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Theme D: Absorptive Capacity and Learning Strategies

ABSORPTIVE CAPACITY AND KNOWLEDGE TRANSFER BETWEEN VENTURE CAPITAL FIRMS AND THEIR PORTFOLIO COMPANIES

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A brief abstract (100 words)

The ability to accumulate new knowledge constitutes a driving force in the development and growth of young firms. Through interorganizational relationships firms can get access to external knowledge and combine it with existing knowledge. In this paper we focus on the relationship between the Venture Capital firm and its Portfolio Companies. Our premise is that the more absorptive capacity both of the partners develop, the more likely it is that knowledge is transferred, assimilated and utilised as a basis of competitive advantage for both partners within the relationship. Furthermore knowledge transfer depends upon the motivation of the Venture Capital firm to invest resources in its portfolio companies. Through learning processes this motivation stimulates the development of absorptive capacity.

A few keywords: Absorptive Capacity, Knowledge Transfer, Venture Capital, Entrepreneurial Network, Motivation

JEL - code(s): D21, D23, J24, L21, M13

Introduction: The structure of the problem

The improvement of information and communication technologies within the last decade has fostered the acquisition, development and sharing of new knowledge. This development is becoming increasingly important for business organizations in a competitive environment. Consequently a precise and structured information management could be expected. Davenport and Prusak (1998) note though that spontaneous and unstructured transfers of knowledge routinely take place across organizational and geographical boundaries, independently from the management of the process. The question is under which conditions this knowledge transfer is effective and can be considered a source of competitive advantage (Zahra/George 2002). The exploration of these conditions is one of the main topics of this essay.

The effectiveness of cross-border transfer of organizational knowledge is generally facilitated by the capabilities of the transferring and the recipient organizations to use appropriate institutional mechanisms to accomplish such transfers. Examples of these mechanisms are licensing agreements, patent-related intellectual property rights (Bhagat/Kedia/Harveston/Triandis 2002). If the existence of such mechanisms is the first condition to facilitate knowledge transfer, an even more important condition for the recipient organization is to possess appropriate absorptive capacity in order to assimilate and utilise such knowledge (Cohen/Levinthal 1990, Leonard 1995, Dyer/Singh 1998). In particular, the ability to accumulate new knowledge constitutes a driving force in the development and growth of young firms (Penrose 1959, Spender 1996, Grant 1996). Knowledge acquisition opens new “productive opportunities” (Penrose 1959) and enhances the firm’s ability to exploit these opportunities (Yli-Renko/Autio/Sapienza 2000). As young firms usually are resource constrained their development and growth is especially dependent upon innovatively combining their own specific knowledge with that of external partners (McDougall/Shane/Oviatt 1994, Yli-Renko/Autio/Sapienza 2000). Through interorganizational relationships firms can get access to external knowledge and combine it with existing knowledge (Yli-Renko/Autio/Sapienza 2000). Such a potential partner could be a Venture Capital firm.

In this paper we therefore focus on the relationship between the Venture Capital firm and its Portfolio Companies. Our premise is that the more absorptive capacity both of the partners develop, the more likely it is that knowledge is transferred, assimilated and utilised as a basis of competitive advantage for both partners within the relationship. Furthermore knowledge transfer depends upon the motivation of the Venture Capital firm to invest tangible and intangible resources in its portfolio companies and the motivation of the young firms to cooperate with their investors. This motivation stimulates the development of absorptive capacity. Prerequisites to enhance both motivation and absorptive capacity are the existence of a similar knowledge base, experience in the relevant field, trust in the truth of exchanged information between the partners. Trust may not mean that only the partners’ knowledge in such an entrepreneurial network is used as information source.

After the definition of absorptive capacity we will develop some propositions to explain and to design the concept within the relationship existing between VC firm and its Portfolio Companies. Then, as an example of a process theory, Porter and Lawler's motivational theory is presented in order to describe the motives at the very base of knowledge transfer between VC firms and its financed new ventures and gain propositions regarding this relation. The propositions derived from previously published findings and theoretical concepts are then heuristically tested with two case studies. As a result the paper presents a theoretical approach for the applicability of general absorptive capacity models to explain relations between start ups and Venture Capital firms: after these models have been adapted they can foster the effectiveness of these relations.

