SILICON VALLEY'S INNOVATIVE MILIEU: A CULTURAL MIX OF ENTREPRENEURS/ AN ENTREPRENEURIAL MIX OF CULTURES? EXPERIENCES OF EUROPEAN FIRMS

With 2 figures and 1 table

NICOLE POHL and GÜNTER HEIDUK

Zusammenfassung: Silicon Valley's innovatives Milieu: ein kultureller Mix von Unternehmern / ein unternehmerischer Mix von Kulturen?

Das Silicon Valley gilt als weltweit führende Hightech-Region. Eines der charakteristischen Kennzeichen ist die kulturelle Vielfalt, die u. a. durch eingewanderte Unternehmensgründer und Hightech-Spezialisten entstanden ist. Auch die Niederlassungen von multinationalen Unternehmen, so u. a. aus Europa, tragen zu diesem Bild bei. Letztere nutzen das Silicon Valley als Standort für Vertrieb, Forschung und Entwicklung sowie als „Horchposten" über neueste technologische Entwicklungen.

Silicon Valley's Erfolg wird einerseits auf die lokale Konzentration von Innovatoren wie z. B. Hewlett Packard, Shockley (Shockley Transistor, Fairfield Semiconductor), Jobs/Wozniak (APPLE), Jerry Yang (YAHOO) zurückgeführt. Andererseits wird die einzigartige Regionalkultur als Erfolgsfaktor hervorgehoben.

Während in der Regel Länder als Untersuchungseinheiten für die Wirkungen von kulturellen Normen auf das ökonomische Verhalten gewählt werden, ist das Silicon Valley ein Beispiel für die Bedeutung von Regeln und Verhaltensweisen in einer Region, in der Akteure mit unterschiedlichem kulturellen Hintergrund intensiv interagieren.

Ziel der Studie ist es, erstens die Besonderheiten des lokalen Integrationsprozesses der Niederlassungen europäischer Unternehmen im Silicon Valley herauszuarbeiten und zweitens die Rückwirkungen auf die Beziehungen zum Mutterunternehmen zu untersuchen.

Die aus Interviews gewonnen wichtigsten Ergebnisse sind, dass

– die Bedeutung der besonderen Regionalkultur und die Notwendigkeit einer lokalen Integration oftmals unterschätzt wird,

– die Integration in die lokalen Netzwerke wesentlich von der sozialen Kompetenz des lokalen Managements abhängt,

– die erfolgreiche Integration durchaus zu wachsender sozialer Distanz zum Mutterunternehmen führen kann.

Die Studie untermauert die Erkenntnis, dass für eine globale technologische Führerschaft auch eine spezifische Regionalkultur bedeutsam sein kann. Schließlich bestärken die Ergebnisse die in der neueren Management-Literatur betonten Herausforderungen, die multinationale Unternehmen durch ihre Präsenz in unterschiedlichen Kulturkreisen zu bewältigen haben.

Summary: Silicon Valley is one of the leading high-tech regions in the world. Its companies and workforce are characterized by a high cultural diversity and include many immigrant entrepreneurs and multinationals, among them Europeans. European companies have chosen the region as a location for sales, research and development as well as to establish "listening posts".

Silicon Valley's success can certainly be traced to the breakthroughs achieved by a group of innovators and entrepreneurs like Hewlett Packard, Shockley (Shockley Transistor, Fairfield Semiconductor), Jobs/Wozniak (APPLE) or YAHOO founder Jerry Yang. Besides these individual successes, its unique regional culture and its special ecosystem have been stressed as prerequisites for its success.

While countries have mostly been taken as the units to analyse the effects of culture on economic behaviour, Silicon Valley's example helps us point out the importance of a set of rules and behaviours that provide a framework for the interactions among individuals with diverse country cultural backgrounds.

It is the aim of the study to analyse how European firms integrate into Silicon Valley's innovative milieu and which tensions result for local managers, who are supposed to operate in a two-tier system of business culture: Silicon Valley's network culture and the business norms and behaviours that are valid in their parent company.

The results of the study show that

– the significance of differences in business culture and the need for local integration is often underestimated by foreign companies,

– integration into local networks depends crucially on the socio-cultural competence of individuals in the local management,

– successful local integration can lead to increasing socio-cultural distance to the parent company.

The study confirms the understanding that global technological leadership is crucially related to collective dynamics and interaction patterns of the local innovation community, which might be described as regional culture. It is also in line with findings in the business literature about the challenges faced by multinational companies operating in diverse cultural environments.

1 Introduction and aims of the study

Silicon Valley has become the symbol for the ability of regions to become leaders of technological change. Its pace of change, economic boom and special culture have been described as unique in the world. There is an extensive literature marveling about the ingredients of Silicon Valley's success (LEE et al. 2000, SAXENIAN 1994, KENNEY 2000a).

