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Social capital, innovation policy and the emergence of the knowledge society

A comparison of Sweden, Japan and the USA

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Foreword

Does the growing knowledge based economy need other norms, attitudes and relations among its actors than the raw material based economy? This question is discussed in the report, which compares the social capitals of Sweden, Japan and the United States. The analysis is focused on three fields:

- Relations on the labor market; employer-employee relations in the individual enterprise as well as relations between trade unions and employers and their federations (industrial relations).
- Norms, relations, formal institutions and organizations connected to innovations and economic growth and renewal
- The social capital of the civil society.

The report has been produced within the framework of two projects, “Social capital as a means of growth policy” and “Relation building for local economic growth”, of which the latter was co-financed by the European Union’s Regional Fund.

The report is written by Hans Westlund at ITPS’ Östersund office.

Östersund, June 2004

Sture Öberg,
Director-General

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Svensk sammanfattning

I denna rapport diskuteras betydelsen av socialt kapital, dvs. informella normer och relationer, i övergången från industriell till kunskapsbaserad ekonomi i tre ekonomiskt avancerade länder: Sverige, Japan och USA. Analysen fokuseras på tre områden:

- Relationer på arbetsmarknaden, mellan arbetsgivare och arbetare i det enskilda företaget såväl som relationer mellan fackföreningar/fackförbund och arbetsgivare och arbetsgivarorganisationer (industriella relationer).
- Normer, relationer, formella institutioner och organisationer som är kopplade till innovationer, ekonomisk tillväxt och förnyelse.
- Det civila samhällets sociala kapital.

På det förstnämnda området, arbetsmarknadsrelationer, byggde de tre länderna upp skilda nationella system under den tillverkningsindustriella epoken. Dessa system var baserade på historiskt-kulturella faktorer – de existerande sociala kapitalen med relationer och normer – men var anpassade till det nya industriella produktionssystemet. I Sverige, med en stark, centraliserad stat med rötter tillbaka till 1500-talet, spelade staten en aktiv roll i formandet av relationerna mellan arbetsmarknadens parter. I Japan skapade en tradition av ”gruppism”, hierarkier och ömsesidiga skyldigheter gemensamma normer i ett mycket decentraliserat system. I USA kom relationerna på arbetsmarknaden att baseras på marknadsmässiga kriterier, där individens konkurrenskraft på en flexibel arbetsmarknad utgjorde den enda grundtryggheten.

Vart och ett av dessa system fungerade bra så länge som tillverkningsindustrin var den drivande kraften i ekonomin. Slutsatsen blir således att dessa tre framgångsrika industriländer lyckades forma relationer och normer för det industriella produktionssystemet som överensstämde med ländernas historiskt-kulturella traditioner. På detta sätt formade länderna sociala kapital för sina arbetsmarknader, med tillräckligt stor homogenitet – och tolerans – för att undvika förödande konflikter.

Också vad gäller normer, relationer, institutioner och organisationer kopplade till innovationer och ekonomisk tillväxt, utvecklade länderna var för sig framgångsrika men olika tillväxtmodeller för den tillverkningsindustriella ekonomin. Dessa modeller var byggda på respektive lands kultur, traditioner och existerande sociala kapital. Både Sverige och Japan hämtade många lärdomar från amerikanska innovationer och produktionsmetoder och utvecklade sina egna innovationssystem – långt innan begreppet myntats – men dessa lärdomar anpassades till ländernas speciella säregenheter.

Rapportens analys pekar mot att USA och särskilt Kalifornien har tätpositionen i utvecklingen av kunskapsekonomins innovationer och tillväxt, samt de normer och relationer och institutionella uttryck som under stödjer detta. Sverige och Japan tvingas idag vänja sig av med mycket av det som togs för givet under industriepoken. De båda staterna vidtar idag institutionella och organisatoriska förändringar för att underlätta kunskapsekonomins tillväxt. Exempel på sådana är avregleringar, ökade anslag till utbildning och forskning och krav på att universiteten ska samverkan med näringslivet, ökad fokus på behoven av riskkapital, osv. Det icke-institutionaliserade sociala kapitalet är däremot betydligt svårare att förändra med enkla politiska åtgärder, av typen anslag till och beslut att skapa formella institutioner/organisationer. Ändå förändras de sociala kapitalen i de två länderna. Nya värderingar, normer och nätverk ersätter sakta de som dominerade under industriepoken. Innebär detta att politiken inte kan påverka de sociala kapital som diskuterats här? Inte nödvändigtvis.

I motsats till USA har statsmakterna i såväl Sverige som Japan en tradition av att ”hjälpa” de ekonomiska aktörerna att skapa plattformar, relationer och nätverk. Det är möjligt att statens roll i förändrandet av näringslivets sociala kapital ligger just på dessa områden. Den avgörande frågan blir då vilka aktörer som ska prioriteras. En politik för innovationssystem i en växande kunskapsekonomi måste riktas mot helt andra aktörer än dem som idag i många regioner tillhör de ledande aktörerna.

När det gäller det tredje området som analyseras i denna rapport, civilsamhällets sociala kapital, förefaller dess påverkan på näringslivet svår att belägga såväl teoretiskt som empiriskt. Teoretiskt sett baseras näringslivet på en marknadsprincip medan civilsamhället baseras på principer för ömsesidighet och omfördelning. I empiriska undersökningar är

det bara i Italien som regionala samband mellan civilitet och ekonomi har kunnat beläggas. Regionala skillnader i civilitet inom ett land förefaller i allmänhet vara för små för att de ska kunna utöva några systematiska skillnader på näringslivets utveckling.

I diskussionen om civilsamhällets inflytande på ekonomiska variabler finns emellertid ett ofta förbisett perspektiv, nämligen marknadens. På marknaden utgör civilsamhällets individer konsumenter som väljer mellan näringslivets produkter. Individernas val av produkter styrs inte bara av priset utan också av olika sociala överväganden, preferenser, normer, värderingar, osv. Dessa sociala överväganden påverkas som regel av den information som individen får från sin sociala omgivning, däribland det civila samhällets organisationer. På detta sätt påverkar det civila samhället konsumenternas val av produkter och därmed även indirekt företagens beteenden.

Dagens näringsliv utvecklar i ökad utsträckning strategier för att hantera civilsamhällets trender och preferenser och använda dem som ett konkurrensmedel. Det finns till exempel multinationella detaljhandelsföretag som marknadsför sig med en etisk profil. Aktuell forskning visar också på tendenser hos storföretag att etablera samarbete med organisationer i civilsamhället med syftet att reducera företagens risker att bli offer för – och öka deras möjligheter att dra nytta av – de förändringar för företagens produktion, design och marknadsföring som organisationer och intressegrupper driver fram.

Ur detta företagsperspektiv påverkar civilsamhället näringslivet som konsumenter och medborgare. Men detta äger endast i begränsad utsträckning rum på lokal och regional nivå, baseras allt mindre på stabila värden och långsiktiga förtroenden och påverkar allt mindre transaktionsrelaterade kostnader. Istället är detta inflytande starkt kopplat till globalisering, baserad på förändring av värderingar och uttrycks å ena sidan i konsumenters och medborgares aktiviteter och å den andra i företagens produktinnovationer och design. Företag som utvecklar metoder att upptäcka, suga upp och dra nytta av civilsamhällets förändrade trender i sina innovationsprocesser skaffar sig en konkurrensfördel. Regioner som utvecklar ett tolerant och diversifierat civilsamhälle blir – jämfört med regioner med ett homogent civilt samhälle – mer attraktiva för kreativa människor och uppvisar positivare utvecklingstendenser. I det framväxande kunskapssamhället är det med andra ord inte i första hand

det civila engagemanget, antalet organisationer och stabila normer, värderingar och nätverk som bidrar till ekonomisk utveckling. Istället förefaller det vara regioner med civila samhällen som kännetecknas av tolerans och diversifierade värderingar och nätverk som har den främsta utvecklingen.

Analysen av de tre ovannämnda ämnesområdena visar att de tre länderna under industriepoken var för sig byggde åtskilda, men i termer av tillväxt, framgångsrika nationella modeller med stora skillnader i sociala kapital och i dessas institutionaliserade och organisatoriska uttryck. I den nuvarande övergången till kunskapsbaserad ekonomi är det den amerikanska och särskilt den kaliforniska modellen som hittills har varit mest framgångsrik. Det konkurrensinriktade, mer flexibla och mer globaliserade kaliforniska samhället förefaller ha erbjudit den bästa jordmånen för kunskapsekonomins genombrott.

Jämfört med de svenska och japanska modellerna, med betydligt mer homogena sociala kapital och formella institutioner och organisationer, är dock den kaliforniska/amerikanska modellen inte en modell, utan ett antal, stundom samexisterande, stundom konkurrerande modeller, var och en med sitt eget sociala kapital och formella institutioner och organisationer. Dessa kaliforniska/amerikanska modeller förefaller skilja sig åt mellan branscher och regioner i mycket högre utsträckning än vad fallet är i Sverige och Japan. Givet de avancerade utbuds och efterfrågeförhållandena, som återfinns i alla tre länderna i form av hög utbildnings- och forskningsnivå och konsumtionsmönster, förefaller den speciella amerikanska institutionella och organisatoriska diversifieringen ha skapat starka incitament och få hinder för kunskapsekonomins expansion.

Industrisamhällets system var i huvudsak nationella system. Kunskapsekonomins och globaliseringens tillväxt har gjort många nationella beståndsdelar i samhällenas sociala kapital och formella institutioner/organisationer förlegade. En tentativ, allmän slutsats av denna rapport är att det är diversifieringen i det kaliforniska/amerikanska samhället som har bidragit till framväxten av high-techindustri och andra tillämpningar av kunskapsekonomin. Detta har hittills ägt rum i ett relativt begränsat antal regioner vilka har haft förmågan att kombinera diversifiering och tolerans.

Om denna slutsats är riktig, betyder den för Sverige och Japan att det i första hand är homogeniteten i dessa samhällen som svårligen kan kombineras med den globala kunskapsekonomin. I kravet på snabb informationsinhämtning och snabb och kreativ omvandling av informationen till produktiv användning blir de nationella systemen alltmer otillräckliga. Kunskapsekonomins fortsatta tillväxt i Sverige och Japan – och ekonomisk tillväxt i allmänhet – är därför beroende av ländernas förmåga att omforma sina sociala kapital och formella institutioner/organisationer i en riktning som

- underlättar import och integration av existerande, utländsk kunskap,
- producerar ny kunskap baserad på förvärvad, existerande kunskap,
- kombinerar och omformar olika kunskaper till produktinnovationer, och
- kombinerar och omformar olika kunskaper till marknadsinnovationer.

Diversifiering och tolerans förefaller vara avgörande beståndsdelar i ett socialt kapital som maximerar kunskapsimport, kunskapsproduktion och innovationer. Policyimplikationerna av en sådan slutsats är omfattande och innebär att framgångsrika innovationssystem och ekonomisk tillväxt är beroende av ett stort antal policyområden. Den stora utmaningen blir i detta perspektiv att forma en strategi i vilken inte bara näringspolitiken, utan även så skilda politikområden som utbildnings-, forsknings-, invandrings-, hälso- och kulturpolitiken utgör integrerade delar av en nationell tillväxtpolitik i ett globalt kunskapssamhälle. En sådan tolkning ligger väl i linje med den ”tredje generationens innovationspolitik” som nyligen introducerats av EU-kommissionen och som betraktar innovationspolitiken som ett nödvändigt inslag i alla politikområden.

English summary

This report discusses the role of social capital, i.e. informal norms and relations, in the transition from industrial economy to knowledge economy in three economically advanced countries; Sweden, Japan and the United States. The analysis is focused on three fields:

- Relations on the labor market; employer-employee relations in the individual enterprise as well as relations between trade unions and employers and their federations (industrial relations).
- Norms, relations, formal institutions and organizations connected to innovations and economic growth and renewal
- The social capital of the civil society.

In the first field, the three countries built up different national systems of labor market relations during the manufacturing-industrial economy. These systems were based on historic-cultural factors – the existing social capitals with relations and norms – but were adapted to the new industrial production system. In Sweden, with its strong centralized state and roots that go back to the 16th century, the state played an active role in the shaping of industrial relations and employer-employee relations. In Japan, a tradition of groupism, hierarchies and mutual obligations formed a very decentralized system with common norms. In the United States, industrial relations and employer-employee relations were based on market criteria where the individual's competitiveness on a flexible labor market was the basic security.

Each of these systems worked very well as long as the industrial society worked well. Thus, the conclusion is that these successful industrial economies were able to form relations and norms for the industrial production system that were in conformity with their historical-cultural traditions. In this way they formed a social capital for the labor market with sufficient homogeneity – and tolerance – to avoid large and devastating conflicts.