Absorptive Capacity and the Entrepreneurial Network

Absorptive capacity is defined as the ability to assimilate and replicate new knowledge gained from external sources (Cohen/Levinthal 1990). This ability is one of the important bases in entrepreneurial networks. Furthermore it influences the success of the partners within this network, that is start up companies and Venture Capital firms.

The aim of Venture Capital firms is to invest in a lot of different new ventures, at least one of which should be successful. Apart from financing the new company, venture capital firms usually bring in their experience in the field and a network of relations – social capital. Such a network is extremely useful for quickly finding the professional resources and competencies a new venture needs to grow. Additionally it can provide a start-up with reputation. This kind of support is a mixture of financial and social capital and is called "smart money": it originates from knowledge transfer within the relationship network established between venture capital firms, their portfolio companies and their other partners – for example lawyers, other venture capital firms, business angels. The cooperation between the above mentioned partners can be named as an entrepreneurial network and constitutes a learning alliance. The effectiveness of knowledge transfer within the entrepreneurial network depends upon the absorptive capacity of each partner in the network. The new knowledge that venture capital firms can usefully transfer to their portfolio companies depends mostly on the VCs' prior managerial and technical experience (1) in the sector where the new venture is emerging, (2) in the type of product or service which the new venture is developing and generally (3) in supporting new ventures. In addition, we assume that knowledge transfer between VC firms and their partners is negatively influenced by the presence of different cultural patterns within the entrepreneurial network. Cultural influences can further explain why VC firms are "local". Our hypothesis is that an entrepreneurial network can enhance more innovations and achieve a better standard of performance if it is characterized by its members' high absorptive capacity and similar cultural patterns: both facilitate understanding and allow access to and

application of the new knowledge being transferred within the entrepreneurial network. In this paper we will concentrate only on two most important parties in the learning alliance, that is the VC firm and its Portfolio Companies.

The concept of absorptive Capacity

Cohen and Levinthal (1990) view absorptive capacity as a firm-level construct, an ability the firm develops over time by accumulating a relevant base of knowledge and which therefore contributes to innovation. The authors argue that organizational units which possess relevant prior knowledge are likely to have a better understanding of new technology that can generate new ideas and develop new products. This strictly depends on an individual's frame of reference which enables the individual to learn. Organizational units with a high level of absorptive capacity are likely to harness new knowledge from other units to help their innovative activities. Without such capacity organizational units cannot learn or transfer knowledge from one unit to another (Cohen/Levinthal 1990, Tsai 2001). Absorptive capacity is supported (1) by systematic knowledge accumulation and (2) by a prolonged process of investment: An organizational unit's absorptive capacity for learning depends on its endowment of relevant technology-based capabilities (Mowery/Oxley/Silverman 1996). R&D investment is therefore a necessary condition for the creation of absorptive capacity. Organizational units with a high level of absorptive capacity and aware of the above mentioned condition invest more in their own R&D and have the ability to produce more innovations (Nicholls-Nixon 1993, Tsai 2001). As a result we can say that permanent learning processes are necessary conditions to develop absorptive capacity.

Absorptive capacity involves not only the ability to assimilate new external knowledge but also the ability to apply such knowledge to commercial ends and thus create the opportunity for profit (Cohen/Levinthal 1990, Tsai 2001). As a consequence, the development of absorptive capacity is an interesting strategy for reducing managerial and technical risk. However, knowledge generated by individual organizations does not come to bear on an organization independently (Crossan/Lane/White1999). Knowledge is socially constructed and organizational learning involves a complex social process in which different units interact with each other (Berger/Luckmann 1966, Huber 1991). As we are interested in absorptive capacity on an interorganizational level we shift the unit of analysis of the Cohen and Levinthal's construct from the firm to the learning alliance (the learning dyad – Lane/Lubatkin 1998) existing between Venture Capital firm and its Portfolio Companies. Learning alliances can be seen as networks which promote social learning and therefore make linked organizations more astute collectively than they are individually (Kraatz 1998).