Silicon Valley's innovative milieu has attracted a number of firms, which try to benefit from it in different ways. While many foreign companies, which are present there, are primarily involved in sales, others have set up "listening posts" that are supposed to monitor innovation trends (WEIL 2000), benefit from the local agglomeration of talent or seek opportunities to partner with local players. Some of these branches also pursue R&D. The presence of multinational companies in such centers of excellence gives these locations a role that goes beyond being a hotbed for the technologies they are specialized in (CANTWELL 1995). The multinational mix of companies present in Silicon Valley also enhances the transfer of innovation from Silicon Valley to other regions.

The importance of local milieus for the creation of cutting edge technologies introduces a geography perspective in global technology competition. A report by JOINT VENTURE SILICON VALLEY NETWORK (2001b) stresses that "geographic clustering of people, companies, and institutions is a powerful mechanism for transferring and augmenting personal knowledge, skills, and experience quickly". In this study, we will less focus on the perspective of the cluster itself than on the strategies of companies, which try to get access to it. WILLIAM MILLER (in JOINT VENTURE SILICON VALLEY NETWORK 2001b, 25) defines their behavior as new globalism, "where businesses invest in regions to gain access to specialized workforces, research and development and commercialization capacity, innovation networks, and unique business infrastructure".

The following paper is based on a study in Silicon Valley, which was done by the authors between May 2001 and October 2001. Given the importance of Silicon Valley as a technological hotbed, we were interested in the determinants of the success of (European) multinational companies that had decided to have a presence in Silicon Valley, and in particular in the soft factors determining their access to Silicon Valley's

Source: Joint Venture Silicon Valley Network, Index 2001

Fig. 1: Mapping Silicon Valley

Die geographische Lage des Silicon Valley

reservoir of new ideas and innovative capabilities, as it seems that many economic approaches dealing with innovation and global technology competition neglect these factors. In this sense, the orientation of the study is socio-economic. Three crucial assumptions of the study are:

– Multinational companies are often characterized by a set of behaviours and norms that are influenced by the business culture of their home country or region.

– Silicon Valley's dynamics are based on the intensive interaction of a set of relevant decision-makers. The common visions and interests of these decision-makers have gradually led to the creation of a set of behaviours, rules and norms that are shared in the local community and that have been described as Silicon Valley's regional culture.

– When multinational companies open up branches in the Valley, their local integration requires comparably high investments to build up social capital. The outcome of this process determines the absorption of innovative trends by the multinational as well as their transfer between local branch and headquarters.

The results, which are presented in this paper, are based on in-depth structured interviews that have been done with 26 European companies and other institutions in Silicon Valley. With 68 interview requests, which we had send out, this is a response rate of nearly 40%. The companies were British, Dutch, Finnish, German, Italian, Swedish and Swiss by nationality with a bias towards the German and Scandinavian groups. They cover the automobile, bioscience, software, venture capital and telecom sector. We also did interviews with representatives from incubators and accelerators, bilateral chambers of commerce and other organizations that might support the operations of European firms in the Valley and give us information about the problems they might encounter. There is no doubt that there might be a bias in our answers for instance in the sense that those companies that were willing to talk to us might have experienced relatively few problems or vice versa. The study is exploratory by nature and does not have the ambition to reach quantifiable results.

We are going to combine the knowledge gained in our interviews with theoretical insights from the literature. The study has been done after the burst of the Internet bubble, in a time when conditions in Silicon Valley were far from optimal. Together with many others, however, we believe that the tangible and intangible infrastructure of the Valley offers a good basis to

recover. Nonetheless, the difficulties, which the region has been facing, have without a doubt also influenced its perception by foreign companies.

We are going to proceed as follows: In section 2, we are going to define Silicon Valley as regards its geography and economic activities. In section 3, we will first discuss the relevance of culture for the operations of European firms in Silicon Valley. We stress that culture matters in two different ways:

– the impact of country culture on business behaviour and

– the existence of a special regional culture in Silicon Valley.

Section 4 will present a summary of the results of our interviews. Section 5 will draw a conclusion.

2 Defining Silicon Valley

It is difficult to define Silicon Valley in geographical terms, as it is not a formal administrative region.[1] We might say that it is at first hand a geographical region south of San Francisco that has long been the home of an unusually high concentration of computer companies. Its nickname is derived from the fact that Silicon is a popular semiconductor material that is used to produce chips. The term 'Silicon Valley' was first used by DON HOEFLER in an article for Electronic News in 1971. The semiconductor industry is one of the constituent clusters in the Valley. JOINT VENTURE SILICON VALLEY NETWORK (2001a) has defined the Valley as "all of Santa Clara county as well as San Mateo county from Route 92 south, Scotts Valley in Santa Cruz County and Fremont, Newark and Union City in Alameda County" (Fig. 1). This definition of Silicon Valley geographically covers 1,500 square miles with 2.5 million people population and 1.35 million total jobs. Some people have also described Silicon Valley as a "state of mind", which is obviously a fuzzy description, but points to a sense of community, which will be discussed below.

The industrial clusters that are important in Silicon Valley are computers and communication, semiconductors and semiconductor software, bioscience, defence and space, innovation services and professional services. Together, these clusters account for 40% of the Valley's employment.