Also concerning norms, relations, institutions and organizations connected to innovations and economic growth, each of the countries developed successful, but different, models for growth in the manufacturing-industrial economy, models built on their cultures, traditions and existing social capital. Both Sweden and Japan learned much from American innovations and production methods and developed their own innovation systems – long before the term was coined – but these lessons were adapted to the countries' peculiarities.

The analysis indicates that the United States and especially California, so far leads in developing growth and innovations of the knowledge economy as well as corresponding norms and relations and institutional expressions of these. Sweden and Japan have to unlearn much of what was taken for granted during the industrial era. The Swedish and Japanese governments are taking measures to facilitate the growth of the knowledge economy by institutional and organizational changes: deregulations; increasing grants to higher education and research and demands for university-industry cooperation; increased focus on the needs for venture capital, etc. The non-institutionalized social capitals are much harder to change with simple policy measures, like allocating resources and creating formal institutions/organizations. Still the social capitals of the two countries are changing; new values, norms and networks are slowly replacing the industrial ones. Does this mean that policies are unable to affect the kind of social capitals that have been discussed here? Not necessarily.

In contrast to the United States, government both in Sweden and Japan has a tradition of "helping" the economic actors to form platforms, relations and networks. It is possible that governments' role in changing business life's social capital lies precisely in this field. The crucial question is then: which actors should be prioritized? A policy for innovation systems in a growing knowledge economy must be directed towards other actors than those belonging to today's leading actors in many regions.

Concerning the third field, civil society's social capital, its impact on business life seems hard to confirm both in theory and in practice. In theory, business life is based on a market principle, while civil society is based on principles of reciprocity and redistribution. In practice, it is only in Italy that studies have shown correlation between civility and

economic performance. Regional disparities in civility in a country seem in general too small to have any significant impact on business life's transaction-related costs.

However, in the discussion on civil society's impact on economic variables, there is an often neglected perspective, viz. *the market*. On the market, the individuals of the civil society are consumers choosing between the products of business life. The individuals' choices of products are not only determined by the price but also by various types of social considerations, preferences, norms, values, etc. These social considerations are as a rule influenced by the information the individual receives from its social environment, including the civil society's organizations. In that way, the civil society affects sales of products and indirectly the behavior of enterprises.

Business life is increasingly developing strategies to handle trends and preferences in the civil society and use them as a competitive device. There are examples of multinational retail trade companies marketing themselves through an ethical profile. Recent research indicates a tendency among large companies to establish forms of cooperation with the civil society aimed at reducing the companies' risks of being victims of, and increasing their chance to utilize, changes in their industry caused by NGOs and interest groups.

In this enterprise perspective, the civil society is influencing business life through consumers and citizens. But instead of this taking place at local and regional level, by being built on stable values and long-term trust, and by having an impact on transaction-related costs, this influence is strongly connected to globalization, based on changes in values and preferences, and is on the one hand expressed in changes in consumption and citizens' activities and on the other in companies' product innovations and design. Enterprises that develop methods to observe, absorb and utilize civil society's changing trends in their innovation processes acquire a competitive advantage. Regions that develop a tolerant and diverse civil society become – compared to regions with a homogeneous civil society – more attractive to creative people and show a more positive development. Thus, in the emerging knowledge society, it is not foremost the civic engagement, number of organizations and stable norms, values and networks that contribute to economic development.

Instead it seems to be a civil society characterized by tolerance and diverse norms, values and networks.

The study of the three fields shows that the three countries, during the industrial epoch built distinctive, but in terms of growth, successful national models with large differences in social capital and its formal institutional and organizational expressions. In the transition to the knowledge economy it is the American, particularly the Californian, model that so far has been most successful. The competitive, more flexible and more globalized Californian society seems to have offered the best soil for the knowledge economy's breakthrough.

However, compared to the Swedish and Japanese models with social capitals and formal institutions and organizations of a considerably larger homogeneity, the Californian/American model is not *a* model, but a number of sometimes coexisting, sometimes competing *models*, each with their own particular social capital and formal institutions and organizations. These Californian/American models seem to differ between industry and region to a much larger extent than is the case in Sweden and Japan. Given the advanced supply and demand conditions, which exist in all the three countries in the form of high levels of education/research and consumption patterns, this special American institutional/organizational diversity seems to have created strong incentives and few obstacles for the expansion of the knowledge economy.

The systems of the industrial society were mainly national systems. The growth of the knowledge economy and globalization has made many national components of societies' social capital and formal institutions and organizations obsolete. A tentative, general conclusion of this report is that it is the diversity of the Californian/American society that has contributed to the growth of high-tech industry and other applications of the knowledge economy. This has so far happened in a relatively small number of regions which have been able to combine diversity and tolerance.

If this conclusion is correct, for Sweden and Japan this means that it is principally the homogeneity of these societies that cannot coexist with the global knowledge economy. National systems are no longer sufficient in order to obtain information rapidly, develop it creatively and make productive use of it. The continued growth of the knowledge economy in Sweden and Japan – and economic growth in general – is dependent on the countries' ability to transform their social capital and formal institutions and organizations in a way that

- facilitates import and integration of existing, external knowledge,
- produces new knowledge based on acquired, existing knowledge
- combines and transforms different knowledge to product innovations, and
- combines and transforms different knowledge to marketing innovations.

Diversity and tolerance appear to be crucial component parts of a social capital that maximizes knowledge import, knowledge production and innovations. The policy implications of such a conclusion are wide and imply that successful innovation systems and economic growth are dependent on a number of policy fields. In that case, the great challenge would be to form a strategy in which not only industrial policy, but also policies for e.g. education, research, immigration, culture and health become integrated parts of the national growth policy in the global knowledge society. Such an interpretation is well in line with the "third generation policy of innovation", recently launched by the European Commission, which stresses innovation policy as a necessary ingredient in all policy areas.

1 Introduction

After the publication of Robert Putnam's book *Making Democracy Work*, 1993, the concept of social capital has become enormously popular in several fields of policymaking and research. Despite the fact that capital is a traditional economic concept, the concept of social capital has come into being and has been further developed primarily in the subjects of sociology and political science. There has been a great deal of skepticism towards using the concept of capital for social capital among certain prominent representatives of the discipline of economics (for example Solow (1997 and 2000), Arrow (2000) and Dasgupta (2000). However, other leading economists have accepted the concept, incorporated it into economic concept terminology, and attempted to measure it and evaluate its importance. Becker (1996) has treated from a theoretical point of view social capital as a variable where the utility for the individual is concerned. Aoki (2001) uses the concept when he discusses the tacit knowledge needed by venture capitalists. Empirical studies have been presented by, among others, Knack & Keefer (1997), Knack (1999), Cooke and Wills (1999), Glaeser et al (2000) and Temple (1999).

There is no recognized, established definition of social capital in the discipline of economics and even to a lesser extent a common definition that extends over disciplinary boundaries. In this paper, social capital is defined as *social, non-formalized networks that are filled by the networks' nodes/actors with norms, values, preferences and other social attributes and characteristics.*[1] An important feature of this definition is that it distinguishes between the networks and the norms etc they are filled with. Social capital is considered as a type of infrastructure with nodes and links. The nodes consist of individuals and organizations, which establish links between each other. The construction of links is governed by the individuals'/organizations' norms, preferences and attitudes, which can thus prevent emergence of links between individuals

[1] This definition is a further development of Westlund & Bolton (2003) who "define spacebound social capital as spatially-defined norms, values, knowledge, preferences, and other social attributes or qualities that are reflected in human relations. In network terms this may be expressed as meaning qualities, capacity, objectives, and quantity of the nodes (actors) and qualities, capacity, objectives and quantity of the links in primarily informal, spatially-demarcated social networks."

or organizations as well. In the links, different types of information are distributed between the nodes. From an infrastructure perspective, this distribution of information can be compared with traffic in the transport infrastructure. Social capital's impact on society depends on both its quality and quantity. The norms, preferences and attitudes of the nodes, and thereby the kind of information being distributed in the links, is at least as important as is the number of links. A "strong" social capital can thus have preservative as well as progressive effects, depending on its qualitative characteristics.

This approach to social capital is partly connected to the criticism that has been raised against Putnam. Among others, Portes & Landolt (1996) have criticized Putnam for focusing only on the positive effects of social capital, without considering the negative ones. Common norms are not always positive but may create conformity and restrictions for individual freedom as well as business initiatives. Putnam (2000) has responded to this criticism by admitting that social capital may have a "dark side" which might be counterproductive to tolerance.

Two concepts that are related to social capital are culture and institutions. However, culture should be regarded as a considerably broader concept than social capital. A common definition is that culture is "shared values and beliefs" (Casson & Godley 2000, p. 2). Institutions are also normally used as a very broad term. North's (1990) view is that institutions may be formal (like rules) or informal (like norms of behavior). In North's opinion, institutions are the rules of the game and organizations (government, enterprises and other organizations) are the players. Thus, both "culture" and "institutions" include values and norms, but not networks, which North probably would say belong to the organizations.

In contrast to North's division of institutions and organizations, most scholars that have made use of the concept of social capital have used it in a way that includes both certain parts of what North denominates institutions and certain parts of what he terms as organizations. Social capital is normally considered as *non-formalized* norms and values but also as the bearers of these values, i.e. the actors and the relations, links, networks they form. Also when it comes to the "organizational" part of social capital, the focus lies on the informal relations, links and networks that are being built by the actors. As a consequence, a formal organiza-

tion is not considered being social capital; but social capital – in terms of informal norms, non-formalized relations and networks – is an inseparable component of every organization. Accordingly, instead of differentiating between institutions and organizations, the social capital perspective differentiates between what on the one hand is formalized in organizational rules, charters and laws, and on the other hand the informal norms, relations and networks that coexist with the formal rulebook and the official policies, but are not directly governed by formal decisions. This view of social capital, as being the informal counterpart to formal institutions and organizations, makes social capital much harder to measure than the formalized parts of institutions and institutions. Therefore, many scholars, as e.g. Putnam (1993a, 2000), have used number of members and other formal aspects of organizations as an approximate measure of a certain social capital.

In the discipline of economics, the concept of social capital is only one decade old but the phenomena that are today referred to as social capital have been commented on by, among others, Marshall and Schumpeter[2], albeit in the form of other terminology. Moreover, Bruni & Sugden (2000) have shown that the eighteenth-century philosopher-economists Hume, Smith and Genovesi had a clear view of the importance of trust and other elements on society's economic life. These are today summarized under the concept of social capital.

One example of the importance attached to the concept is the OECD report *The Well-being of Nations: The Role of Human and Social Capital*, 2001. The OECD report defines social capital as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups" (p. 41). This general definition is applicable to all parts of society. However, most studies – including the OECD report – have stuck to the "Putnamian" tradition and focused on the social capital of the civil society. This does not mean that we completely lack information about aspects of social capital in enterprises and economic life in general, but studies of business networks, norms and values – mainly in the discipline of business administration – have generally not been associated with the theories of social capital.

[2] The concept of social capital has, however, an older history in other disciplines. For a review of this and of Marshall's and particularly Schumpeter's discussion of these phenomena, see Westlund and Bolton (2003).

"Capital" is one of the most fundamental prerequisites for business and it is necessary to have an opinion regarding the extent social capital is comparable to physical capital. One of the most exhaustive attempts made hitherto to discuss the relationship of the concept of social capital vis-à-vis traditional forms of capital has been done by Westlund & Bolton (2003), on which Table 1 is based. One of the important characteristics of social capital that they discuss is connected to its vintage aspects. Social capital differs from real capital and human capital in that, as with wine, older vintages are not necessarily less valuable than newer wines. Social capital can be described as a blend of networks, norms, knowledge, etc. of an extremely wide range of vintages in which the older ones function as stabilizing factors and the newer ones as factors of change. Certain elements among both new and old vintages may have negative effects on e.g. labor supply, entrepreneurship etc., but social capital, unlike port wine, does not permit these elements being omitted by a wine-blender. As the economy changes, social capital must be renewed in order to preserve its productive function (quality), i.e., it has to be topped up by new vintages while simultaneously preserving "the best" of the old. Without this renewal, it becomes increasingly out of touch with economic developments and assumes an increasingly negative character.

Table 1 A summary of similarities and dissimilarities between social capital and the other capital forms, concerning productivity, vintages, accumulation, possession and complexity.