We argue with Lane and Lubatkin (1998) that the ability of a firm to learn from another is jointly determined by the relative characteristics of the partners in the learning alliance. According to Lane and Lubatkin a firm's absorptive capacity, that is its ability to value,

assimilate and apply new knowledge from a learning alliance partner depends upon (a) the specified type of new knowledge offered by the partner, (b) the similarity between the partner firms' organizational practices/structures and (c) one firm's familiarity with the partner's set of organizational problems (Lane/Lubatkin 1998). An individual's learning is greater when the new knowledge to be assimilated is related to the individual's existing knowledge structure (Ellis 1965, Estes 1970, Bower/Hilgard 1981, Grant 1996). Similarly, in order to recognise and value new knowledge a firm's prior scientific or technological knowledge must possess some amount of prior knowledge basic to the new knowledge. In this way prior knowledge will be relevant enough to facilitate understanding (Cohen/Levinthal 1990) and therefore learning processes. A firm's ability to internalize knowledge is greater when the learning alliance partners' knowledge-processing systems – or the more readily observable organizational practices – are similar. Finally the more familiar a firm is with the types of projects and problems that the partner handles, the more readily it will be able to commercially apply new knowledge acquired from the partner (Lane/Lubatkin 1998). As absorptive capacity is dynamic and should be developed, we add that its level depends also upon the partner firms' motivation to foster the learning alliance. Through learning alliances firms can speed capability development and minimize their exposure to technological and environmental uncertainties by acquiring and exploiting knowledge developed by the alliance partners (Grant/Baden-Fuller 1995, Lechner 2001).

If we analyse the learning alliance between the Venture Capital firm and its Portfolio Companies according to the above theoretical assumptions, we can identically state that also in such a specific relationship the absorptive capacity of both partners improves with

(1) increasing similarity of the learning alliance partners' knowledge base,
(2) increasing familiarity of the partners with the problems and projects handled by the other partners and
(3) the motivation to foster the learning alliance and knowledge transfer between the partners.

We don't argue that absorptive capacity improves the more similar organizational practices are within the learning alliance. This is because in our opinion the organizational structure and practices of the VC firm and its Portfolio Companies are not comparable.

As a first result we can formulate the following three propositions:

Proposition 1a*: The more similar the knowledge base of the Venture Capital firm and its Portfolio Companies – the alliance partners –, the higher the level of their absorptive capacity.*

Proposition 1b*: The more familiar the alliance partners are with the problems and projects handled by the other partners, the higher the level of their absorptive capacity.*

Proposition 1c*: The more motivated the alliance partners are to foster learning and knowledge transfer within the alliance, the higher the level of their absorptive capacity.*

Absorptive Capacity and Motivation Theory

There is a general agreement on defining behaviour as a product of the interaction between person and situation. The same can be said for motivation, the process at the very base of behaviour. In this sense motivation at work is defined as a series of forces originating both from inside and outside of a person in order to activate a work oriented behaviour and to determine its form, direction, strength and duration (Weinert 1992, Heckhausen 1989). According to Bühner (1997) motives together with rewards, satisfaction and performance determine motivation. Their interaction generates mechanisms able to activate the motives needed to guide behaviour towards the firm's objectives. Motives originate from individual needs. Rewards or incentives can be introduced to activate motives and give them the desired direction. Motives generate motivation which in turn leads to performance and satisfaction. A famous example of a motivation theory, which can be linked to the concept of absorptive capacity, is given by Porter and Lawler.

Porter and Lawler's (1968) motivation theory bases on the fact that performance is followed by a reward, later evaluated by the satisfaction that the reward itself has generated. Performance represents the result of a working effort. Motivation to work depends on that effort as well as on the value of rewards and on the probability of their entrance. The variables included in the theory are the following:

- Value of rewards: subjective and depends on the situation in which a person finds him/herself. It also depends upon the satisfaction of needs that a reward produces.
- There is a subjective probability of a reward as consequence of an effort towards the desired behaviour. This probability originates from the expectancy that rewards depend on performance and that performance comes out of efforts.
- The effort represents the willingness of a person to execute a task and therefore to give a certain performance. Motivation is generated from the combination of the value and the probability of rewards after an effort. For Porter and Lawler the effort and not performance is the central variable of the process.
- Abilities and traits are seen as a constant input that contributes to performance together with the effort.