Silicon Valley has one of the worst high-cost environment in the United States. Nonetheless, it was characterized by the highest number of business start-ups in the United States, but also the highest number of failures (DUNN a. BRADSTREET 1997), before the Internet bubble burst.

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[1] It is interesting to note that many of the cities and towns in Silicon Valley are often hardly known outside the United States.

Moreover, Silicon Valley is one of the most diverse regions in the world in terms of immigrant entrepreneurs, human capital and multinational companies (REYES et al. 2002, SAXENIAN 2000). If we take census data for California, we see that the percentage of white non-Hispanic was 46.7 in 2000. Hispanics, and mostly Mexicans make up a significant part of the population (30%) as well as Asians (11%). Hispanics are however also the group with the lowest median earnings. The biggest groups of Asians are the Chinese and the Filipinos. The Bay Area, which partly overlaps geographically with Silicon Valley, is particularly prominent for its high proportion of Asians. A lot of companies in Silicon Valley are today run by Chinese and Indians. This cultural mix of entrepreneurs, companies and labour has induced some people to doubt whether Silicon Valley's inhabitants still have much in common:

"Silicon Valley is notoriously a world of strangers; nobody knows anybody else's mother there. There is no deep history, little in the way of complex family ties, and little structured community. It is a world of independent – even isolated – newcomers. With its spatially isolated and spread-out residential patterns, its shopping strips and malls, its auto gridlock, its rapid demographic turnover, and the rampant individualism among its most talented workers, Silicon Valley would be hard-pressed to present the image of the close-knit society … ." (COHEN a. FIELDS 1999, 109)

Despite this lack of a common country culture, there seems to be a shared set of behavioural norms that guides the dynamics of the Valley. This will be discussed in sections 3.2 and 3.3.

3 Country culture and regional culture

3.1 Cultural influences on economic behaviour

There are different reasons why it is interesting to think about culture in Silicon Valley, only one of which is the above-described diversity of its companies, workforce and entrepreneurs. On the one hand, the most obvious question here is to ask how the interplay of these different cultures works or at least how the different cultural backgrounds influence the operations of companies and entrepreneurs in Silicon Valley. On the other hand, we have to ask what kind of environment these companies enter in terms of a regional culture. While this section will deal with the relationship between country culture and economic behaviour, the next section will address the question of regional culture.

In the literature, there is no agreement on how to define culture. Some people say that culture is learned, most would agree that it is based on socially communi-cated and shared beliefs, values, behaviours and artifacts. Several authors have argued that culture matters for economic behaviour (ADLER 1997, HOFSTEDE 1980; 2001, TROMPENAARS a. HAMPDEN-TURNER 1998 etc.). Different dimensions have been outlined that could distinguish cultures from one another. One of the best-known studies has been done by HOFSTEDE (1980). He states that culture is "the collective programming of the mind". HOFSTEDE found four basic dimensions along which cultures differ:

– *Power distance* describes the relationship between boss and subordinate in a hierarchy including its value component. Power distance is a measure of the interpersonal power or influence between the two as perceived by the least powerful of them.

– *Uncertainty avoidance* is related to tolerance for uncertainty. Some individuals perceive a greater need for action in order to overcome uncertainty than others.

– *Individualism* (versus collectivism) describes the relationship between the individual and the collectivity, which prevails in a society. It is interesting to note that HOFSTEDE finds that the U.S. has the highest degree of individualism.

– *Masculinity (versus femininity)* concerns the question whether biological differences between the sexes should have implications for their roles in social activities.

Starting with KOGUT and SINGH (1988) a lot of approaches have used HOFSTEDE's dimensions to determine an aggregate index of cultural distance between countries as an explanative variable for different types of behaviours.[2]

The cultural dimensions found to be relevant are not the same in different studies. TROMPENAARS and HAMPDEN-TURNER (1998) highlight among other things

– *specific versus diffuse relationships* depending on how well-defined relationships are,

– *achievement-versus ascription-oriented* societies depending on whether judgments are made by what people have recently accomplished or by status in terms of birth, kinship, gender, age, connections, education,

– *attitudes towards time* referring to the question whether we emphasize the importance of what has been achieved in the past or of what is planned for the future.

Already here, it should be noted that Silicon Valley is generally acknowledged to be highly individualistic as well as strongly achievement-oriented and risk-oriented.

One of the well-recognized problems of these studies is that they are mostly country-oriented. Although

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[2] See HOFSTEDE (2001) for an extensive collection of articles and analyses based on his approach.

Table 1: Concepts of culture

Länderkultur versus Regionalkultur

	COUNTRY CULTURE (BACKGROUND OF EUROPEAN FIRMS)	INNOVATIVE REGIONAL CULTURE (PART OF SILICON VALLEY´S INNOVATIVE MILIEU)
Background	relatively homogeneous societies are entities of interest; despite the fact that societies are not bound to countries, the latter are often chosen for measurement	diverse society; heterogeneous group of people as regards their original country cultures; Silicon Valley community as relevant entity
"Carrier" of Culture	individuals	unique regional setting
Causality	culture ⬇	economic interaction ⬇⬆

most scholars have underlined that culture is not necessarily a concept that is confined to the borders of countries, practical empirical work has often made them return to country-frameworks. There have also been a few analyses dealing with the topic of intercultural variation, which refers to the fact that most cultural studies measure average characteristics ("the average German"), but do not look at the variation within cultural groups (AU 1999), which might be an interesting approach to deal with regions.