Similarity	Dissimilarity
Productivity	
Social capital are sunk costs that might become obsolete.	
Social capital can be put to good or bad uses (from society's perspective).	Social capital expresses interests of actors, good or bad from society's perspective. It is not neutral with regard to society's interests.
Vintages	
Social capital consists of vintages.	The vintages of social capital are more comparable to a port wine than to other capital forms. The composition of vintages is decisive. There is no simple correlation between age and decreasing productivity.
Accumulation and maintenance	
Social capital depletes if it is not maintained.	Social capital is a product of both intentional investments and an unintended by-product of other activities.
Social capital is a result of past activities.	Accumulation of social capital does not necessarily need deliberate sacrifices for future benefits.
	Social capital is harder to construct through external interventions
Rights of possession vs. public goods	
Social capital is not genuinely public, since access to it demands connection to a network and/or certain skills. The network/club may exclude outsiders from access.	Social capital cannot be individually possessed. Social capital resembles a club good.
Complexity and levels of aggregation	
Diversified social capital means less vulnerability to economic structural changes.	Social capital is the most diversified, least homogeneous form of capital.
	Aggregating social capital belonging to different levels meets great methodological difficulties.

Source: Adaptation of Westlund & Bolton (2003)

This circumstance plays a key-role in this study which aims at comparing the social capitals of Sweden, Japan and California during the ongoing transformation from a manufacturing-industrial society to a knowledge society. Well aware of the lack of exactness of the concepts, we use here "knowledge society", "knowledge economy" and "knowledge-based economy" as denominations of the same phenomenon, albeit from different perspectives. We define knowledge economy as an economy in which the generation and exploitation of knowledge play the predominant role in society's production.

A basic hypothesis can be expressed in the following way: During stable growth phases the economy benefits from strong, stable societal networks that are closely adapted to the needs of the economy. Actors (nodes) form links to distribute and reproduce desirable norms, values and behavior which are in conformity with the economy's demand. When economic-structural changes happen, the economy needs new industries with new actors to obviate stagnation. However, the existing networks are adapted to the earlier economic structure and do not necessarily support the restructuring of the economy and the emergence of new actors. The new actors need to build new, competing networks that distribute and reproduce norms, values and behavior in conformity with the new economic actors' demand. If the networks of the old economic structure are too strong, they may retard or prevent the emergence of new actors, new networks and economic restructuring. With Schumpeter's expression, one might argue that there is a need for a "creative destruction" of obsolete social capital, in order to facilitate the creation of new social capital. The transformation from industrial society to knowledge society is a huge-scale example of this economic restructuring and the needs of new economic and social networks to emerge.

In contrast to the predominating focus on the social capital of the civil society, this study focuses on the *enterprise-related social capital*. This concept is discussed and analyzed in Section 2. Based on the definition that enterprise-related social capital consists of *social networks filled with norms, values, preferences, etc, within or externally connected to the enterprise*, the analysis shows that firms make intentional and unintentional investments in social capital in several fields, even if classified in other denominations. In Section 3, a comparison between the knowledge society and earlier societal forms is made. A tentative conclusion is

that the transformation from a manufacturing-industrial society to a knowledge society needs a corresponding transformation of the social capital in order to enable growth of business and renewal of the economy. Section 4 discusses the selection of Sweden, Japan and USA/California as case-study states. In Section 5 a brief comparison of social capital in the three states is made in three areas relevant to economic growth: relations on the labor market; social capital and institutions for growth, innovations and renewal and the social capital of the civil society. Section 6 contains some concluding remarks.

2 Enterprise-related social capital

As noted above, most studies of the phenomena that are considered as social capital have, in the tradition of Putnam (1993a,b, 1995a,b,c, 1996, 2000) mainly focused on the so-called *social capital in civil society*, and used a broader perspective and did not focus specifically on the enterprises and the public sector. Research on these types of phenomena in enterprises and the public sector has mainly been made using a different terminology. Rauch's (2001) survey of business and social networks in international trade is an example of this. A substantial part of the management literature focuses on enterprise-internal relations, which we here define as a component of enterprise-internal social capital. Another example of business administration concepts that is considered here as a component of an enterprise's social capital is Customer Relations Management (CRM). Thus, in order to underline the fact that social networks, trust and other factors that are linked to social capital can also be found in business life and the public sector, the term *enterprise-related social capital* is used here as a summarizing concept for these phenomena.

It can be argued that there is a certain composition of an enterprise's social capital that optimizes its growth. The social capital should be adapted to factors such as type of production, labor force, suppliers, customers, as well as the enterprise's environment in a broader sense. The enterprise itself can form to a large extent the type of social capital it wants by investing time and other resources. A number of other factors also have an impact on an enterprise's social capital, e.g. its labor and its environment. The enterprise's environment consists of many actors but Putnam has stressed the local civil society as being one of the key actors. Another important component part of an enterprise's environment is formed by political decisions and measures.

Thus, in principle, three types of actors can make the creation of this social enterprise-related capital:

- the enterprises themselves and their organizations
- the politically governed sector
- the civil society and its organizations

The enterprise itself is for obvious reasons the prime actor in the creation of its own social capital. The enterprise forms and maintains the social capital it considers best adapted to its current and future production by investing in internal and external links and nodes (employees, partners, customers, politicians, etc). Initially, one of the most important investments in an enterprise's external social capital may be the choice of location. Table 2 provides a schematic picture of the component parts of enterprise-based social capital.[3]

Table 2 Social capital of the enterprise broken down into different component parts

<table>
<tr><th>Social capital internal to the enterprise</th><th colspan="3">The enterprise's external social capital</th></tr>
<tr><td rowspan="2">Links/relations filled with attitudes, norms, traditions etc. that are expressed in the form of:
- Company spirit
- Climate for cooperation
- Methods for using tacit knowledge, codifying knowledge, product development, conflict resolution, etc.</td><td>Production-related social capital</td><td>Environment-related social capital</td><td>Market-related social capital</td></tr>
<tr><td>Links/relations to suppliers, product users, partners in cooperation and development</td><td>Links/relations to the local/regional environment, to political decision-makers etc. (Lobby capacity, etc.)</td><td>Trademarks and other general customer relations</td></tr>
</table>

[3] A term used in business administration and management for some of the concepts in Table 2 is "corporate culture". The concepts of production-related and environment-related social capital in the table have connections to the concept "relational capital", which has been discussed and analysed by, among others, Camagni 1995 and Capello 2001. In a spatial context these factors are also connected to the concept "regional milieu".

2.1 The enterprise's internal social capital

The basic division in Table 2 is between the enterprise's internal and external social capital. All actors in the enterprise, i.e. both the management and the employees, form the internal social capital. Mainly in the disciplines of management, business administration and business sociology, the literature in these topics has expanded heavily, although terms other than social capital has been used. One important topic is industrial relations or employee-employer relations. Under given historic-cultural and technologic-economical conditions, the enterprise uses the management methods that maximize the employees' productivity. As shown in section 5, these methods differ considerably between Europe, USA and Japan due to historic-cultural differences.

Another important topic in the literature related to enterprises' internal social capital is that of learning organizations, methods to use and develop organizations' tacit knowledge and transformation of tacit knowledge to codified knowledge. The observation that man knows more than he can tell has been made by many philosophers. Also Keynes has been quoted for saying that an economist always knows more than he can explain (Johnson & Lundvall 2001). The explicit distinction between tacit and codified knowledge was made by Michael Polanyi (1958, 1966). In particular during the 90's a growing share of literature has discussed the issue. Codified knowledge can be defined as formalized, stored, written or digitalized information, which can be used or tested by an other actor than the one that formalized the information (if the actor has access to the information and the necessary competence to use it). "*Tacit* knowledge is defined as knowledge that cannot be obtained by a mere sum of codified (digitalized) information. It can be generated through intimate 'indwelling' (Polanyi 1966:17) within a relevant local domain, or as personal knowledge through particular experiences and/or due to inherently personal qualities and competence; therefore it cannot become immediately available in open markets." (Aoki 2001: 308). Aoki uses the example of the knowledge needed by venture capitalists which, to a large extent, is tacit and non-codified. If codified knowledge were enough, "everybody" would be able to pick the winners and there would not be any need for venture capital.

In contrast to tacit knowledge, codified knowledge can be regarded as an asset that the enterprise deliberately can use to increase its competitive power. The task is often formulated in terms of commercializing or capitalizing the tacit knowledge to a controlled input in the production process or a product of its own. Being able to control the production of knowledge in an enterprise and the use of it in the production process gives the enterprise a competitive advantage and contributes to growth. In the knowledge economy, we also witness a rapid growth of firms that have codified knowledge as their remittal brief, e.g. consultants and education enterprises.

In our terms the strivings to transform tacit knowledge to codified knowledge are attempts to institutionalize a capital that is originally social and non-institutionalized. Not all tacit knowledge should be considered as social capital since some of the tacit knowledge is strictly personal. However, most tacit knowledge must be regarded as created in social interactions, which makes it a part of the social capital. From the enterprise's perspective, this means that codifying knowledge should be mainly considered as investments to be able to use parts of the existing social capital in an enterprise, but not as investments in new social capital per se.

The literature in this field has almost entirely focused on enterprises' investments to commercialize the parts of their social capital that consist of tacit knowledge. Very little attention has been given to how new enterprise-internal social capital is created. However, there is no doubt that an enterprise takes many intentional or unintentional steps that affect its internal social capital. Among intentional arrangements we find those devoted to affecting the company's spirit, culture and cohesion. Not less important are probably arrangements aiming at affecting the institutional capital of an enterprise. How a firm is organized has important effects on how it produces tacit knowledge and other components of social capital. It is a well-known fact that knowledge-producing enterprises normally have a much more horizontal organization than traditional hierarchical industrial enterprises. This can be seen as an indication that enterprises in the knowledge economy need another internal social capital than enterprises of the industrial age (see below) do. Thus, social capital is a crucial factor in the internal governance of firms.

2.2 The firm's production-related social capital

A striking development in recent research is the discussion of social capital in inter-firm relations, especially relations between firms and their suppliers. This stands in sharp contrast to the traditional perspective of economics in which the enterprise is a non-cooperative monolith that buys its input from suppliers and sells its output to customers. According to this view, the production-related networks of an enterprise are technical and economic, and exist only to fulfill the input and output services.

This simplified view is today sometimes referred to as production relations of the "Fordist" or manufacturing-industrial age, but that is not a correct description. Social networks, even among the actors of production, are not an invention of the knowledge economy. There are however arguments saying that they have become more important in the knowledge economy:

> *"In a knowledge-based economy the perhaps most significant rent originates from the way in which the easy exchange of knowledge, only partly understood, between and among a constantly changing configuration of firms within the community dramatically enhances their innovative capabilities. Reducing your development to commercialization time is often worth virtually whatever you have to pay and social capital contributes by cutting the expenses and reducing the time needed to benefit from knowledge residing elsewhere. As innovative capabilities become increasingly important so does social capital."*
>
> *(Maskell 2000:116).*

Maskell connects social capital not only to the firm's internal knowledge production (as we did in the former section) but also to knowledge exchange between firms that temporarily or on a more long-term basis have some kind of production-related links. Moreover, he explicitly connects social capital to firms' innovative capabilities. His argument is that social capital cuts expenses and reduces time needed for knowledge exchange between firms.

These arguments could further be developed. Social, non-formalized links, between a firm (and its co-workers) and firms with which it has production relations, increase the flows of knowledge and information between the firms. Feedback, from the firm to its suppliers and to the firm from its customers, is increased and speeded up. These links of acquaintance and trust are of obvious importance in R&D-projects, aimed at developing new products or production methods. They are probably also essential in the small, invisible development processes that take place in firms every day, which constitute the basis for new innovations.

During the last decade a growing interest in formalizing these formerly mainly spontaneous technical-economic networks can be discerned. The issue of innovation has been brought up on every developed nation's policy agenda. By institutionalizing innovation processes within *innovation systems,* policy makers attempt to achieve similar results at macro level as when firms make arrangements for transforming tacit knowledge to codified knowledge at micro level.

2.3 The firm's environment-related social capital

The border between a firm's production relations and its environment-related networks is not entirely clearly delineated. In a spatial context, production relations in principle constitute a component of the environment relations as well. Therefore, we delimit here the firm's environment relations with other firms to relations not being mainly technical-economical.