- Role perception helps to give direction to the effort in order to reach performance and success.

- Performance is measured by the role reached through a certain behaviour. How successful an individual executes his/her tasks therefore depends on effort, abilities and role perception.

- An individual expects rewards in order to satisfy his/her needs. Rewards can be intrinsic or extrinsic, that is the result of thinking or given by a third party.

- The perception of the equity of rewards depends on individual expectations.

- Satisfaction originates from a comparison between individual expectations on and realized rewards.

The relationship between the different variables can be seen in figure 1.

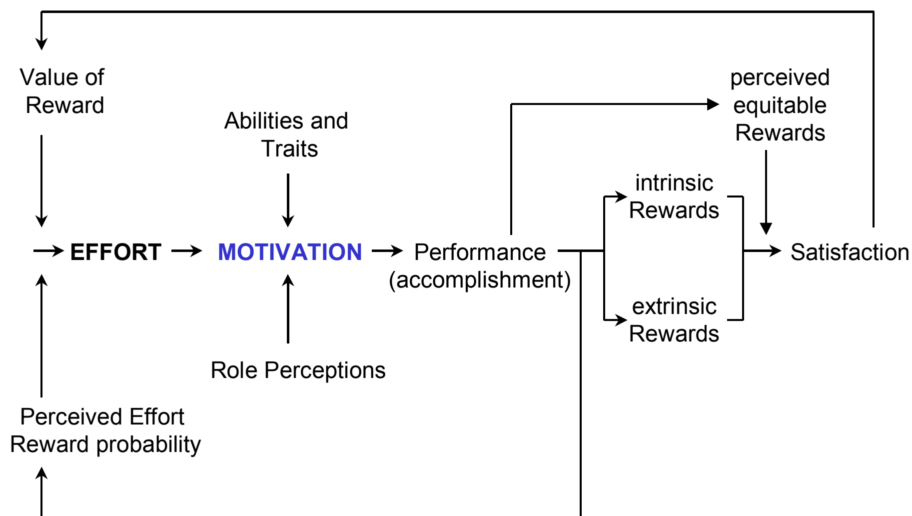

Figure 1: Porter and Lawler's motivation theory (1968)

According to Porter and Lawler motivation theoretically increases if effort rises. This function can be influenced by qualification and role perception as intervening variables (Vroom 1964). The relationship between performance and rewards is not very clear. On one hand it sets the premise of being able to measure performance and efforts. On the other hand rewards expectations depend on performance too, so that satisfaction is a multi-dependent variable. The feedback process between satisfaction and value as well as probability of rewards implies a learning process: the more effort a partner puts in executing a task, the more he/she will be rewarded and vice-versa (Porter/Lawler 1968, Drumm 2000).

If we apply this theory to the relationship between Venture Capital Firm and its Portfolio Companies we can deduce interesting assumptions. The task to be executed here would be knowledge transfer. From the Venture Capital (VC) firm perspective, its effort in transferring knowledge to the Portfolio Companies (PC) depends on the value and the probability of the reward, which in this case is represented by the PC's success. This effort, together with abilities and role perception – if the VC firm thinks to have the appropriate abilities and is aware of the role it could play in helping the PC to have success –, determines the Venture Capital firm's motivation to transfer its relevant knowledge to the PC firm. Depending on the success of the knowledge transfer, which in turn depends on the relevance of the transferred knowledge and on the absorptive capacity of both partners, intrinsic and/or extrinsic rewards are generated: an intrinsic reward could be represented by a good relationship with the portfolio company which contributes to build social capital (Cohen/Fields 2000, Yli-Renko/Autio/Sapienza 2000), while the extrinsic reward is mainly constituted by the success of the PC. Both rewards lead to the satisfaction of the VC firm with its investment in knowledge transfer. The VC firm knows that if it uses the same strategy with another Portfolio Company under the same conditions – transfer of relevant knowledge to the PC, understanding of its role in the VC-PC relationship, absorptive capacity of both parties – the probability of another satisfying reward – success of the venture firm – increases. Porter and Lawler's motivation theory is based on intraorganizational work relationships. In order to apply it to the interorganizational relation existing between the Venture Capital firm and its Portfolio Companies we need to adapt the theory adding the concept of absorptive capacity. In figure 2 we combine the two theoretical concepts in order to specifically explain the development of absorptive capacity in the entrepreneurial network.