3.2 A regional culture, ecosystem and habitat

One feature that has been emphasized is the fact that – while individual entrepreneurs are of major importance in the success story of the Valley – its dynamics are also driven by the interplay of a complex set of institutions and people. This interaction allows ideas that are in the air to circulate freely (BROWN a. DUGUID 2000a). It has been acknowledged that Silicon Valley possesses a special culture, ecosystem or habitat that binds together its individuals and companies into a well-functioning community, an entrepreneurial mix of cultures, that is difficult to replicate in other places, although there have been efforts (ROSENBERG 2002).[3] The social mechanisms and rules of interactions comprised in this culture do not represent American culture, if there is one at all. They are derived from the economic orientation and local interaction of the relevant decision-makers (entrepreneurs, venture capitalists, universities, lawyers, consultants, highly-skilled labor etc.), but they may be influenced by a regional American (potentially Californian) culture.

Silicon Valley's environment has been described as a "dynamic ecosystem of semiautonomous, yet mutually supportive entities, communities and cultures" (BAHRAMI a. EVANS 2000, 187) and a habitat "in which all the resources high-tech entrepreneurial firms need to survive and thrive have grown organically over time" (LEE et al. 2000, 3). WEISS and DELBECQ (1990, 84) have defined the term regional culture as "shared beliefs, attitudes and values about space, time, work and leisure, which are influenced by the history, economics, politics, social traditions and customs of a local geographic area". The idea of a regional culture is interesting in different ways:

– It reflects the notion that culture is not bound to country borders.

– It seems to imply assumptions that are irreconcilable with the traditional idea of country culture (see Table 1). It seems that the basis for shared behavioral norms is very different in the two cases. For an analysis of the culture of countries or societies, homogeneity of their members is a crucial assumption. It is the common background of individuals that leads to the development of a common culture. This is very different in Silicon Valley and it may even be misleading to use the term culture in this context. Silicon Valley's inhabitants have highly diverse backgrounds. They have come together from an economic point of view because of their common and at the same time competing economic interests. This is why economics is not unilaterally determined by culture, but culture and economics seem to interact in a limited geographical space. Finally, we can also assume that the entrepreneur, a typical personality for locations like Silicon Valley, is far from reflecting an average character of his society (MC GRATH et al. 1992, BEGLEY a. BOYD 1987).

For economists, culture is often a somehow "suspicious" and much too fuzzy explanation of economic behavior and they have long neglected localities as frameworks for economic interaction. The ambiguous and two-way relationship between culture and economics is well reflected in KENNEY'S (2000b, 2,4) assessment of the importance of culture in Silicon Valley:

"As a region, Silicon Valley embodies Joseph Schumpeter's ideas about technical innovations creating 'new economic spaces'. … For many observers the convenient shorthand explanation is that there is a regional culture that fosters an entrepreneurial spirit. The cultural explanations are peculiar because they are all-encompassing but convey little information. The driving force in Silicon Valley is fundamentally eco-

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[3] The three terms regional culture, ecosystem and habitat are not the same. Ecosystem and habitat are broader than regional culture. They comprise a set of rules, which can also be national U.S. law, the presence of institutions like universities etc, but also social mechanisms.

nomic, … The culture is not a prerequisite to an economy …, it is an outcome of such an economy."

On the other hand, he acknowledges that

"economic activity occurs in a context with taken-for-granted rules, norms and routines. … The social norms affect actors' access to resources and even the types of economic activity that will be undertaken. … Such regions often create their own myths and legends, which orient newcomers to the cluster's culture." (KENNEY 2001)

The second part of KENNEY's argumentation comes near to MARC GRANOVETTER's (1985) explanation that economic action is embedded into social structures.

3.3 Characteristics of Silicon Valley's regional culture

What are the special characteristics of Silicon Valley's culture and how is it possible for such a diverse region to share a common culture? The following points have been stressed by our interview partners, but they are also those that are commonly underlined in the literature.

The speed and ease with which new ideas circulate has often been named as a major characteristic of Silicon Valley's business culture. NEVENS (2000, 90) calls this "the geography of mind share". Spillovers of new ideas and inventions arise out of practice and are easily shared. HAMEL (1999, 75f) describes it as follows:

"It is at the intersection of unbounded imagination, opportunity seeking cash and energetic freethinking people that wealth gets created. Ideas, capital and talent whirl through Silicon Valley in a frenetic entrepreneurial dance. In most large companies, by contrast ideas, capital and talent are indolent."

It seems that the benefits from this exchange of knowledge are understood to outweigh the fear of giving away ideas. In a recent report published by SILICON VALLEY JOINT VENTURE (2001b), the authors state that "sharing tacit knowledge through interactive processes based on trust, willingness to share, and mutually beneficial exchange over time" is the key. One major basis for this information exchange are intensive connections between all the relevant players in different forms. The complex interaction between companies and individuals in Silicon Valley and the tendency to compete and share information at the same time has been described with the term "co-opetition".