Even with this delimitation, Maskell's arguments concern the enterprise's environment as well, as he speaks about "community". This adds a spatial aspect to social capital. A firm's costs for, among other things, knowledge and information are influenced by social capital through the degree of trust and the climate of cooperation prevailing both in individual workplaces and between firms and actors in a region. Marshall (1920: 271) described this vividly in his nowadays celebrated account of the positive external effects which come about in industrial districts:

> *"The mysteries of the trade become no mysteries; but are as it were in the air, and children learn many of them unconsciously. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas."*

For generations of economists Marshall's industrial districts were merely a queer marginal note in the classic textbook of microeconomics. However, Porter's (1990) book on clusters marked a new and growing interest in the spatial milieu of firms (even if Porter in 1990 considered cluster as a functional, non-spatial concept as well). In the rapidly expanding cluster literature, clusters are normally defined as spatially delimited industrial systems regardless the size of the enterprises, whereas industrial districts are defined as spatial agglomerations of SMEs in one or a few complementary industries. As noted above, both concepts are connected to production relations as well as to more general relations to the firm's spatial environment. These general, spatially dependent networks consist in principle of:

- Non-technical-economic links to other firm's
- Links to local/regional politically governed bodies
- Links to the citizens of the civic society and their organizations

The first of these network types contributes to explain agglomeration phenomena such as the IT-industry in Silicon Valley. Enterprises emerge there and choose to locate there because "the air" is redolent of tacit knowledge and information (incl. gossip and rumors), potential partners and co-workers are there, the competitors are there and it is easier to watch and learn from them if you are near them, etc. Even if the firm has business with only a little fraction of all the other enterprises in the region, the presence of all the other firms is a positive external effect, a social environment that the firm benefits from. The open, innovative spirit that characterizes these agglomerations until they mature and eventually become petrified is closely allied to the encouragement of entrepreneurship.

The second of these network types is an expression of the firm's dependence on a predictable political-institutional infrastructure and the need for favorable political decisions also in a medium-term and short-term perspective. Those who wish might see these networks as a confirmation of the public choice theory, i.e. that politics does not work in accordance with its ideals. To achieve favorable decisions, to receive non-official information off-the-record, etc, the firm cannot restrict itself to let its individuals take part in the public debate and to vote in elections and referendums. It is in the interest of the firm to establish social relations with public decision makers, either directly or indirectly through branch organizations or lobbyist groups.

The third and last network type is an expression of a firm's need to be embedded in a local social context. This need of embedment varies depending on, among other things, the firm's size, alternative locations, space-bound capital, type of production, type of customer, type of labor, etc. In general a small firm with spatially fixed capital and production for the local market has great incentives to build a strong social capital with the local environment. A big, global firm with alternative locations, low investments in space-bound capital and production for the world market has much smaller incentives. Still, local units of global firms engage in building good local public relations through sponsoring or giving grants to local non-profit organizations and other similar purposes. The reasons may be twofold.

First, a global company may be more dependent on a good reputation than a local one. A global company not following the local informal rules of behavior might become worldwide news the next day. Increased consumer awareness about environmental, child labor and other such issues has caused many commercial firms to initiate reorganization of their production and distribution networks, which is also a sign that customer relations can no longer be confined to offering anonymous products at the best price. Generally speaking, the increased importance - and market value - of trademarks provides testimony that customer relations are being impinged on more and more by considerations which must be regarded as social. It is no longer the product alone but also the customer relationship established by the trademark that constitutes a firm's market value (see below).

Another reason might be that both the firm's management and employees are individuals with social needs. Some of these needs are often expressed in becoming an accepted and respected part of the local community. Contributions to the local civic society and its organizations thus raise the status of both the firm and its employees and increase the experienced individual welfare. The connections to public choice theory are evident here as well.

2.4 Market-related social capital

In Table 2, a trademark is seen as a component part of an enterprise's social capital that is created and maintained through marketing. With this approach, the trademark is a relational network to the anonymous mass of customers, to which the enterprise has no personal relations. Here the competitive aspect of social capital is obvious. By creating relationships with customers in diverse ways (advertising, personal contact, servicing contracts, etc.) a firm attempts to shut out competitors from the network it has established. It can build similar networks with suppliers. An established firm with strong customer and supplier networks can use these to shut out competitors, which perhaps have newer and more productive physical and human capital, from the market. In this way, the established firm might temporarily substitute renewal of its physical capital with investments in social capital. The new enterprises have to find new, unestablished market segments or else break down parts of the established firm's customer and supplier networks in order to force its own way into the market.

Including trademarks in the concept of social capital is not without objections. A trademark is an asset that, as opposed to other forms of social capital, is actually property that is not directly linked to a specific owner but can be bought and sold in the same way that enterprises are bought and sold. While social capital in civil society is, to a varying extent, semi-public goods or club goods (see Buchanan 1965), enterprise-related social capital consists of social networks that the enterprise has built up and may dispose of as it wishes. Most of these social networks cannot be separated from the enterprise's productive and/or financial activities, but they can of course be acquired since an enterprise, or part of it, can be bought and sold. However, the trademark is an example of a type of social network that is not necessarily integrated with other activities of the

enterprise. This type of social capital is a private good, property in the legal sense of the term, and can thus be directly valued on the market. Thus, it might be more correct to say that a trademark is based on a firm's social capital, but that it is transformed, institutionalized and commercialized in the same way as in the case of tacit knowledge being transformed to codified knowledge.

3 Does the knowledge economy need a new social capital?

Several scholars (like Maskell 2000, quoted above) have underlined the increased importance of social capital as society has transformed from a manufacturing-industrial economy to a knowledge economy. Although "knowledge society" or "knowledge economy" are concepts used every day in debates on society, it is not easy to find a concise summary of the characteristics of the concepts and how the knowledge society is distinguished from earlier societal forms. Table 3 is an attempt to present some key attributes of the knowledge and industrial societies and of the mercantilist era of the pre-industrial society.

Table 3 shows that the differences between the knowledge and industrial societies are at least as comprehensive as between the industrial society and the mercantilist era. Knowledge, the individual bearers of it and their social infrastructures, are some of the key elements of the knowledge society. This makes new demands on the individual's qualifications and affects relations between the individual and the organizations as well as gender relations.

A presumption based on Table 3 is that a social capital adapted to the needs of the industrial economy cannot fulfill much of the needs of the knowledge economy. This can be illustrated by a Swedish example.

During Sweden's industrialization, the pre-industrial ironworks regions became the centers of the modern steel industry. *Bruksandan*, a "local industrial community spirit" was formed in these communities and subsequently this spirit also became a characteristic of communities with other manufacturing industries. The local industrial community spirit thus became a term for the norms and values that were created from the relations between a dominant local employer and a closely-knit, locally recruited group of workers with a strong trade union, during the industrial era. The spirit of common interest, which was formed through demands and counter-demands, resulted in the local factory assuming responsibility for the welfare of their employees and their families in exchange for the loyalty of the families to the local factory. There was, in principle, a local employment guarantee for the male population of the

Table 3 Key attributes of the knowledge and industrial societies and of the mercantilist era of the pre-industrial society.

Attribute	**Knowledge society**	**Industrial society**	**Mercantilist era**
Key assets/ production factors	Labor with knowledge and information	Physical capital, transportation	Land and trading assets
Market's extension	Global	Mainly national	Mainly local
Polity	"Supra-state" organizations increase in importance	Nation-state democracy	Autocracy /oligarchy
Central principle(s)	Application of knowledge	Use of non-muscle power, division of labor	Increase muscle power through population growth, organize trade
Owners of decisive production factor	The individuals	Capitalists	Landowners
Central conflict	*Access / rights* to knowledge, information and benefits	*Justice*: Division of social accumulation between labor and capital	*Liberty*: business autonomy, the individual's freedom from feudal restraints
Management principles	Horizontal, cooperative	Vertical	Vertical
Dependency relations	Organization/collective needs the individual who possesses knowledge	The individual needs the organization / collective (enterprise, trade union, etc)	Mutual collective dependencies between crown, nobility, church, burghers and peasants
Central individual qualification	Creativity	Adaptability	Fidelity
Gender relations	Growing equality	Emerging emancipation	Patriarchal
Infrastructure	Digital nets, social infrastructure, airports, roads, rail	Land transportation systems	Waterways and ports
Central spatial units	Metropolitan region	Industrial town	Agricultural region, market town

Comment: The table is partly based on Lakshmanan (1994) who, however, does not treat the knowledge society. Some aspects are also picked up from Karlsson, Johansson & Stough (2001).

community. Education after primary school was not necessary for entering the industry. The women had in principle two alternatives: become a housewife or move. Other enterprises, apart from the requisite local service businesses, were potential competitors for the labor force and were regarded as unnecessary. The consequence was that entrepreneurship and the establishment of new enterprises were not promoted by the norms and values of the local industrial community spirit. The actors that formed the local industrial community spirit – the factory and the

trade union of the (mainly) male workers – opposed, consciously or subconsciously, the emergence of new actors.

During Sweden's industrial era, the local industrial community spirit was, in many respects, the local foundation for the successful Swedish model. On the other hand, during the structural adjustment of the last twenty-five years, this spirit has proved to be a critical problem for these communities. When the context changed, the communities needed actors to renew the local economy and the local social capital. However, to a large extent, the local industrial community spirit has obstructed the emergence of actors of this type.

In the case of the local industrial communities, the dominating parties had invested in very strong links both internally locally, and externally with customers and suppliers. When the markets eventually declined and the external links were weakened, the strong internal links were an impediment that obstructed the development of new links to new external actors. Thereby, the necessary importation of new ideas and values was prevented. More than a generation after the emergence of the knowledge society, these regions are still in crisis with low growth and out-migration, particularly of young women. The growth in Sweden has taken place in other regions, mainly in the three metropolitan regions and the university centers.

The Swedish local industrial community spirit is one example of the type of social capital that was formed in and by the industrial regions of Europe and North America. Their industrial heritage has left these regions with obsolete networks and obsolete attitudes which constitute severe obstacles to a smooth and rapid transition to the knowledge economy.

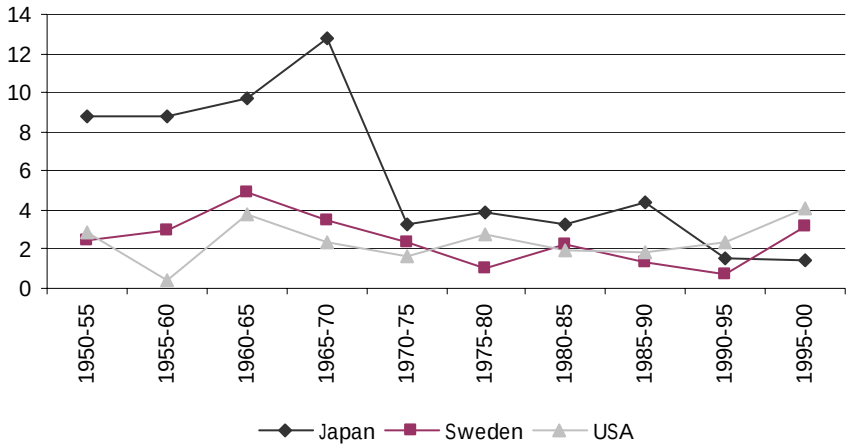
4 Why compare Sweden, Japan and USA/California?

For a study that aims at comparing social capitals in the ongoing transformation from a manufacturing-industrial society to a knowledge society, there are certain advantages in comparing countries/states on a similar economic and technological level. Despite many differences that will be discussed below, Sweden, Japan and the U.S. are highly developed industrial economies which in many respects are among the leading in the world when it concerns the development of the knowledge economy. In the National Innovation Index,[4] the three countries have been among the top ten from 1980, the first year of measurement. The countries are in the world top concerning e.g. proportion of scientist and engineers of their workforce and R&D spending as a percent of GDP (Institute for the Future 2000). They are also among the leading countries in the development of information- and communication technologies.

In terms of economic growth, Japan showed a remarkable development 1950-1990, in particular up to 1970, but also during the latter two decades Japan outperformed Sweden and the United States. As shown in Table 4, this pattern changed after 1990 when the U.S.' economy took the lead. After two decades of slow GDP growth, the Swedish economy boomed during the second half of the 1990's. Explanations of this new growth in America, Sweden and other countries have been connected to the rapid development and applications of information- and communication-technologies in particular and to the knowledge economy in general.

[4] The National Innovation Index was created by Michael Porter and Scott Stern for the U.S. Council on Competitiveness. The index measures innovation capacity and includes R&D expenditures, patenting activity, openness to international trade and other variables (Institute for the Future 2000).

Table 4 Average yearly GDP growth in per cent in Japan, Sweden and the USA over 5-yearperiods 1950-2000.