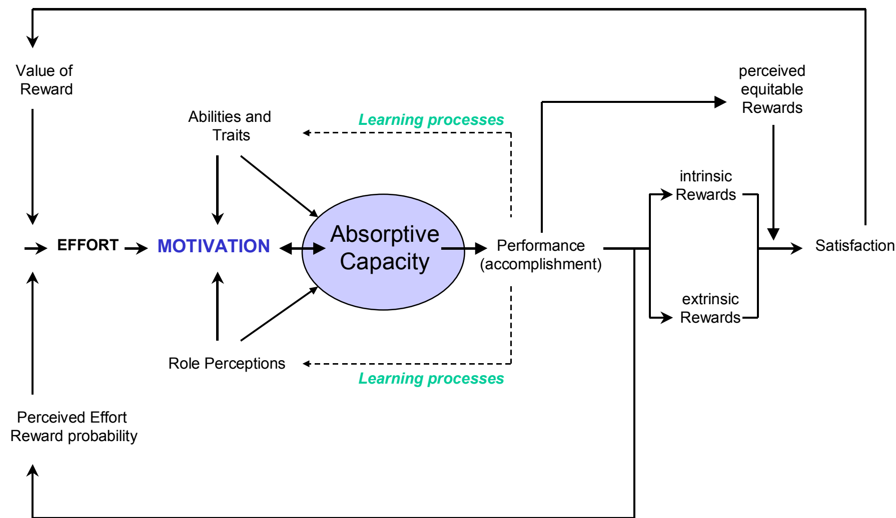

Figure 2:

The combination of Porter and Lawler's motivation theory with the concept of absorptive capacity

The process of developing absorptive capacity can now be defined more precisely. Absorptive capacity depends on motivation but also directly on relevant qualification and traits, as well as role perception. If between the VC firm and its PC there is similarity of knowledge base, similarity of organizational practices and familiarity with the handled projects then the capacity to value, assimilate and apply the transferred knowledge increases. As a consequence the performance outcome and therefore rewards and satisfaction improve too. Improved performance increases rewards probability, which in turn enhances effort and motivation to learn and transfer additional relevant knowledge. Furthermore performance stimulates learning processes. Performance is represented in our case by successful knowledge transfer. If knowledge has been assimilated and successfully applied by the Portfolio Company, as a consequence the VC firm is more motivated to help the Portfolio Company also in the future and therefore to foster the learning alliance. Learning processes improve the relevant abilities and the role perception of both partners. Improved abilities and role perception contribute finally to improve the absorptive capacity of both partners in the learning alliance, that is VC firm and PCs.

As a second result the following three propositions widen the propositions 1a, 1b and 1c:

Proposition 2a*: The higher the satisfaction of the VC firm with knowledge transfer in previously supported ventures, the higher its motivation to further knowledge transfer.*

Proposition 2b*: The higher the VC firm's perception and value of its future rewards (represented by the PCs' expected success, which increases with the similarity of conditions which success of previous PCs), the higher its motivation to further knowledge transfer within the learning alliance*

Proposition 2c*: The higher the VC firm's and PCs' absorptive capacity, the higher the VC firm's motivation to further knowledge transfer.*

As an intermediate important result we can state that (1) all partners in an entrepreneurial network should develop absorptive capacity; (2) investment risk and new ventures' failure can be reduced if VCs not only invest financial capital but also develop abilities and competencies to support their portfolio companies which are usually only typical of consultancy firms. These theoretical findings will be now empirically proved by the analysis of two case studies based on interviews and archival data. The results of our empirical test will be used to give further heuristic insights into the problem.