Besides this, Silicon Valley is known for the speed with which changes can be introduced and for the willingness of its entrepreneurs to take risks. Moreover, it is underlined that there is a right to fail ("Risk is good, failure is not bad."), which is not as strongly accepted in many other regions of the world. Learning through failure is possible and valued and there is little stigma attached to failure, but a stigma of resting on one's

laurels. Altogether, its achievement orientation should make the Valley open for foreigners to succeed. As a venture capitalist put it "you are only as good as the last deal you have made", which is a meritocracy-based principle.

Our European interview partners have also emphasized the less hierarchical structure in many of the companies and in the community in general, which is a fact that is related to the need to move quickly.

4 The results of the empirical study

Our main interest in the interviews was to find out whether the integration of European firms in Silicon Valley is influenced by their country cultural background or by their business culture and what role the special regional environment in Silicon Valley plays. In some sense, we share the problems of other studies in that we distinguish companies in terms of their country culture. But our interviews in Silicon Valley have also shown that companies from different countries underlined similar aspects of Silicon Valley's regional culture as being different from their home country, even if their feeling how much adjustment this requires from them varied. Thus, companies seem to be confronted with the same stimulus, which is a result of Silicon Valley's special environment. There is no doubt, that our small study is not able to distinguish reaction patterns of companies with different cultural backgrounds. This would require a much broader study. It would certainly also be interesting to analyze whether companies from the U.S. East Coast observe similar difference. Moreover, some authors have remarked that it is more and more difficult to talk about the nationality (and maybe also about the culture) of extremely big multinational companies (HU 1992). For many of the companies and institutions we interviewed (but not all of them), their nationality was relatively obvious, if not from the mixture of their employees, then from the location of their headquarters.

Our interviews have confirmed the notion that local embeddedness of companies or integration is crucial. Integration refers to the fact that a mere presence in Silicon Valley can be pointless, if the company does not become part of the community by recruiting from it, being bound into social networks and being perceived as a legitimate player. Only in this way can companies access information, scan new developments and render proximity an advantage that goes beyond faster access to information that would in general also be available without having a local presence. Our interviews have shown that successful operations in Silicon Valley rely

crucially on creating connections in the Valley.[4] This requires legitimacy in the community and relationships that are based on mutual benefits of the partners (reciprocity and win-win constellations). It also became obvious that cultural friction can occur on at least two levels (Fig. 2): in the integration process of the local branch in Silicon Valley (including the management of culturally diverse workplaces) and in the communication between local branch and European headquarters. Both levels are critical to finally exploit Silicon Valley's innovation potentials in the global network of the multinational company. On both levels, the local CEO and his social competences are of major importance. In the following sections we will focus on five aspects where business cultures seem to be important. Several caveats shall however be made at this point:

– The problems and process of integration differs with the type of industry and the size of company we are looking at. Some industries rely on stronger outside interaction than others and small companies would typically need to be more open to collaboration than big companies, which can be largely self-sustainable.

– Problems of integration are usually experienced to be less significant for companies led by young entrepreneurs, who have been educated in the United States.

– Some interviewees have rejected the notion of a country cultural background influencing their operations altogether referring to the fact that their company has its own global or locally adjusted corporate culture. We believe that it is incredibly difficult to create a global corporate culture. Even if there is no dominant home country culture, the local context as well as the social competences and attitudes of leading personalities are of high importance.

4.1 Communication and networks

A vital aspect in the integration process is communication. Culture can be understood as "a system for creating, sending, storing and processing information" (HALL a. HALL 1989). This is true for country culture, but also for our idea of a regional culture. Cultural differences in communication patterns may be less relevant on the technical level, where engineers are involved, but they are certainly important for management. On the technical level, Silicon Valley's innovative power relies on the creative inputs from a diversity of
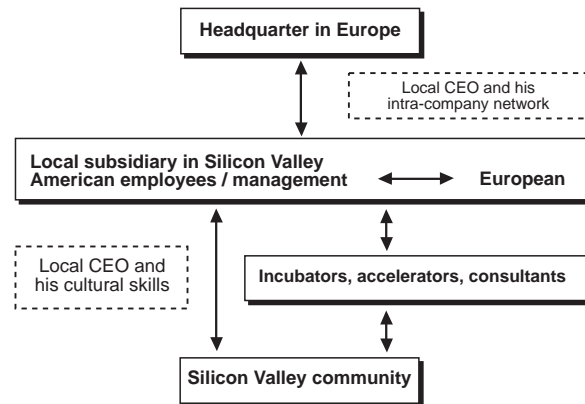
Fig. 2: Levels of cultural frictions
Ebenen von kulturellen Friktionen

cultures. However, differences in communication patterns and identification with companies matter a lot for human resource management, in particular in an environment where labor is very mobile. Actually, the question who to put in leadership positions in the local branch is a crucial and obviously unsolved question. While some companies chose to hire an American CEO because of easier integration into the local market, others say that a European CEO makes communication with the headquarters easier: "Those, who collect the data, should have the same cultural background as those, who use them." Without a doubt, however, placing expatriates in top positions also sends the signal to local talent that they will not have a chance to get into higher positions in this company. A third solution is to find an experienced expatriate, a European who has lived in the region for a while.