Source: Maddison (1995); OECD (2004)

Also from a broader societal perspective there are large differences between the three countries, based on the different historical development paths of Europe, North America and East Asia. Industrialization in its classical form took place in Europe and Europe was also the part of the world in which the class struggle between labor and capital became most accentuated. Taking the state power by violence, crushing the political enemy and establishing a dictatorship creating (temporal) social peace became the "solution" in several countries (e.g. Russia, Italy, Germany, Spain). However, already before the Russian revolution in 1917, the social democratic parties of Western Europe started to develop strategies of transforming society without an armed revolution. After World War II, the aim was over time reformulated into transforming the state to a welfare state within the framework of an existing market economy. The welfare state would solve the social problems caused by industrial capitalism. Nowhere in the world was this vision implemented so thoroughly as in Sweden. Still at the turn of the millennium, Sweden had the largest government expenditure in the world as percent of GDP (60%) while Japan had slightly above 35% and the U.S. slightly below 35% (OECD).

Thus, Sweden is the country that has developed the industrial society's welfare state the furthest. Sweden does not represent a European average, but rather the most far-reaching example of a European idea-tradition of the "good state". This means that we in Sweden, more than in other countries, should be able to observe certain problems in the transformation of social capital from industrial society to knowledge society. What kind of social capital has this large public sector created? What impact has the large public sector had on the social capitals of the private sector and the third sector? How compatible are the social capitals of the three sectors with the needs of the emerging knowledge economy?

The industrialized United States were built up by generations of European immigrants during the 19th and early 20th century. To the U.S. came young men and women, determined to create a better future than it was possible to achieve in their native countries. They had left the combination of landlord power, rigid class borders and the established churches' almightiness in Europe. In the U.S. it was not your background that governed your future. These opportunities created a mentality, a social capital and a behavior other than that which existed in Europe. The pre-industrial slave economy of the American South came increasingly into conflict with the development of the North. The civil war solved this political and economic-structural conflict.

Individual freedom but also a strong civil society and a significant smaller public sector than Europe became central features of the American industrial society. However, as the American welfare society was developed after World War II, the public sector increased. After the industrial crisis in the 1970's, many states have even developed industrial policies with European features, such as subsidies to new establishments of industries. California, the biggest state, has to a certain extent resisted these "Europeanizing" tendencies. More than the other states, California represents the American dream where fame and fortune is the reward of the winners. California is still an important immigrant state but the young immigrants that now work hard to make their fortune there come from Asia and Latin America. For several decades California has been the world-leading center of information technology and the state's young biotech industry is among the most developed in the world. Just like Sweden compared to the rest of Europe, California does not represent

the American average state but rather the state that most successfully has developed and utilized the archetypical American characteristics.

Compared to other states and countries, we in California should be able to observe the transformation of social capital from industrial society to knowledge society in a competitive society where traditions and the past put relatively few restrictions on the actors. What kind of social capital has these characteristics created? What advantages has California concerning social capital in the transformation to the knowledge society, compared with the other two countries? What kind of problems has been observed in this transformation?

The history of Japan has few similarities with Sweden's and California's. 150 years ago Japan was a very backward country in economic respects. After the Meiji restoration, an industrial revolution was started from above, based on intimate collaboration between the state and the growing industry groups. In contrast to the general European pattern, the Japanese industrial revolution incorporated and adapted traditional Japanese values and culture. Industrialization in Japan became a nationalistic duty up to 1945 and a national endeavor during democracy. While "more European than Europe itself" in the sense of government's influence over industrial development, the size of Japan's public sector is just slightly larger than the United States'.

On the one hand "Groupism" and informal networks, on the other hand strict hierarchies in all sectors of society characterize Japan also during the transformation to a knowledge economy. While the manufacturing industries of Western Europe and the U.S. were severely hit by the crisis during the 1970's and some sectors by its aftermath in the 80's, the Japanese industry was to a great extent able to avoid the crisis by more efficient production processes, improvements of existing techniques and new innovations, the latter mainly in the consumer electronics sector. This meant that Japan up to 1990 developed the most advanced industrial economy in the world. It is highly probable that the specific social capital build-up in Japan made this late industrial boom possible. However, a consequence of the fact that Japan developed the industrial economy to perfection and got its industrial crisis almost twenty years later than Europe and the U.S. might be that its current social capital is less adapted to the needs of the knowledge economy. To what extent is this interpretation correct? What features in the Japanese society act as ob-

stacles for the knowledge economy's growth? Or are there any arguments for that Japan – as it formed its special way of industrial society, with a mixture of own traditions and foreign institutions and knowledge – will be able to form its own successful way to the knowledge society?

5 A comparison of certain aspects of social capital

5.1 Introduction

What aspects of social capital should be compared?

Based upon the analysis of the enterprise-based social capital that was presented in Section 2, three aspects of social capital were selected for comparison. However, as the comparison is based on states/countries and not on individual enterprises, the aspects selected for investigation are somewhat broader than the components listed in Table 2. The focus lies on certain aspects of the general relational systems, which the individual enterprises are parts of.

The first aspect is relations on the labor market. This includes both employer-employee relations in the individual enterprise as well as what is usually called industrial relations, i.e. relations between trade unions and employers and their federations. In the individual firm, employer-employee relations is the core of the internal social capital of Table 2, while industrial relations and norms on the labor market in general, belong to the environment in which the firm forms its social capital. Employer-employee relations and industrial relations have been used as an explanatory factor behind Sweden's strong economic growth 1945-70, behind Japan's industrial miracle 1945-90, and behind the growth of the American Sunbelt after 1980. However, relations and norms between employers and employees in the individual firm or between the parties on the labor market in general, is a field where there are big differences between the three countries. Section 5.2 aims to shed some light on the question whether quite different labor market relations really can contribute to explain economic growth.

The second aspect centers on relations and norms connected to innovations and economic-structural renewal. A number of concepts fall into this category: innovation systems, R&D systems and *triple helix* but also entrepreneurship. These concepts are principally associated with the production-related social capital of Table 2. The actors of the processes of structural renewal – enterprises, capital institutions, government, universities – have different roles and weights in the three cases studied.

Section 5.3 aims to give a picture of how relations, norms and institutions of the systems for economic growth and structural renewal were formed under the industrial economy and the challenges the knowledge economy raises to these systems.

The third aspect concerns the civil societies of the three countries.[5] Putnam (1993a) stresses the importance of the civil society, not only for a well-functioning democracy but also for economic growth. The basic argument is that a strong civil society fosters trust between its members – and trust lowers costs for transactions, credits, information, surveillance, etc., and thus contributes to economic growth. From the firm's perspective, the civil society is strongly connected to the environment-related social capital of Table 2. However, the impact of the civil society on business life is not self-evident and it probably varies for different types of firms. Civil society's strength is in the tradition of Putnam often measured in membership in and number of non-governmental or non-profit organizations (NGOs and NPOs). Measured in this way, the size and structure of the civil societies differ between the three countries studied. Section 5.4 gives a brief overview of these differences and discusses civil society's role in economic development.

5.2 Social capital expressed in the form of labor market relations

5.2.1 Sweden

Up to the beginning of the 30's the Swedish labor marked was characterized by severe class struggles that reached their climax with the shooting of five striking workers in 1931. This became a signal for afterthought and both sides realized the need for a new strategy. In 1938, after two years of negotiations, Sweden's central employers' federation and federation of blue-collar unions signed the "Saltsjöbad agreement" –

[5] As is the case with many other societal concepts, the term "civil society" has no single definition. For a comprehensive discussion of the concept, see Ehrenberg (1999). In this study we use the working definition adopted by the Centre of Civil Society of the London School of Economics: "Civil society refers to the set of institutions, organisations and behaviour situated between the state, the business world, and the family. Specifically, this includes voluntary and non-profit organisations of many different kinds, philanthropic institutions, social and political movements, other forms of social participation and engagement and the values and cultural patterns associated with them."
(http://www.lse.ac.uk/collections/CCS/what_is_civil_society.htm 2004-01-08).

named after the place outside Stockholm where the agreement was signed. The agreement was formally just a regulation of how negotiations between the parties would be carried on. More important was the "spirit" it created which, in principle, meant that the trade unions accepted the capitalistic production system, the employers accepted the trade unions as an equal negotiation party and that both parties refrained from conflicts in the favor of negotiations.

According to Rothstein (2003), there was an institutionalized cooperation between the parties also during the many years of conflict and this was an important reason for the signing of the agreement only seven years after the shootings. These institutions were not created by the parties of the labor market, but by the Swedish state, which already in the beginning of the 20th century started to accept the organized working class as a legitimate part of society. In this respect Sweden differed from the larger European states (and the United States). These institutions contributed substantially to the creation of trustful relations between the parties.[6]

With the exception of a communist-dominated national strike among metal workers 1945, labor market relations in Sweden were peaceful until 1969 and negotiating solved conflicts. Not only were the relations between the central trade union and the central employer's association trustful and peaceful, the contacts between the social democratic government and the leading industrialists were also mutually convivial. In the 50's an active national labor market policy was implemented with the aim of moving labor from low-productive, stagnating branches, such as the textile industry, to the expanding metal industries. Another important feature of the Swedish labor market model was its centralized, top-down nature. Collective bargaining between the federation of blue-collar trade union and the central employers' association was the rule. Agreements were made on a national level for all industries and implemented at local level.

[6] Also Nycander (2002) came to similar conclusions.

Thus, the employer-employee relations in the individual enterprises were formed after a centralized, collective model, where the state played an active role in reducing frictions on the labor market. The years 1945-70 was characterized by a very rapid growth of the Swedish economy. However, the Swedish model for the labor market had its limitations. It was much of a "one-size-fit-all" model. In retrospect it is easy to state that it was a model that promoted growth in the established, big industries within the existing business structure. Growth of new enterprises in new sectors seemed unnecessary as long as growth in the established sectors continued. The model and its spirit had no solution to the structural crisis that hit Sweden in the 70's.

The problems for the Swedish labor market model coincided with the industrial crisis of the 70's but an important factor behind less trustful industrial relations was also the radicalization of the Swedish Social Democratic Party and the trade unions. The 70's and first years of the 80's were characterized by strong radical beliefs that planning, legislation and central "wage earners' funds" would guarantee a national society without business cycles, crises and social problems. A number of labor market acts were taken, among other things increasing job security. The most far-reaching step was the "wage earners' funds" that were supposed to be built up by a certain share of the companies' profits and this used to buy shares in the actual companies. In the long run, this would lead to some sort of "socialization" of the enterprises.

This radicalization created a strong anti-socialistic resistance among employers, in particular among small enterprises. The Saltsjöbad spirit faded away and the predominating influence that the federation of trade unions and the central employer's association had on the labor market's national level ceased to exist during the 80's.

Since the 80's, relations on the Swedish labor market have undergone a significant transformation. The most important feature of this process is decentralization and even individualization of bargaining and agreements. The relations on the labor market are to a much more extensive degree formed in each individual enterprise. This development has mainly taken place without resistance from the trade unions, which have adapted smoothly to the new conditions. Trade union density is still very

high in Sweden[7] – 82 % of the work force – a fact that partly can be explained by that membership is seen as a type of "insurance" that the union watches your interests in reorganizations or cut-backs. Another explanation is that non-membership is seen as an unacceptable free-rider behavior by the fellow employees.

Hence, the centralized top-down system that permeated the labor market down to the individual workplace is now history. Gradually employer-employee relations have been decentralized and individualized. However, government still tries to play an active role as administrator of the comprehensive social security systems.

As in other developed countries, working life in Sweden in the beginning of the 21st century is characterized by increased responsibilities for the individual employee or groups of employees. In this perspective, the decentralization and individualization of labor market relations in Sweden can be interpreted as an adaptation to more knowledge-based production processes in which the individual employee, with his unique skills, is far less exchangeable than he was in the industrial production processes. If this is correct, the social capital expressed in relations and attitudes of the Swedish labor market has taken certain significant steps towards facilitating further development of the knowledge economy.

5.2.2 Japan

Several scholars have adduced cultural-historical explanations to the particular labor market relations in Japan. According to Zhang (1998) the industrial structures of Japan are influenced by a traditional group culture. Lifetime employment, the seniority wage system, enterprise unionism and quality circles are some postwar expressions of this at enterprise level. The large business groups, the *keiretsu*, with intimate relationships among industrial enterprises, banks and insurance firms, might be seen as another expression of Japanese group culture. On a national level, "groupism" has resulted in a relative absence of a power center in society: "… bureaucracy, business and Liberal Democratic Party (LTP) has established an intimately interrelated triangle." (Zhang 1998, p. 142).

[7] See Nelander & Lönnros (2000).

Zhang (1998) emphasizes that Japan seems to have had a capacity for adapting its group culture to societal changes. On the one hand, the Japanese group requires total devotion of its members and a high capacity for cooperation. On the other, an individual can change group when circumstances change. It is "groupism" that persists, not necessarily the particular group. The celebrated Japanese sociologist Tadashi Fukutate, concluded concerning the development of the old Japanese *ie* family system that "the workplace has been the one area in postwar Japan where familistic groupism has remained" (Fukutate 1989, p. 215).

