAP participation	Data at December 2012
Turnover (average value)	13.8 M€	14.4 M€
Turnover (median value)	4 M€	5 M€
Turnover (std. deviation)	16.7 M€	18.2 M€
Employees (FTE, average)	90	95
Employees (FTE, median value)	37	39
Employees (std. deviation)	104	107

Table 1. Sample characteristics

Out of 24, 17 companies already had foreign sales and/or branches, and owned therefore experience about entering foreign markets, but it had happened years before ad the result of isolated opportunities rather than of a codified process. In any case all of them participated to the GAP since their competencies were not sufficient to analyse new market opportunities created by their R&D efforts. In the three years following the program, 21 out of 24 firms implemented (entirely or partially) the recommendations coming from the GAP team and modified their international sale strategy; 6 companies (out of the seven that had no international sales based before the program) started selling abroad by using export intermediaries.

4. FINDINGS

The discussion of findings follows the conceptual framework about GAP intermediation process presented in figure 1.

4.1 *DISENTANGLING THE IMPACT OF THE INTERMEDIATION PROCESS*

Interviews with UCLA Faculty, Chamber of Commerce and entrepreneurs involved in the program contributed to operationalize the different types of impact, according to their time frame. We also used as reference a previous study conducted by Dalziel and Parjanen (2011).

We found that, despite the homogeneous selection criteria and working method, the impact of the intermediation process was different across companies.

In terms of immediate impact (the six months of team work plus the following 3-6 months), the large majority of companies ranked as the most important impact the capability to build new firm-specific market knowledge by a process of primary market research. Such capability requires organizational routines focused on collecting market information that are very specific to the value proposition and products of a company. At the same time, only three companies (all selling ICT product and services) succeeded to establish new international sales in the 6 months following the GAP

The large majority of firms acknowledged as an important short-term impact the content of the executive education provided by UCLA. For such companies this pattern of “applied” executive education went hand-in-hand with the opportunity to develop a tacit experience in doing business and managing relationships with potential export intermediaries owning a different business culture. For the individual perspective of entrepreneurs and managers involved, the acquisition of this tacit know how allowed to enrich and diversify their human capital along a direction that was highly complementary to the technology-specific knowledge that lead to the development of their products.

Most of the companies also acknowledged as immediate impact a reduced “liability of newness” related to entering a foreign market; this happened thanks to the reputation and the social capital that UCLA could indirectly provide to these companies.

Although the limited number of case studies makes it very difficult to derive general concepts, they provided some significant evidence about two typical weaknesses of SMEs approaching foreign markets. First, SMEs lack competencies needed to apply technical knowledge about their product to sense new potential markets, to decide which segment or niche could be more profitable, to select sales channel and to establish adequate pricing mechanisms; secondo, they lack of social capital and such situation blocks any attempt to establish business relationship abroad.

The following examples give details about general issues emerged during or in few months after the end of the program:

- The innovation intermediary provided most of the firms with the method needed to explore market opportunities that were beyond its environmental scanning capacity, overcoming issues related to “local search”. Specifically, for one of these firms, the core technology was induction heating, and the structured market analysis found new opportunities for using it to manufacture furnaces dedicated to the production of large silicon ingots. Such technology allows ingots directional solidification with efficiency and quality much higher than existing production processes), and today (5 years after program participation) it is sold worldwide. Another company (producing cash recycler) used such method to re-segment its market according to results of primary research,

changing pricing policies and targeted customers; now it has signed a millionaire contract with a large American bank.

- In other cases, the GAP program allowed to get market knowledge very specific to company product and that was fundamental for making companies aware of the existence of critical technological constraints. In so doing, these companies avoided to go through (a) a “trial and error” approach in exploring their market opportunity and (b) the consequent financial losses. For example, a company decided not to enter the USA market when the primary research highlighted that it was not possible to sell its product in the target market due to the radical different technological infrastructure and regulation existing.
- We observed also effects of pricing methods: for example, a company selling high precision equipment (having technological performances and quality much higher than competitors) learnt that its decision to lower prices in order to gain market share had brought to lower sales since it would have been perceived by customers as the result of cost cut and of a lower quality;
- The intermediary also helped identify the “beachhead market” as the result of a formal process; for example some companies have been able to successfully identify potential customers perfectly matching company’s value proposition and to open a branch in the USA in the following 2 years.
- The learning process has been particularly evident in the ability of raising new funds or becoming the target for acquisition (maybe due to a better strategic positioning). By July 2013 all the companies that participated to the program all over its entire life have been able to raise in total about 200 million USD of equity investments; Italian companies alone have raised about 10 million and 2 have been acquired by competitors.
- Finally, GAP participation supports building of international reputation and networking needed to sign export agreement.: Both these resources come from the innovation intermediary. Reputation is due to the fact that any company in the program has been subject to a formal selection process driven by UCLA professors. Networking capabilities are created by the GAP team by accessing the entire UCLA ecosystem.