Our interviews have also pointed towards a diversity of other situations where distinctive communication patterns of companies with a different cultural background were significant. While there is ample supply of anecdotal incidents and while there are differences between companies from different European countries, we will take the example of German companies to illustrate a few points:

Germans are often perceived as very direct by Americans.[5] In business meetings they tend to come directly to the point. They prefer to set up clear rules by specifying time schedules, while not spending too much time on building relationships, getting to know their business partners etc. There were many hints on the fact that a 60-minute business meeting would be used in a completely different way by Americans and Ger-

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[4] There is no doubt that the free circulation of information is more important or desirable in some sectors than in others. In particular bioscience seems to be a sector that functions according to rules that are much different from other sectors that are relevant for Silicon Valley.

[5] We are well aware that this is a generalization, since the "average" German is difficult to find.

mans. This may seem inefficient for the respective other party because it feels that their information needs have not been satisfied or that time is wasted.

Very often communication styles of Germans are perceived to be too direct, even blunt, forceful or arrogant. We heard things like "Germans do not beat around the bush", they do not say things they do not mean. This can be a particular problem when it comes to criticizing others, which Americans would rarely do in a direct confrontational way. In this way, an understanding of differences in communication seems to be crucial for human resource management in culturally diverse working environments as well as in business negotiations, brainstorming sessions or presentations. There are many examples where communication problems have led business negotiations to an early end and where business opportunities have effectively been lost. Very often it is mentioned that this may be less a problem for a well established local manager, but become a serious problem, once the top management from the European headquarters visits the Valley to talk to business partners.

In particular in presentations, differences can also be found in the degree in which they are based on detailed information and in which their style is more illustrative. For some, but not all European cultures differences in terms of hierarchical understandings are also important. This is certainly true for Germany where addressing people by last name and possibly title is commonly expected in business, which is rarely done on the West Coast. From our own experiences, we felt that this is not only a slight difference, but it changes the whole context of a conversation and the basis for information exchange.

While differences in communication are a matter of fact for any multicultural encounter and not a specialty for Silicon Valley's foreign companies, a special feature related to communication is the importance of networking in the Valley and the extent with which outside-the-company relationships matter.[6] ANNALEE SAXENIAN (1994) has called Silicon Valley the "first networked region". More than in most places, people stress that it is important to know "who" (… can do things, … can make decisions, … knows the right people). Being part of multiple networks distinguishes the insider from the outsider, the listening post from the local player. Networking in Silicon Valley can take different forms starting with organized and regular events

and ending with informal ways of keeping contacts. There are some well-known places where business deals are made over a breakfast or lunch. Regular networking events can be centred on professions (Software Development Forum), cultures/regions (Silicon Vikings, Deutscher Stammtisch) or other criteria or be aimed at a diversity of people (Churchill Club events are probably those with the highest reputation). Some interviewees stated that some of the regular and well-known networking events are especially frequented by newcomers, people who search for jobs, people, who want to get funding for start-ups and venture capitalists. Some people commented that they reduced their participation in these meetings after being well established in the Valley because they were characterized by too much "noise" (talking to people, who are not valuable for business operations). Networking Silicon Valley style is definitely a game on its own. Networking events are usually crowded with people wanting to extract as many good contacts as possible, as they "work the room". It is necessary to introduce oneself as well as one's aims in four sentences (the 30-second pitch) and not to expect or try to force people to get involved in a longer conversation. For an outsider, the informal and casual atmosphere of these meetings often hides the serious business ambitions participants have. Many of the Europeans we interviewed stated that they felt they did not want to/were not able to develop these networking activities in the perfection that is typical for some of their American counterparts (possessing thousands of business cards, having elaborate databases, spending a significant amount of time on social interaction). But what is definitely important is that there is a well-connected group of people in the Valley, who exchange information that can be crucial to realize business opportunities. At the same time, there is a group of foreigners, whose names rarely appear anywhere. Assuming that these connections have the value most people ascribe to them, we can certainly say that it is crucial for foreigners in Silicon Valley to understand the value of relationships (social capital) and to see that going out, not spending 90% of their time in the office, is not a waste of time, but crucial to accomplish their mission in Silicon Valley. The really interesting parts of information, which are not on the Internet, can often be found outside the office embodied in rumours and strong relationships, which one can refer to. Confirming this, LEAMER and STORPER (2001,1) recently stated that

"increasingly the economy is dependent on the transmission of complex uncodifiable messages, which required understanding and trust that historically have come from face-to-face contact."

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[6] The importance of face-to-face and proximity is also a feature of some other clusters in the world, for instance financial centers.

Without doubt, this requires companies in the high-tech sector to develop new capabilities and take into account new types of investment.