The case of Mondo Media

Description

The company was founded in 1988 by two founders and its main activity was the production of content for other companies. One of its earliest clients – the firm Intuit which produces a software called Quicken – asked the two founders for help with the graphic interface for the product. The project went well, so other projects came in and the company quickly became a graphics production studio. With the '90s the company started to work for the CD-ROM game business (game producers outsourced the graphics and animation work to Mondo Media), so Mondo Media became a real outsourcing provider.

Like a production studio Mondo Media has a very small core of full time employees (20) dedicated to sales, marketing, project management and operations. Of the creative people, only four are full-time (one CEO, one art director, one designer, one animator), the others are all freelancers (about 15 to 20). The majority of the production takes place during the

summer, as the CD-ROM games are released in October, that is before Christmas, which is the high sales season.

In 1998 the company decided to expand and produce its own products (cartoons, animated advertisements), so that the company would have produced not only the animation but also the writing and would have had its own trademark. To change strategy and turn from an outsourcing provider to an original "film" studio the company looked for venture capital. Venture capital was found and it was used to shift production towards original content. The product was basically constituted by flash animation for the Internet. It would have been sold to web portals and all the dot.coms that started their business in that period. This activity at the peak – between 1998 and 2000 – covered 99% of all the production.

Unfortunately most of the internet related start ups faded away, and together with them the market that Mondo Media was hoping to serve with its own products. Now the company is not profitable (while it was before 1998) and in order to survive it has gone back to its old activity of production. Mondo Media is seeking a solid production basis to provide a stable income and be able to grow later through the sale of original content again (which is something that any arts related activity aims to do).

The business model the firm used in the dot.com period was the following:
Mondo Media provided content (3 to 5 minutes of cartoons, short animated entertainment) to Yahoo for example, who in turn paid a monthly fee to have the content and also shared the revenues that came from the advertisements placed around the content. Unfortunately the advertisement revenues were not enough to sustain the company, that's why the business model didn't work.

The company's client list currently include Electronic Arts/Maxis, THQ, Sierra, Activision, and Viacom (MTV, VH1). Mondo Media is though working on a slate of projects that expand its production capabilities beyond gaming and into television and film. The business model is the traditional one where the price is based on margin bases: upon a budget Mondo Media checks how much the production is going to cost and then it marks it up. The customers own the cartoons, which are animated by Mondo Media (Interview with Alex Chu, Director of Business Affairs July 2002) .

Discussion

Mondo Media saw an opportunity in the growing Internet Economy to expand its activities and become an original production studio. The problem was that the company changed its business model abruptly instead of gradually. At the peaks the original production covered 99% of the company's activities. Therefore the risk faced was too great. Had Mondo Media chosen a gradual shift continuing its activity as outsourcing provider – and therefore not losing its focus - while producing original content at the same time – that is gradually diversifying its activities –, it would probably still be a profitable company. Anyway Mondo Media considers itself lucky because it has had an alternative, which is the "old" production activity upon which

it can rely to recover from the losses. Although the company thinks that venture capitalists do not really provide the value they claim to provide, Mondo Media also considers itself lucky to have met good venture capital people: they did want to provide help but didn't know how. Mondo Media has been financed by technology oriented venture capital firms such as Sofinnova Ventures, Softbank Venture Capital and Red Rock Ventures. Over the past 20 to 30 years these firms have been dealing mainly with software companies and do not actually know the business of Media and entertainment companies. That's why venture capital firms at Mondo Media let the management take its own decisions and did not try to direct them. The strategic change in the business model from production to original content, for example, was decided entirely by the management team, as was the decision to go back to the starting activity, i.e. production, and the decision to change people. The value that venture capitalists provided Mondo Media with was on the operational side: they provided for example a company out of their portfolio that took on half of the office space when it was too much for Mondo Media right after the bubble burst. Thus the learning alliance has been weak.