At a more general level there are other relevant results that hold true for the majority of the 24 firms examined through case studies.

- The innovation intermediary is “cost effective”, since it reduces search and transaction costs. The GAP companies benefitted indeed from a low cost access to strategic information and other complementary resources (reputation, network of potential partners, access to new sales channels).
- The intermediary also have been able to leverage on its internal resources to create value: on average, at the end of the program participants affirmed that the cost of a similar consulting service on the market would have been of around 100,000 euro but impact of such alternative consulting service would have been

inferior to the one of GAP lower due to the high specificity of the learning process and of the search activities that typically consultancy firms cannot provide, especially when they work on larger industries and on application of standardized “recipes”.

- Entrepreneurs and managers agreed about the fact that the program made it possible for them to acquire the skills needed for analysing value proposition and new markets, creating partnership and strategizing. They also affirm that they grounded the medium term growth plans on such skills.
- The information provided from the intermediary allowed to remove the main obstacle to strategic planning activities. Case studies highlighted that in most of the cases the decision to delay entry in a new market was due to fact that the scarcity of available information would have obliged SMEs’ managers to allocate their (scarce) time to explore the market opportunities related to the foreign market..
- The intermediary favoured the discussion in favour of the introduction of more formalized methods and routines. In larger companies employing experienced managers, we observed a relatively lower “immediate enthusiasm” but a significantly higher attention on how to transform what had been learnt into organizational routines. On the other side, in smaller companies, entrepreneurs were immediately enthusiast about the new acquired skills and the experience they had, and modified immediately their decision processes but with marginal effects in terms of introduction of new routines.

Results emerged from the analysis of the questionnaires tend to confirm such findings. More specifically, Table 2 summarizes the main short-term effects. In the short term the program allowed firms on one side to acquire market knowledge, and on the other allowed managers to acquire new skills and firms to accumulate complementary assets like reputation and relational capital.

Table 3 contains details about the importance of information, advices, feedbacks received by the UCLA students and Faculty staff for the improvement of the entry strategy into the new market. Also tge analysis on the intermediate impact shows that managers have been able to complement their technical view of the product with skills regarding (a) the degree of fit between products and new market segments and (b) how product value can be delivered to new customers that have different needs and attitudes respect to the ones in the market where the product had been previously commercialized.

Type of impact	Importance (1-5)
Market knowledge obtained through “Primary Research” activities	3.75
Executive education (formal and on-the-job)	3.67
Know-how for doing business with foreign partners having a different business culture	3.46
Reputation for searching for potential partners	3.00
Business linkages through the network of UCLA alumni and Faculty	2.96

1: low importance; 5: high importance

Table 2 – Ranking of short terms effects

Importance of acquired knowledge	Importance (1-5)
Definition of the product value proposition	3.38
Definition of a strategic roadmap to enter a foreign market	3.29
Revision of the overall firm's business strategy	3.17
Market segmentation	3.08
Selection of distribution channels in new market segments	3.08
Revision of the product features	3.09
Development of new business connections abroad	3.00
Financial planning of the foreign direct investment	2.67

1: low importance; 5: high importance

Table 3. Short term impact

Table 4 gives some details about what firms have learnt at organizational level in the medium term. In most of the cases they introduced new methods and routines to analyse new markets; the fact that they tend to use such methods occasionally is coherent with the frequency of such decisions in SMEs. What is relevant is that such routines did not exist before joining the GAP.