Our own experiences have very well shown that networks provide access. After getting established in the Valley, snowball effects supported this study and led to a response rate that would otherwise not have been possible. At the same time, the way news travels in the Valley renders it obvious that networks are not only windows to business opportunities, but at the same time sanction mechanisms. As much as networks help to get access, they also help to spread word about mis-behaviour of any kind.

Relationship management on the upper management level can be decisive to get access to opportunities in Silicon Valley. Business is done by individuals, instead of companies and institutions. Individuals are also the stable basis for ongoing business in Silicon Valley and they are the entities that have to be integrated.

Finally, it should be noted that the ease of making contacts in Silicon Valley is often striking for Europeans. The high level of openness makes it difficult to understand that there is a fine line between having a contact and being too pushy. Very often foreigners interpret this openness as an invitation to ask for more and sometimes for too much.

Most of our interview partners have described that integration in the Valley takes time (and a budget for networking that may be unusual for European standards), although there were different perceptions of the length of this period. It distinguishes pure listening posts from active players in Silicon Valley and individuals, who access public information faster because they are locally present, from others, who get access to information they would otherwise not get at all. It is doubtful whether the first type of investment pays off in a high cost environment.

Communication failures and failures to integrate in the Valley can result in unrealized business opportunities, loss of reputation and sunk costs of operating in Silicon Valley. While it is certainly difficult to find companies that have objectively failed because of cultural reasons, there are certain names in the Valley that keep reappearing in this context.

4.2 Decision-making

Much of the dynamics in Silicon Valley seems to rely on the fact that decisions are made quickly. Europeans have often stated that this is difficult for them because some European cultures tend to rely stronger on consensus and comprehensive data sets before deciding. They value intensive background information, want to

be sure that all the relevant facts are there and want to weigh the alternatives carefully. Very often this is a problem that lies in the headquarters of the company, if the branch does not have a significant degree of independence. The standard phrase we heard was that "they (the headquarter) lack a sense of urgency that is present in the Valley". As much as decisions to realize ideas are made quickly in Silicon Valley, as big is the willingness to give up ideas that might be cultivated longer in other environments. It is interesting to note that some of the Europeans pointed out that Americans sometimes skimp on details, while the Americans tend to think that Europeans are sometimes too bureaucratic. To some extent the more or less strong reliance on hard facts is also reflected in the notion that Americans are masters in marketing. Many Europeans observed that Americans "develop with marketing slides" and bring products to the market at a much earlier stage. Meanwhile, Europeans, maybe Germans in particular, work on their products until they believe it is perfect, but they have relatively lower skills in marketing.

Several of our interviewees have pointed to the fact that business decisions in Silicon Valley are often dependent on the people that are involved. Experiences with business partners and their reputation may dominate the need to gather hard facts ("weigh data in the Californian style"). This can be in contrast to the requirements of the European headquarters.

4.3 The role of incubators and accelerators

There are numerous examples in Silicon Valley where companies advertise their services as incubators or accelerators. Some of them stress that they can also help newcomers to deal with cultural differences besides legal or practical problems. As one representative states, the goal is "to prepare foreign businesses for the cultural differences, monetary shock and the unique dynamics of the valley; basically to dismiss all preconceived notions of Silicon Valley, while providing the necessary office space, resources and contacts for a fruitful presence in the area" and "to be a cultural filter" (SILICON VALLEY BUSINESS INK 2001).[7]

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[7] As regards preconceptions, it is interesting to note that some Europeans state that there are incidents where newcomers believe they understand the U.S. (Silicon Valley included) so well that preparations, which they would have made for a presence in other countries, are not made. Often, this misperception of cultural distance can cause high follow-up costs.

There are different types of incubators: On the one hand, local (U.S.) companies that give advice to foreigners and on the other hand, European incubators, which have their offices in the Valley, and help their compatriots enter the market. The latter have sometimes themselves taken the advice of local incubators before starting their operations (incubator-in-the-incubator principle). European incubators argue that it is easier for them to understand their clients' problems, but they may have disadvantages in offering them access to local resources because they are themselves less well connected.

Altogether, it can be doubted that success in the Valley can be taught, but incubators might help to ease access, give advice about certain rules of interaction and about how to build up an adequate micro-network. However, most of them admit that the difficult task, which they cannot solve, is the transfer of information and the interaction between parent company and branch.[8]

4.4 Bridging the distance between local office and parent company

Managers in the local office are supposed to serve as a bridge to the Valley, but they also have to build strong connections to their home base. WEIL (2000) calls this combination knowledge extraction and knowledge absorption skills. Local managers have to monitor developments as integrated local players, but they also have to contribute that these new ideas can be used in the company. Our interviews have shown that communications between headquarters and local branch cause frustrations in nearly all cases. While this is not a Silicon Valley-specific problem, but can be found whenever companies are geographically spread, it might be more problematic in the case of Silicon Valley branches. Very often companies establish branches in Silicon Valley to sell, but also to make these branches be at the forefront of new trends. This means that they are supposed to transmit complex information about rapidly changing trends, whose adoption can lead to radical changes in fields that go far beyond the original competences of the local branch. This certainly renders efficient communication between headquarters and branch harder and more important at the same time. Some of the people interviewed pointed out that they see it as equally important to have a good network within their own company as to be well connected in the Valley. The fact that the firm is not a "region of costless information" (BROWN a. DUGUID 2000a) has been well acknowledged in the literature and it is a stylized fact that has been stressed in our interviews as well (see also