This case supports the propositions 1a and 1b as the VC firms have a completely different knowledge base compared to Mondomedia and were therefore not familiar with the projects handled by their Portfolio Company. This didn't help Mondomedia to develop absorptive capacity. The VC firms were though motivated to help Mondomedia as they had a positive perception of value and probability of future rewards. Carl Rosendahl, principal managing director of Softbank, thought that "the crux of the Mondo business model is that it's a syndication company, not a destination site. Building a destination site is expensive, time-consuming, and near-impossible" (Business 2.0, May 2001). Moreover Mondo Media's customers were famous brands such as Netscape.com, Lycos.com, Shockwave.com, Warner Bros. Online, RealNetworks, and NBCi.com right from the beginning. At a first glance these findings support the propositions 2a and 2b. However the VC firms' motivation was not based on relevant qualifications, role perception and effective knowledge transfer, but on a general expectation of success of Mondo Media. This general expectation based on the client's reputation. Therefore at a second glance propositions 2a and 2b as well as 1c are refuted. For the proposition 2c the findings are not relevant. Nevertheless at a third glance this doesn't diminish the explanatory value of our theoretical model.

The case of Mobileway

Description

Mobileway was founded by four people in France in January 2000. The business idea was to build a global network for the international exchange of SMS all over the world. As for today the company has built a system of wireless networks constituted by multiple, direct private connections between the mobile telephone networks and the Mobileway's central units. Each of the connections between the central units and every mobile telephone network represents the result of a bilateral commercial contract between Mobileway and the mobile network provider. Through its „Mobileway Global Network" (MGN) Mobileway offers services like

access, payment and users management. The MGN furnishes a link between company applications and customers, partners and employees. Using the MGN firms don't have to build their own network infrastructure or negotiate bilateral contracts with other companies.

Mobileway was incorporated in the USA. Thus 92% of the activities still take place outside the USA. 70% of the customers are outside the USA, would like though to enter this market. Customers of Mobileway are for example Siemens, Motorola, Nokia, Oracle, Microsoft, Disney, Sony, Lycos, Visa, MasterCard, Mviva, AtoBe, fusionOne, Keynote, OpenTV (NVCA Venture Economics database 2002). The company is structured in three parts: Mobileway Europe, Mobileway USA, and Mobileway Asia. There are all together 12 offices around the world that employ 120 people full time, six of them work in the USA (San Ramon, California). In May 2001 there were 14 employees in the USA, but as the market wasn't so developed yet the business was downsized. There is another employee in the USA, who is responsible for the Business Development. He is based in New York as the development strategy focuses on financial services and advertising. Each division has a responsible and corresponding country managers.

Mobileway would like to become an aggregation point for content providers generating revenues with SMS fees, premium push services and revenue sharing agreements. The company receives a fee for every delivered message and every time a customer buys a product or service from a company through the phone, Mobileway shares the revenues with the selling company. The bill for the purchased product comes to the customer together with the phone bill. So there is no need for the content provider to worry about the billing process. Mobileway is dealing with several banks to negotiate conditions for the billing process (especially the time required to process the billing). A third of the total revenues comes from sharing agreements. Mobileway is therefore focused on major content delivery companies which as customers can show a big subscription base. Thinking about future growth Mobileway foresees an IPO, even if time is not ready yet.

Mobileway could rise $9 million in a first round of financing (A round). With this capital the company could build the main part of its network. There are 90 connections to the different network providers at the moment. In a second round (B round) of financing in July 2001 Mobileway collected $27 million. Between the VC firms there are Mayfield and 3i. A partner of Mayfield, Janice Roberts, became Chairman of the board after the second round was closed. Mobileway tries now – together with Janice Roberts – to gather more risk capital in a third round (C round). This is not very easy at the moment, as the capital market is still very sceptical after the bubble burst of 2000.

The actual success of Mobileway bases on a grounded business idea and the Venture Capital raised in the first financial rounds. The involved VC firms have helped Mobileway to find additional investors and also clients. They provided the typical high level introduction – as they are well known Venture Capitalists – to the large telecommunication firms and to the operators which represented the relevant partners for building the global data network. In particular Robin Murray of 3i and Janice Roberts of Mayfield have brought their own

expertise, have a good understanding of the wireless business and market, so they could give critical advice and constituted a knowledge advantage for Mobileway.