Lifetime employment and the seniority wage system are generally considered as a post World War II phenomenon, caused by shortage of skilled labor, and it was also under this period the great expansion took place. From popular depictions of the Japanese economy it is easy to get the impression that lifetime employment is the rule. However, only about one third of the workers in the private sector are lifetime employed.

These cornerstones of Japanese employment relations have their prehistory. During Japan's industrialization skilled workers came from craft trades. However, compared with craft trades, industry work was much more of a repetitive kind. The skilled craftsmen "reacted by demanding increased employment security from factory owners in the form of lifetime employment and payment based on length of service in order to ensure the maintenance of their standard of living" (Keegan 1995) The majority of skilled workers up to World War I were provided by a master craftsman. This *Oyakata* system had a monopoly of skilled labor and the master craftsmen became middlemen between the laborers and factory owners. After World War I the shortage of skilled labor forced the enterprises to recruit directly and train the workers within the factory system. The *Oyakata* resisted this, but some of the master craftsmen joined the industries with promises of lifetime employment and payment based on their seniority (Keegan 1995).

The third Japanese peculiarity concerning industrial relations, enterprise based unions, experienced a great boom during the first years after World War II under the Supreme Command of General MacArthur. Emancipation of workers was an explicit part of the democratization policies of the Allies. The easiest way of fulfilling this demand was to form unions in each factory, a measure facilitated by the earlier exis-

tence of wartime factory production committees (Keegan 1995, Kuwahara 1993). The relation between the enterprise union and the company has been as "a veritable partnership in goals, methods, and means has been negotiated and renegotiated … and this accomplishment has depended on contributions and initiatives from both labor and management…. Reciprocity hinges on balance, equity, and fair recognition; these can be encouraged and enhanced but they cannot be mandated or legislated…. the post-war environment of industrial relations has evolved in the direction of a kind of organic solidarity between labor and management. Interdependencies bind the two" (Fruin 1992, pp. 174-5).[8] Dore and Sako (1989) characterize Japanese firms as learning organizations and underline the importance of attitudes: "A lot depends on attitudes – the modest acceptance that everyone has much to learn, the acceptance by all supervisors that teaching is a part of every supervisory role. Those attitudes, in turn, are much dependent on the social characteristics of Japanese enterprises which, as compared with enterprises in Anglo-Saxon countries, are rather more like communities and rather less like markets …" (1989, p. xix).

There are good arguments for saying that the enterprise-related social capital expressed in employer relations was among the factors contributing to the very rapid economic growth in Japan 1945-1990 and in Sweden from the mid-30's to 1970. The industrial crisis of the 70's caused severe structural problems in Sweden, which are still not solved in certain regions. The employer relations in existing industries were not of much use since growth was dependent on new industries in new sectors. It is almost self-evident that the good employer relations in Japan contributed to its continued industrial success until 1990, but after that, this social capital, build-up under the manufacturing-industrial age, could not prevent the recession.

Japan is probably the country where industry most extensively has used the principles of industrial management and developed them furthest. The employer-employee relations that were developed in Japan are very different from those of the United States. However, research by e.g. Campbell (1995) shows that the attitudes of Japanese and Americans are

[8] This description shows the strong enterprise-internal social capital in a Japanese company, but it could in fact be a description of the social capital of a company in the Swedish local industrial districts during the industrial society!

far more similar than expected. It is their behavior that is different due to differences in structures and organizations. The operational principles of Japanese firms "appear designed to foster loyal behavior … Techniques that Japanese managers typically use are not mainly aimed at workers attitudes. Rather they are aimed at behavior … The relationships among these [just-in-time assembly line] workers have been changed in a way that *forces* the desired behavior, regardless of whether their attitudes are happy and cooperative or quite surly. The same technique can work with relationships among companies" (Campbell 1995, p. 315 and 317). This can be interpreted in two ways. On the one hand, the management principles of Japanese firms – internal and external – seems to constitute highly advanced forms of industrial management rather than being adapted to the knowledge economy. This should mean greater problems for Japan to adapt easily to the needs of the knowledge economy. On the other hand, if Japanese manufacturing management consists of compelling a desired behavior, adaptation to more knowledge-oriented production processes is – in this respect – "just" a question of management, i.e. to develop a groupism for the knowledge economy.

As in other countries, much attention has been given to the organized relations between trade unions and enterprises in Japan. However, trade unions have mainly been organized in the manufacturing industry and only the permanently employed are normally accepted as union members. With the decline of the manufacturing industry and an increasing share of part-time and temporarily employed also in this sector, the share of union members of the workforce was 2001 only 20.7%.

Today, in the first years of the 2000's, it seems clear that lifetime employment and the seniority wage system are slowly being loosened up and replaced by more flexible systems. The benefit of having a permanent work force was obviously great and it was worth keeping its loyalty with economic incentives during reindustrialization after World War II and the ongoing stages of industrial perfection. The companies' in-house education, with on-the-job training and job rotation secured a continuous learning from older to young employees and an accumulation of knowledge and skills within the company. However, the seniority system seems to have tended to discourage innovation and risk-taking, qualities needed in structural transformation periods. Studies of Japanese companies indicate that the seniority system promotes employees that do not

fail at tasks while those who are willing to take risks are in general not promoted (Ellington 1995). A system built for established sectors in stable growth periods is not adapted to periods with new sectors and rapid structural changes.

Today, Japan's structural problems, such as the inflexible labor market, the domination of old, large companies, lack of entrepreneurship, senior wages higher than labor's productivity, etc. put hard pressure on reforming these institutions into which companies and employees invested so much social capital during the industrial era. Two of the most well-known institutions of industrial society's employer-employee relations in Japan no longer correspond to the needs of either the companies that have created them or of the Japanese economy.

However, other features of the Japanese employer-employee relations system, like the in-house education, with on-the-job training and job rotation, have contributed to the successful combination of individual learning and organizational learning that has characterized Japanese industry. It has, probably correctly, been argued that the emphasis has been on organizational learning at the expense of individual learning and creativity (see e.g. Cole 1995), but the most modern western management techniques, such as empowerment management has doubtless been inspired by the Japanese experiences.

The task can be formulated as not only to change relations, attitudes and their institutional expressions within the given structures – it is to keep the many elements that has a development potential and simultaneously make the necessary changes in the social capital and its institutional expressions to be able to form an economic structure that promotes new businesses and new sectors of the economy. Changing institutions and relations on the labor market and in the enterprises is a necessary prerequisite for these structural changes, but not a sufficient prerequisite.

5.2.3 USA and California

More than in perhaps any other developed country, the employer-employee relations and industrial relations in the United States have been formed in accordance with the laissez-faire ideals. Trade unions have in general been met with very stiff opposition by the employers and in contrast to, e.g. Sweden, the government has been hostile to trade unions during long periods, as they have been considered competitively restrictive. In the United States the government did not form any institutions where trade unions and employer organizations could meet and slowly build relations of respect and trust. In this environment of resistance, the American trade unions became considerably more militant organizations than their Swedish and Japanese counterparts.

Union membership was at its height around 1950 with 33% of the workforce in the peak year 1953. As late as 1975 it was 28% (Putnam 2000). With decreasing employment in manufacturing and strong employer's resistance in many new sectors, union density has steadily decreased after 1975 and was 14% 1999 (Nelander & Lönnros 2000). 2001-02 almost half the union members in the U.S. were working in the public sector or in health care. However, union density varies strongly between different parts of the U.S. In 2001 New York topped with 27.7% while the lowest density was found in North Carolina with 4.3%.

American companies have none of the institutionalized solutions that were developed in Sweden and Japan, which usually are considered to have made great contributions to their economic growth. Neither the trustful relations with trade unions at local level, job security for their employees, nor advanced organizational learning, characterize American companies. However, this does not seem to have had any negative effects on economic development after World War II and during the 1990's the U.S. has outperformed both Europe and Japan. Has this happened due to or in spite of labor market relations? Can one type of labor market relations contribute to growth in one cultural context and another type of relations support growth in another context?

First it must be stressed that having hostile attitudes towards trade unions is not the same as having hostile relations to the employees. But instead of building relations with their employees as a collective, American companies have focused on the individual and in particular on man-

agement officers. Instead of concentrating on job security and organizational learning as measures to promote competitiveness, American companies and their employees have laid stress on rewarding individual initiatives and efforts. The term "Human Resource Management" represents not only an academic sub-discipline, but also the predominating approach to labor market relations in the U.S. The competitive but replaceable individual has been the key to competitive companies. On a labor market with traditionally high turnover, American companies have focused on strong management and replaceable labor. This can be illustrated by a comparison of American and Japanese approaches to spreading best practices within the company, which is shown in Table 5.

Table 5 American and Japanese approaches to spreading best practice in the company.

Characteristic U.S. approaches	**Characteristic Japanese approaches**
Focus on individual learning for selected (mainly management) employees; assuming it is translated into organizational learning	Focus on organizational learning through standardization and improvement routines
Reliance on formal training	Reliance on on-the-job training
Reliance on hierarchical structure to identify and diffuse best practice	Reliance on peer-to-peer learning

Source: Cole (1995, pp 374)

Thus, the American employer-employee relation model is much more of a pure market model than its Japanese (and Swedish) counterparts. Superficially, the American market model seems to have been most successful in contributing to general economic growth in the emerging knowledge economy after 1990. However, without detailed examination it is not possible to say how much of the American growth that is caused by rationalizations and cost-cuttings in mature sectors and how much that is caused by growth of the knowledge economy. Moreover, it can be questioned to what extent the knowledge economy has adopted the employer-employee relations of the traditional American model. A possible hypothesis is that U.S. industrial companies have been good at both traditional rationalizations and in adopting new technology to traditional production, at the same time as the high-tech sector has been able to expand with a type of industrial relations being a mix of American and Japanese features.

If this is the case, the expansion of the high-tech industries in certain parts of the U.S., and in certain parts of California in particular, might be connected to an *ability for organizational diversity*. While many mature sectors of the American economy have kept the traditional employer-employee relations or even fortified them, the most knowledge-intense sectors have been able to develop company and cluster cultures consisting of a blend of the best of American and Japanese features. Job mobility within the cluster can be compared with job-rotation within the Japanese firm. The horizontal relations within companies and the cluster as a whole can be compared with Japanese intra-firm relations. In this case, Silicon Valley and California have spontaneously developed "Japanese" methods while keeping job-hopping and other appropriate features of traditional American culture of industrial relations.

5.2.4 Conclusions

The three countries studied built up different national systems of labor market relations in the manufacturing-industrial economy. These systems were based on historic-cultural factors – the existing social capitals with relations and norms – but were naturally also adapted to the new industrial production system. In Sweden, with a strong centralized state with roots going back to the 16th century, the state played an active role in the shaping of industrial relations and employer-employee relations. In Japan, a tradition of groupism, hierarchies and mutual obligations formed a very decentralized system with common norms. In the United States, industrial relations and employer-employee relations were based on market criteria where the individual's competitiveness on a flexible labor market was the basic security.

Each of these systems worked very well as long as the industrial society worked well. Thus, an important conclusion is that these successful industrial economies were able to form relations and norms for the industrial production system that were in conformity with their national historical-cultural traditions, i.e. they could form a social capital for the labor market with sufficient homogeneity and tolerance to avoid large and devastating conflicts..

It is highly probable that this conclusion also is relevant in the current transformation to a knowledge-based economy. Imports of foreign models without adaptation to national characteristics have never been suc-

cessful. Forming usable norms and relations for the knowledge economy's labor market cannot be done without respect to historic-cultural factors – and even in the age of globalization these factors are deeply rooted in the nations.

5.3 Social capital and institutions for growth, innovations and renewal

5.3.1 Sweden

In a structural perspective, Sweden's industrial economy was built up in three phases to an increased structural diversity. The first phase, during the second half of the 19th century, was characterized by raw-material based industrialization, principally sawmills, textile industries and food processing industries. The second phase started in the end of the 19th century and expanded on certain areas until the 1960's. It consisted of two distinct groups of which one continued on the raw material based path (mainly pulp and paper mills, ore exploitation and steelworks). The other group emerged from a number of Swedish entrepreneurs, especially in engineering: Ericsson's telephones and switches, de Laval's separators, SKF's ball bearings, Dahlén's gas accumulator, ASEA's electrical engines, generators and transformers etc. The third phase started during the interwar period and consisted of applications of international innovations such as the automobile and the aircraft plus emergence of a large number of small sub-contract engineering enterprises. An important component of this third phase was also the borrowing of modern, American management and rationalization methods, e.g. time studies.