Type / focus of the new routines	Level of use (1-4)
New methods to analyse and review firm's business model and strategy	2.62
New methods to analyse and develop distribution channels abroad	2.31
New methods for capital budgeting for internationalization endeavours	2.23
New methods and approaches for market research (primary, secondary, etc.)	2.15

1. not used; 2: occasionally; 3: frequently; 4: systematically

Table 4. Level of use of new formalized routines accumulated during the GAP

4.2 *EXPLORING HOW THE INTERMEDIATION PROCESS LEADS TO LONG-TERM IMPACT*

To search for cross-cases patterns OLS regression analyses were computed in order to test whether the presence of a short-term and a long-term impact was related to SMEs characteristics like size and age and to the management team that was involved in the GAP program. Three key findings emerged from such analysis, as summarized in table 5.

First, the firms that recognized a greater efficacy in the role of the intermediation process with regard to the acquisition of market knowledge, skills on market research methods, and networking opportunities were the older and smaller ones, in most of the cases controlled by the entrepreneur and founder)and without external managers (and as such with a less diversified management team in terms of education background and previous professional experience). This result is coherent with the fact that firms exhibiting these traits are more rigid in their endeavours to search for new markets due to their tendency to replicate routines that proved to be successful in the past. Thus, for these firms the marginal impact of the program on the short term on their market knowledge was more salient than for firms having a more structured managerial approach.

Second, the few firms that reported that the program gave a key contribution for developing new entrepreneurial routines shared some common traits. They were relatively smaller and older, but with a management team that was larger in size and more diversified in terms of education background and competencies. In this case the GAP program made it possible to recombine in new ways the existing managerial competencies to create new routines.

Third, non-surprisingly firms that declared to get the most from the program in terms of efficacy and short-term impact were more likely to start the accumulation of new entrepreneurial routines applicable in internationalization endeavours.

In other words, the GAP program had a more visible effect on the competencies of those firms that structurally had more core rigidities in creating skills and routines aimed at analysing, selecting and entering new markets, but whose management team and characteristics was potentially readier for these investments and had a greater intentionality to exploit the experience stemming from the GAP program to develop new formalized routines.

This evidence suggests the existence of two systematic patterns in the impact of the intermediation process, which seems correlated to the characteristics of management approaches in place within the recipient of the intermediation. More specifically, as table 6 shows, these two patterns are correlated with their being entrepreneurial vs. managerial. Within the entrepreneurial firms led by owners, decision-making power is highly centralized and concentrated in the owner or few senior managers. The learning process triggered by the innovation intermediary was mainly at individual level, was localized on the management team) and did not lead to any visible learning at organizational level. In managerial firms the learning processes enacted by GAP involved a broader management team and brought to new routines and competencies.

Respect to entrepreneurial firms, the managerial companies could also rely on broader absorptive capacities with regard to internationalization endeavours, given some sort of experience in the attempts of entering foreign markets before the GAP program.

Firms' ex ante characteristics	Type of impact		
	Efficacy of the program (immediate impact)	Efficacy in executing the internationalization endeavour (short-term impact)	Creation of new entrepreneurial routines (medium - long term impact)
Characteristics of the management team	---	---	---
Presence of external managers (other than the founders / entrepreneurs)	<i>Negative effect</i>	---	---
Diversification in the education background of the management team (entrepreneurs or managers)	<i>Negative effect</i>	---	---
Human capital of the management team (% of graduates)	---	<i>Negative effect</i>	<i>Positive effect</i>
Size of the management team	---	---	<i>Positive effect</i>
Firm structural characteristics			
Age (firms aged over 20 years)	<i>Positive effect</i>	-----	<i>Positive effect</i>
Size (firms with less than 50 employees)	<i>Negative effect</i>		<i>Negative effect</i>
Program Impact			
Efficacy of the program		<i>Positive effect</i>	<i>Positive effect</i>
Efficacy in the post program execution			<i>Positive effect</i>

Coefficients from OLS regression models and summary statistics are not reported to conserve space, but they are available upon request to the authors.