BIRKINSHAW a. HOOD 2001, HOLM a. PEDERSEN 2000). In terms of BARTLETT and GOSHAL's (1995) vocabulary, the task in Silicon Valley lies in making the respective branch a "strategic leader" instead of a "black hole" in the multinational company's network. Different cases of branches in Silicon Valley have shown that individual social competences of the local manager are crucial to solve the problem of inside integration and outside communication. Some companies have stressed the need to foster involvement of managers and business units from the headquarters in projects done in Silicon Valley by visits and temporary participation in projects or sending trainees to the Valley.

Altogether, however, vested interests, the "not-invented-here syndrome" and the huge budgets that are swallowed by Silicon Valley branches set major hurdles for communication and transfer of innovation. A big problem seems to be to make all the employees think as one global team.

4.5 The Northern European phenomenon

As mentioned before, our interviews showed a bias towards German and Scandinavian companies. While our own nationality rendered the German bias natural, the high willingness of Scandinavian companies to respond was striking. It seemed as if Northern European companies had reflected on the topic even before we asked our questions. Very often, however, these companies stated that they did not feel they experienced cultural problems as much as other nationalities did. For an explanation, many observers have pointed to the small size of Scandinavian countries in combination with their remote location, which force them to be international. This might be a more plausible explanation than assuming that Scandinavians' business cultures are nearer to the American/Silicon Valley cultures than this is the case for other Europeans. Indeed, several of our interviews have pointed to the fact that Scandinavians think that business in their countries is done much differently than in the U.S. (more consensus, more reluctance to share ideas).

5 Culture-based versus economic based explanations – irreconcilable views?

The fact that companies have started to internationalize their research and development, among

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[8] A point to be added might be that many company representatives also said that the cultural competences, which employees acquired in Silicon Valley, were hardly used in their parent company and that frustrations of returning expatriates were the rule.

other things by locating in centers of excellence has been acknowledged by economists. However, when thinking about the calculus of firms to establish a branch or not, mainstream economic models rarely take into account costs of local integration and networking and even the less cultural aspects. The image of the entrepreneur is one of the central themes of economics, even though many models have problems to deal with novelty and innovation. During the last decades, several approaches have also acknowledged the importance of the local milieu and the region for innovation (e.g. ASHEIM 1996). But altogether, mainstream economists still have a hard time to deal with the fact that the "laws" according to which agents interact are not universally the same. These unique or distinctive patterns of interaction are often summarized under the term culture. Silicon Valley is an interesting case, as it is the incarnation of economic striving for growth and capital, while also relying heavily on a special culture, ecosystem and habitat.

The observation that local milieus play an important role especially for innovation have created a need for economists to explain unique innovation trajectories of regions. While mostly rejecting pure cultural explanations, economists have reinvented the idea of history. Referring to path dependence, multiple equilibria, lock-in effects and irreversibility of processes, they explained why locations can have unique paths of evolution that are not easily replicated in other places (e.g. ARTHUR 1994). With complex mathematics, they were even able to put this into formal models.

Our study has contributed to the recognition that not only culture influences business behavior, but above all also that locations and regions – in terms of the interaction of their decision-makers – can develop their own cultures, which is often related to their economic development. While we as well as others have used the term culture for both instances, this may be misleading, as it does not have the same conceptual background.

Silicon Valley seems to operate at the intersection of multiple cultures. However, it does not seem as if this diversity influences the resulting ecosystem. We would rather say that Silicon Valley's ecosystem – because it has operated so successfully for a long time – sets certain standards, to which newcomers orient their activities. Regional culture and the economics of the Valley are intertwined. Regional culture has proven to be an effective framework for the economic activities pursued in the Valley, so that it sets a benchmark for a successful and innovative microcosm.

While cultural differences do not set insurmountable barriers for foreigners, a lacking ability to integrate locally may harm business opportunities and access to information and cause costs or not lead to the expected revenues in a high-cost environment like Silicon Valley. This is a major conclusion of our study that would require companies to take into account integration costs and competences as determinants of their innovative capacity, instead of just being lured by the global reputation of a location like Silicon Valley that seems to promise innovative power to everybody.

Even though our study was exploratory by nature, we believe it can contribute to an understanding of the costs, reasons for failure and dynamics of integration of multinational companies into a technological hotbed or center of excellence. Silicon Valley's specialization on certain "general purpose technologies" (which refers to technologies whose application possibilities are broad, even though not ubiquitous) render it an attractive milieu for companies from many sectors (for instance the automobile industry, which develops smart cars there). Some of these industries are subject to global competition that may to some extent be guided by the local integration of their companies in such centers of excellence. Global technology leadership can therefore be determined by cultural or socio-economic competences of companies as much as their internal innovation potentials.

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