Sweden's first, raw material based industrialization was based on imported innovations and was comparable to many other countries', although Sweden's timber assets determined the relative structure. On the other hand, the Swedish engineering innovations industries were in many respects unique, based on own innovations or on knowledge of how to develop foreign innovations. For both these processes, the establishment of the institutes of the technology in Stockholm (Royal) and Gothenburg (Chalmers') in the middle of the 19th century and their education of engineers, was of significant importance. Also the third indus-

try wave was based on the engineering knowledge that had been built up by formal education and practice.

As in other countries, industrialization was accompanied by the emergence of modern commercial banks. However, a Swedish peculiarity was the concentration of power in industry and banks that the Wallenberg family gradually was able to achieve. The family did not restrict its activities to banking and industry but also acted as builders of the industrial society. Stockholm School of Economics was founded on their initiative and the Wallenberg foundation is one of the biggest Swedish private research foundations. As the leading bank-industry group, Wallenbergs became the most important norm-setters in Swedish industry. Long-term, responsible ownership contributed to economic stability and growth.

The government's role in promoting Sweden's industrialization has been considered important in a number of fields. The act on compulsory schooling for all children in 1842 reflected an early insight into the needs of an emerging new society. The above-mentioned institutes of technology educated the industry leaders. Railroads were built in a combination of state national lines and municipal/private regional lines to such an extent that Sweden at the outburst of World War I had more than double the length of railroad per inhabitant than any other European country.

Thus, the building educational and transportation infrastructure Sweden differed somewhat in degree but not in kind from that in other industrializing countries. The peculiarities of the Swedish government were instead the intimate informal relations that were established between cabinet and leading industrialists, foremost the Wallenbergs, after World War II. The social democratic government and the social democratic leaders of the blue-collar trade union federation found resemblances between their strategy for growth and welfare and the Wallenbergs' stable, long-term industrial growth strategy. Economic growth was a prerequisite to achieve the social democratic goal of social welfare and equal distribution of that welfare, in which a big public sector was the most important means. A labor market policy with features as retraining and grants for moving to expanding industry districts facilitated the transmission of labor from low-productive agriculture and forestry to high-productive manufacturing industry. When this was not enough to

secure the supply of industrial labor, a regional policy with grants for industries establishing in areas with labor redundancy, was established in 1965.

With the exception the Stockholm School of Economics, higher education has been public in Sweden. So has the main share of basic research funding. Since the 1950's, expenses for higher education and research have risen steadily. The expansion was mainly caused by the enlargement of the public sector and the increased demand for teachers, health care personnel, social workers, officials, etc, and this growing sector's demand for research. Industry-oriented basic research has principally taken place at the institutes of technology and to a certain extent within faculties of medicine. Applied R&D has on the other hand almost solely been handled within the industry itself.

A peculiarity of Swedish industry-oriented research has been the limited importance of institutes for applied technological research. Instead a "Swedish model" for cooperation between industry and research was developed. A fundamental characteristic of this model was a public/state customer and a private company that developed new technology and products. This was particularly confined to areas of infrastructure, where state companies, state monopolies and the national defense built up intimate, long-term relationships with private companies, to a large extent within the Wallenberg group. This long-term cooperation was of great importance for technological development in the major companies. However, from the point of view of structural transformation, the model had severe shortcomings in that it was unable to contribute towards the creation of new enterprises in new technology areas (Sörlin & Törnqvist 2000).

Whereas the three industry waves were characterized by Swedish innovations and entrepreneurial application of these and foreign innovations, the period from World War II to the 70's was characterized by optimum refinement and administration of the industrial growth. Only two entrepreneurial innovations made a breakthrough in this period: Rausing's Tetrapak and Kamprad's IKEA. Swedish industry was mainly finishing the development blocs that had started during the second and third industry waves. Government's economic policies focused on smoothening out business cycles and dissolving short-term bottlenecks. Growth seemed to be taken for granted. Increasing attention was given to the

distribution of wealth and the expansion of the public sector. When the industrial crisis hit Sweden in the 70's, the public sector was given a new task, namely, providing temporary jobs for the unemployed.

In the long-term perspective depicted here, a shift of norms and relations concerning innovations and structural renewal started in the early post-war years and became obvious in the 70's. The Wallenbergs used the crisis of the 30's to increase their leading industrial position and were thereafter in a division of their own, with national competitors only in certain fields. Both for them and for the social democratic government, the postwar period was a harvest time where long-term investments in physical, human and social capital bore much fruit. In a way similar to the manner in which the *Bruksandan* cemented temporarily successful relations and norms in local industrial districts, successful but maturing industries and politics create predominating norms and relations on a national level. In both cases a false impression of reassuring reliance and control of development emerged. The entrepreneurship that once built the local industrial districts, the innovative engineering industries as well as the social democratic party, was slowly replaced by administrative, stabilizing management. The crisis of the 70's saw the demise of this national understanding. A major conflict in 1980 showed that the relations between employers and trade unions had deteriorated considerably. Industrial renewal seemed very distant prospect in the stagnated economy of that time.

Three major factors lie behind the expansive structural changes that have taken place in Sweden since 1980: (1) Deregulations of financial and other markets, among them telecommunications, (2) Intra-industry R&D principally in telecommunications and pharmaceuticals, and (3) a high level of education and relatively equal income distribution creating a high demand for IT products, software and services among enterprises, public administration and large segments of the population.

The first factor, deregulations, is an example of important policy measures that have achieved very dynamic effects in certain areas. The reason that deregulations started to take place in the 80's was partly a reaction to the international liberal market trend. However, it should also be interpreted that the political system, which had relied so heavily on public sector solutions, had the ability to learn from its mistakes and the courage to try new solutions. Although deregulations also had negative ef-

fects – an overheated, inflationary capital market that ended up in the financial crisis of the early 90's – there are reasons to stress their impact on entrepreneurship in the private service sector and the telecommunication sector.

The second factor, intra-industry R&D in a small number of successful multinational Swedish companies, principally in telecommunications, electronics, motor vehicles and pharmaceuticals, has contributed to expansion in these sectors. In 1999 only Germany had a higher share of its work force in industries with high or medium-high technology level[9] among the EU countries and other leading countries including the U.S. and Japan (EU 2001).

Partly connected to the expansion caused by R&D, particularly in telecommunications, are the consequences of the third factor, the high and relatively equal level of education and the relatively equal income distribution (Institute for the Future 2000). Sweden and the other Nordic countries are characterized by a high demand for IT products, software and services among enterprises, public administration and large segments of the population. Governmental policy, including subsidies to employees purchasing a PC through their employer and to broadband cable-laying, has contributed to the rapid and comprehensive penetration of IT among the Swedish households. The IT sector, with a large number of small start-ups, is also the only new sector that mainly has emerged outside the old, established companies.

Understanding and intimate cooperation between the state, the big, often multinational companies and the trade unions were cornerstones in Sweden's successful model during the industrial epoch. As long as the industrial system expanded, the model was successful. However, the model and its actors lacked ability to handle a smooth transition to the new paradigm of the knowledge economy. There are indications on that the transitional problems has been harder in Sweden than in many other countries. Sweden did e.g. fall from number four to number seventeen in GDP per capita between 1970 and 2001.

[9] Industries included in this definition are: aircrafts, computers, office machines, electronics, telecom equipment, pharmaceuticals, instruments, motor vehicles and other vehicles, machines and chemical products.

One established sector has constituted an exception and been able to develop new knowledge-intense products: telecommunications has managed a transition to mobile nets and to broadband. Another established sector, pharmaceuticals are becoming increasingly dependent on biotechnological research. The IT sector grew substantially during the 90's and the use of IT has penetrated all sectors. Still Sweden's labor productivity lies in average 10% below leading competitor countries 1998. The main explanation to this lag is the service sector, which employs about 75% of the labor force and is 12% below average (Kokko & Gustavsson 2003) [10], while labor productivity in several manufacturing sectors are highly competitive.

The knowledge-based economy has expanded heavily, especially in the Stockholm region. The Stockholm region is also the region with the highest entrepreneurial activity, measured in terms of start-ups per capita. Still Sweden ranked only number 31 of 37 countries in total entrepreneurial activity, in the Global Entrepreneurship Monitor (GEM) Report 2002 (Reynolds et. al. 2002). Only between two and three per mille of the 37 430 new companies that started in 2002 were a result of R&U carried on at universities (ITPS 2003). This low level of entrepreneurship in general and in the centers of society's knowledge production must be interpreted as an indication on prevailing norms of the industrial economy, but also an indication on the traditional role of the universities (see below).

The venture capital industry of Sweden was started by governmental agencies in the end of the 1970's. It was not until the end of the 1990's that a sharp increase in private investments took place. Governmental VC means are now primarily directed to enterprises in early developmental stages. According to a report from PricewaterhouseCoopers, Sweden 1999 ranked third in the world in venture capital investments as a share of GDP. Swedish VC-firms invested over 11 billion SEK, which equals 0.57% of the GDP, which is about double the European average where only United Kingdom invested more with 0.86% of GDP. In the US the venture capital-investments in 1999 equaled 1.14% of the GDP. The Swedish VC-investments rose to 19 billion SEK in the record year 2000 but have from then on fallen sharply. Of total Swedish VC-invest-

[10] The competitor countries were Denmark, Finland Italy, Norway, Germany, UK and USA.

ments 2000, 41 percent were made in the Stockholm region. The largest VC-investments in 2000 were made in branches of production, service and automation of manufacturing industry. A common apprehension is that the weaknesses of the Swedish venture capital sector are not projects, ideas and capital supply, but resources in terms of management competence (vencap.se 2003, ITPS 2002).

Besides the IT policy mentioned above, the Swedish state's policies for transition to the knowledge economy have focused on research and higher education. As percent of GDP 2000, Sweden was world leader. (Kokko & Gustavsson 2003). During the 1990's a number of new regional universities and colleges were founded and the number of students was increased by 50%. In 1997 the Swedish parliament added a third task to the universities' two traditional tasks education and research, namely to cooperate with the rest of society. The universities and colleges have increasingly been considered as an engine for national and regional development and growth. The 2001 founded national agency for innovation systems, VINNOVA, considers the universities as key actors in the creation of regional innovation systems.

However, if the universities should work as an efficient engine for growth – as the Swedish government wants – it is highly probable that they would need to partly redefine their roles. On the other hand, it is likely that politicians and officials do not wholly understand the universities' particular needs of certain autonomy in order to be innovative, critical and play the expected role for economic growth. The problem can be expressed in terms of a lack of social capital adapted to the universities' new role. This lack of "right" social capital exists not only between universities and the rest of society but also within the universities.

The universities have built their strong status by claiming a unique position of objectivity and science. They have fostered generations of researchers with the scientific ideals and built a strong (international) social capital with common norms and strong internal links. One of these norms has been integrity and resistance against external pressure. Entrepreneurship and external cooperation on other premises than the universities' own have in general not belonged to these norms. Thus, also what can be considered as the main actor in the transformation to a knowledge society, the university, has a social capital that to a large extent is not

adapted to the state's expectations and strategies for promoting the knowledge economy. This is hardly surprising.

The universities predominating method to handle the state's demands have been to form particular bodies, beside traditional research and education, such as collaboration offices, holding companies and research parks. This is in itself a reflection of the difficulties involved in combining external tasks with ordinary activities. The individual researcher lacks normally incentives to add another task to research and education. External tasks give no academic merits. A fundamental change of the incentive structures is probably necessary if external collaboration should develop to an integrated component of the universities' activities.

Thus, the country with the largest governmental sector in the world, Sweden, seems to have taken several important steps from the industrial economy to the knowledge economy. The service sector employs about three quarters of the labor force. Higher education and research is given high priority by the government and its industrial policy agencies. Use of the Internet and mobile telecommunications are among the most spread in the world and Stockholm experienced a remarkable IT-boom in the end of the 1990's. The venture capital industry is the third largest in the world as percent of GDP. On the other hand, regional and social tensions are increasing, indicating that large groups are feeling slighted. The industrial, regional and labor market policies do not show any apparent effects. The lack of entrepreneurship reflects remaining industrial-societal values. In short: Sweden has left much of the industrial society's norms and relations, but only certain groups and regions have developed new attitudes and networks. Sweden has still not built the common values and networks of a new national social capital for a knowledge society.

5.3.2 Japan

A general, popular explanation to the remarkable economic growth in Japan up to 1990 has been the Japanese "culture" of economy and politics. The explanation has focused on different phenomena e.g.: the intimate cooperation between government and industry, the well-developed cooperation between large companies and sub-contracted SMEs, the long-term relationships and business reciprocity of the *Keiretsu* system, the loyalty of employees to their enterprise, the positive attitudes to edu-

cation, etc. An explanation on a much more general level is that the growth is the result of applications of the Confucian culture in modern Japan (Zhang 1998).