Table 5. Cross-case patterns explaining where the intermediation impact was more visible (results from OLS regression models)

Impact	“Entrepreneurial” firms	“Managerial” firms
Impact on existing managerial skills	Basic skills favour a faster learning and an immediate impact	Existing skills often partially include topics covered by the GAP, and this make immediate impact less evident. At the same time the available skills make it easier to learn and generalize the new knowledge and method within the organization.
Effect of learning during the program	Immediate (and enthusiastic) on skills owned by entrepreneurs and on its decision making. Side effects on the skills of collaborators in terms of ability to collect information and to analyse a problem by robust methods	Delayed since managers tend to focus their attention on how to transform the new methods into stable routines that involve the entire organization (coherent with the larger size of such firms)
Benefits of learning	A more structured decision process with more robust outcomes favours “go” decisions. Decisions of entry are not very frequent (due to the smaller size of these firms) and it is reasonable not to create specific entrepreneurial routines.	Repeatable and controllable routines that make it possible to apply the same methods to many similar situation. The presence of more standardized products – along with absorptive capacities and previous experience in internationalization process - support this process of organizational learning
Matching between technological and market knowledge.	Accomplished by the entrepreneur, highly idiosyncratic, based on trial and error patterns	Accomplished by the organization, more codified and less idiosyncratic, based on formal methods and routines.

Table 6 - Nature of the learning process induced by the intermediary: entrepreneurial vs. managerial firms

5 CONCLUDING REMARKS

In this article we analysed the role that innovation intermediaries play in sustaining SMEs in creating an international sales base, by providing them with resources and a customized learning process that lower the costs and the risks of accessing international markets. .

By analysing the role of such intermediaries we identified the following key findings that we believe could be investigated and generalized by future researches.

- i) In the short term, innovation intermediaries favour organizational learning process by helping them access market knowledge that is highly idiosyncratic to the firm's product and strategy. As such, this knowledge is tacit and is not available on the market in forms of analysts' reports and is the result of a firm-specific effort of the intermediary, which can rely on state-of-the-art knowledge on market analysis localized in teams of employed MBA students and faculty staff at the UCLA.
- ii) Innovation intermediaries are able to create customized program where SMEs can learn and internalize "best practices" related to strategy analysis and market positioning in a learning-by-doing process, and to adapt it to very idiosyncratic situations. Therefore, the role of intermediaries goes beyond the consultancy and the pure access to complementary resources needed to sustain international growth, and efficiently transfer to them knowledge and capabilities that cannot be traded on a market.
- iii) The learning process allows firms to exploit in the medium-term the potential of their products on international markets, by providing a formal method to identify the correct segments and sales channels needed to deliver value to final customers.
- iv) The learning processes strongly depends on size and organizational capabilities, as well as on the skills of the entrepreneurs. Smaller SMEs run by entrepreneurs tend to internalize the new practices into entrepreneurs, and effects become visible in terms of higher quality of decision making. Larger SMES, run by managers, tend to show a delay in their learning due to the decision to embed the new practices into organizational routines, since they expect a more frequent use and the number of involved people in the learning process is higher.
- v) The role of intermediaries is important also for the SMEs that already have an international sales base, confirming the fact that also these firms need to create internal capabilities to systematically replicate what in most of the cases was the result of a previous isolated and "non-repeatable" initiative of internationalization.

These results point out opportunities provided from innovation intermediaries to SMEs to exploit the results of their R&D activities on international markets.. At the same time these results highlight that under the framework discussed in this article, the main constraint to international growth of SMEs is not the rationing of financial resources but

the lack of skills and routines required to analyse and entry new markets. The accumulation of such capabilities is a knowledge intensive process that requires time and is subject to time compression diseconomies; it also needs intermediaries that own international reputation and are able to teach how effectively transfer state of the art methods in business routines.

Finally, in our opinion such results open new questions about the most efficient and effective policies for sustaining growth of innovative SMEs in international markets. SMEs can capitalize intermediation programs such as the GAP only if they have products that can be sold in other countries and an above average quality of management. The learning process triggered by intermediation processes such as the one of GAP could be hardly possible or simply less effective for SMEs whose product are not as ready for international markets and whose quality of entrepreneurs / managers is not sufficient to learn and apply what taught by the innovation intermediary.

This article has limitations. First, it analyses the role of UCLA as innovation intermediary by taking into account only Italian firms; an extension of the analysis to small firms from other countries could increase the robustness of the results. Second, the intermediary impacts considered in this study could be affected by other non-observable variables. With this regard, respect to a quantitative approach based on surveys, the use of a case study methodology could allow a more comprehensive analysis on the firms' contextual variables that could be relevant to their learning process.

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