Mobileway is trying to grow with measure, following a strategic plan instead of the day to day development of market and environment and therefore constantly adapting to them. This behaviour results mainly from the lessons learned out of the experiences of the failed internet start ups over the past three years. The challenge for Mobileway consists in balancing technology growth with its financial needs: these are the qualifying factors to gain the right customers and retain them. Customers should be customers-partners that collaborate with the company and follow the same objectives. Mobileway offers services that are component pieces of other firms' value chains. It is therefore easier for these firms to become a customer of Mobileway. As a consequence Mobileway is living aside of (is partially touched from) the crisis finding itself in a privileged position: for its services there is an established market where a lot of transactions are occurring, so the business should work. The critical success factor relies in winning new customers. The expansion strategy should therefore be focused on gaining market share for transactions – in order to generate incremental value –, operating a global network while maintaining the good quality of the network (interview with Jim Queen, Vice President US Operations July 2002).

Discussion

Mobileway has tried to coordinate product-market strategies with its technology and financial strategies. The company believes in cautious growth and prefers it to huge but discontinuous growth steps. In this way Mobileway reduces its mortality risks. This positive development has been allowed by effective knowledge transfer between VC firms and Mobileway. Indeed the main investors and Mobileway have a similar knowledge base as their customer and familiarity with its business. This has enhanced the development of absorptive capacity within the entrepreneurial relationship. All this has positively influenced the VC firms' perception of value and probability of rewards for their investment of tangible and intangible resources in the company. The VC firm Mayfield has invested in Mobileway because Mobileway "has already developed a substantial global infrastructure and revenue generating services, leveraging the huge momentum in Short Messaging Service (SMS). It is our belief that the Mobileway platform provides the foundation for many new services and applications that will set new standards in wireless connectivity, using current and next-generation networks" (Janice Roberts, General Partner at Mayfield and Chairman of Mobileway, 2002)[1]. This supports the propositions 2a and 2b developed in this paper. If we then consider that the leading VC investors have experience in the telecommunication sector, the proposition 1a and 1b are supported too. In particular, one general partner of Mayfield (Janice Roberts) became Chairman of Mobileway in order to better support the transfer of the relevant

[1] Janice Roberts, General Partner von Mayfield Venture Capital und Chairman von Mobileway, http://www.mobileway.com/pages/aboutus/investors.asp

knowledge and therefore the partners' absorptive capacity. This also proves the VC firm's motivation to foster the learning alliance and invest knowledge in Mobileway. The fact that Mobileway seems to grow slowly but successfully quite sustains the proposition 1c.

Results and discussion

The most important result of this paper is that the general model of absorptive capacity can be successfully applied to the specific situation of the entrepreneurial network existing between VC firms and their Portfolio Companies. A successful application needs only the adaptation of the general model to the specific conditions of each entrepreneurial network, i.e. size and industry. A second important result is that adaptive capacity is based on permanent organizational learning processes of all partners in the network, which therefore can be considered a learning alliance. The third important result relies on the application of a process motivation theory to the concept of absorptive capacity. The combination of both theoretical models explains not only the existence but also the development of effective absorptive capacity much better than before. Our findings have been partly sustained by our empirical research, at least they have not been refuted!

However our approach suffers from some weaknesses. First, the sample is very small and stems only from one industry. The findings are therefore not representative. Furthermore our findings could suffer from a social cultural bound: the theoretical bases as well as the empirical cases stem from the USA. Perhaps therefore they cannot be generalized. We suppose that organizational learning processes differ more from one another, the more they are embedded into different social cultural contexts. Until now this hasn't been investigated systematically. Nevertheless the empirical test has shed light on some new elements within the concept of absorptive capacity. However it is now clear that an instrumental concept of absorptive capacity must be part of concepts of organizational coordinated learning. Finally the concept itself and especially its instruments need further research.

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