Seen in this latter perspective, the explanations to Japan's extraordinary industrial growth focus on different aspects of the enterprise-related social capital. If these explanations are wholly or partly correct, the question arises on how Japan was able to create a social capital that so successfully supported industrial growth. Zhang (1998) points out that although these are common features in Japan and China, the Confucianism of the two countries is different. While the Chinese applications of Confucianism have supported a relatively higher degree of individualism, the Japanese interpretations of Confucianism have resulted in a strong group culture and loyalty to the group. This group culture provided the basis of nationalism when the West challenged Japan in the 19th century. Catching up to the West by learning and carrying through a rapid industrialization became a matter of national pride. The traditional group culture fitted the Japanese industrialization strategy extraordinary well.

Education and import of foreign technology were cornerstones in this strategy. Concentration on education became an important feature of Meiji Confucianism (in contrast to the earlier Tokugawa interpretations). Meiji Japan accepted the traditional Chinese Confucian meritocratic practice of free mobility of people through education and abolished the caste system.

Zhang's conclusion – interpreted in our terms – is that Confucianism has been an important foundation of Japan's social capital of the industrial era. However, it is particular interpretations of this religious-philosophical foundation that have formed a social capital so well adapted to the task of learning from and catching up to the West.

The shaping and reshaping of Japan's social capital has on a general level been achieved by interwoven measures of policies and business. The national state became the modernizing agent after the Meiji restoration, but the modernization took place under market-economic conditions, in close symbiosis with the business elite and with nationalism as ideology. The state concentrated on education, technology transfers and physical infrastructure but also on "actively promoting the normative orientations towards a more individualistic exchange economy and by

creating new social and economic institutions…" (Lakshmanan 1994: 106).

After World War II, the Japanese government – and in particular the Ministry of International Trade and Industry (MITI), now called Ministry of Economy, Trade and Industry (METI) – has performed an active industrial policy in intimate cooperation with the big corporations. These national policies have been the base for the social capital, with networks and values, which has been developed in the Japanese civil society and in the enterprises.

In the 1980's, Japan's industrial policies became a model for the rest of the world. Freeman (1987) coined the term "national innovation system" in his analysis of Japan's postwar economic development. He defined this as networks of institutions "… in the public and private sector whose interactions initiate, import, modify and diffuse new technologies" (Freeman 1987, p. 1).

According to Freeman, the Japanese innovation system was built on a close collaboration between government and the large corporations. It was characterized by four qualities. First, the active role of MITI in giving priority to selected new technologies that would transform business life, and supporting use of these advanced foreign technologies and development of new technological solutions in the companies. Secondly, the Japanese tradition of improving imported technology, "reverse engineering", meant a strong integration of R&D, design, production and marketing. Thirdly, the educational system had a strong focus on science and technology. Fourthly, Freeman also stressed features of the industrial relations, which here have been treated in a former section, as giving excellent incentives to personal engagement in technology improvement and productivity growth in each company.

The perhaps most notable feature of this innovation system model was the absence of direct linkages between university/institute research and the companies. Central government officials selected the technologies to which give priority and central and regional government officials played the key role, as brokers and directors of resources for R&D and commercialization of R&D. This top-down system demanded much knowledge and strategic ability from the officials. It is possible that the increased flows of information that information- and communications

technologies have resulted in contribute to explain the problems in maintaining the efficiency of this centralized innovation system.

The starting point for Japanese industrial and technological policies was to import and use R&D results from other countries. Consequently, research was focused on applied research, which mainly has taken place within the companies. Basic research at the universities played a very limited role in Japan's postwar innovation system. "On of the major characteristics of Japan's innovation system is the apparent absence of academic contribution" (Yoshihara & Tamai 1999, p. 348). Several scholars have presented historical reasons to this.

Before World War II, university research on certain fields was an integrated part of Japan's war preparations. After the war, the Allied ordered the Japanese leaders to abolish old institutions and form new ones. At the same time, leaders of the academic community emphasized autonomy and were reluctant of cooperation with industry, while industry and government focused on importation of technology. Large corporations started their own research laboratories and recruited engineers from the universities. Before the mid-1960's, "… some corporate researchers even boasted that the university was unnecessary for industrial research and development in Japan" (Hashimoto 1999, p 241).

Still, cooperation between industry and university seems to have been more comprehensive than is shown in official figures. The cooperation was informal and based on personal networks between professors and industry leaders. "In a labor market that was short of skilled labor, ties to university professors were very important to firms for success in recruiting. In exchange for access to students, industry contributed human and physical resources to the university laboratory. Professors also worked with firms as advisors, using as intermediaries industrial and professional associations…" (Hane 1999, p. 25). When the Ministry of Education (Monbusho) introduced a program for joint university-industry research 1982, the program was based on existing informal practices and networks that had evolved. On example is that the central actor was not the university or the department, but the individual professor (Hane 1999).

The very low number of patent applications submitted by universities – a common measure of technology transfer – indicates the lack of university-industry cooperation in Japan. However, also this aspect seems to underestimate the extension of this cooperation. Recent research shows that professors normally transfer the title to their inventions to private companies in exchange for grants and donations. According to Monbusho, total grants and endowments to national universities from the private sector accounted for ¥87.7 billion in 1996 – 26% of total university income. An important reason to this practice is the high direct and indirect transaction costs connected to patenting and maintaining patent rights. Hence, also concerning patents, the system is built on informal links and exchanges (Yoshihara & Tamai 1999).

Thus, recent research shows that the Japanese university-industry linkages are stronger than what the official picture indicates. However, the fact that these linkages are informal is more or less a proof of that they have not been officially accepted. It is hard to believe anything else than that this has had a limiting effect on university-industry collaboration.

Japan has the highest number of patent applications per inhabitant among the big OECD countries (in the whole OECD, only Sweden has a higher number) (OECD 2002). When it comes to Japanese product innovations, however, they are mainly concentrated to consumer electronics. Japanese industry has concentrated on improving and developing products than creating completely new products. If the same holds true for knowledge – that Japan should be better in applying and adapting existing knowledge than creating new fields of knowledge – this might explain why creativity is not a word immediately associated with Japan.

The relative lack of innovations and creation of new knowledge might partly be connected to the Japanese education and research system. Japan's expenditure in education in per cent of GDP is in fact among the lowest in OECD. On the other hand, Japan is well above the average concerning tertiary education attainment in percentage of adult population and has the highest score in student performance among the OEDC countries. Still there seems to be discontent with the research and education system. Omori (2001, p. 90) describes these problems in the following way: "Japan's education system continues to emphasize obedience, diligence and homogeneity, traits that were of great value while Japan was catching up to other industrialized nations. But since Japan

has become one of the front-runners of the world economy, people with creativity, leadership and heterogeneity are needed. Previously successful methods of mass production of automobiles could not be so easily applied in an area of high technology, because the essence of the latter lies in creative ideas, not in the efficiency of production processes."

A factor not explicitly mentioned in Table 3 is entrepreneurship or founding of new enterprises. However, it would be reasonable to hypothesize that transformation from an industrial to a knowledge economy is facilitated by start-ups of new enterprises in the new sectors. In the abovementioned International Global Entrepreneurship Monitor Report 2002, Japan had lowest rank of all 37 countries (Reynolds et. al. 2002). Japan's National Institute for Research Advancement has claimed that the Japan is characterized by "… a culture and climate of low mobility of human resources, lack of tradition in allowing the failed to rise again, and relative lack of societal prestige for entrepreneurs" (NIRA 1997, quotation from Hane 1999, p. 37).

The alternative to starting new enterprises in a period of transformation is that the established enterprises extend their activities to the new sectors or organize set-ups within the *Keiretsu* system. This seems to be the predominating Japanese strategy, but it is not obvious that this is the optimum strategy. Established enterprises have formed institutions and cultures adapted to their main activity. Successful starting of new activities may be problematic within institutions and cultures formed for other purposes. Hannan & Freeman (1977, 1984) have shown that organizations often resist changing their basic technologies and structures. Christensen (1997) has denominated this resistance based on earlier success the "innovator's dilemma". Castilla et. al. (2000, p. 223) conclude: "… upgrading of a regional economy occurs especially through new organizations rather than through transformation of existing ones (…) Any region whose institutions or networks resist spin-offs or new entrants may face stagnation". Thus, the relative lack of start-ups of new enterprises might constitute a serious problem for Japan's transition to the knowledge economy.

An essential factor affecting innovation potential, economic renewal and the success of entrepreneurship is access to venture capital and venture capitalists. The importance of venture capitalists in the growth of the IT industry in the U.S. can probably not be overestimated. In Japan, the rise

of venture capital firms since the end of the 1980's was principally due to an excess of cash and a need of finding new business opportunities. However, the investment philosophy and practices did not change very much (Hane 1999). The venture capital firms have mainly acted as investment companies and have been considered as "affiliates of financial institutions [being] notorious for investing only in companies that are on the verge of going public" (Nikkei Weekly 1996). In contrast to their American counterparts, Japanese venture capital firms rarely have provided support services such as management, marketing, recruitment, relation building, etc. (Institute for the Future 2001). The explanation seems to be a combination of business and management traditions and governmental regulations. Until 1994 venture capital firms were not allowed to have representatives in companies' boards – a circumstance that undoubtedly must have had a negative impact on willingness to invest. New companies' entrance to the stock market has been severely regulated, meaning additional obstacles for the Japanese venture capital firms. Japanese entrepreneurs also seem to have comparatively low trust in the business financing system. When a firm has reached the phase of initial public offering (IPO), in Japan original founders normally own a much larger share of the company than in the U.S. The consequences of this are smaller input of know-how and capital from outside, in general slower growth, smaller size at the time of IPO and a more introvert firm (Fasol 2002).

Thus, also in the field of venture capital, the institutional norms and practices in Japan seems to have been less well adapted to promoting entrepreneurial innovative activities. However, statements from Japanese venture capital firms indicate that they increasingly are beginning to work like their American counterparts.[11] The gap that still exists between Japan and the U.S. can be illustrated by the fact that venture capital investments in the U.S. 2002 were about 15 times greater than in Japan (PricewaterhouseCoopers 2003, Nakamura 2003).

[11] Interview with Mr. Yoshihisa Abe, UFJ Capital Osaka Branch, December 1st, 2003.

Finally, the fundamental unit of an innovation system is of course the enterprise. It is in the enterprise that knowledge and recourses are transformed and commercialized to saleable products. In accordance with the deeply rooted group culture, Japanese enterprises have been characterized of strivings to internalize "as much as possible", among other things reflected in strong corporate cultures, own central research institutes, comprehensive enterprise-internal tacit knowledge, floor level decision-making and lifetime employment. Motohashi (2003) calls this "a 'go it alone' business practice, whereby a firm relies on its in-house tacit knowledge to develop new ideas and build up competitive advantage". Survey results show that Japanese enterprises are very good at using their internal tacit knowledge, but that they do not make effective use of formal knowledge outside the enterprise. According to Motohashi, this was an efficient model that worked well for a long time, but the galloping IT revolution has changed this:

"The flow of publicly available information via the Internet is growing much faster than the flow of internal company information (…). The efficiency of exchange of confidential information between enterprises is also notably higher thanks to improved information networks. This qualitative change in the nature of information makes it easier for corporate management to make use of external information and it also encourages enterprises to exchange more information with specific outside entities. The result is a network-based model of management that creates win-win situations and offers comparative advantage" (Motohashi (2003).

This development has so far had its strongest impact in the electronics industry, where integrated manufacturers have been replaced by specialized firms which work together in dynamic supply chains. According to Motohashi, this development has meant comparative advantages to the American form of network-based innovation system, while "the effectiveness of the Japanese model (under whish different sectors must spend a lot of time to get in synch with each other) is on the decline" (Motohashi 2003).

Motohashi's views correspond very well with our general hypothesis on the transformation to the knowledge economy and the need to change institutionalized and non-institutionalized networks, including social capital. The Japanese enterprises' great advantage during the late indus-

trial epoch – their ability to use and create new tacit knowledge within the company and commercialize it to products – is no longer enough. To succeed in the knowledge economy, companies seem to need new combinations of tacit and formal knowledge – and new combinations of internal and external networks.

The above-mentioned problems – and other problems in the Japanese economy – are focused upon in the "Hiranuma Plan" of May 2001, and other recent METI-documents (e.g. METI 2001 and 2002). Besides reformation of the innovation system, promotion of new businesses and SMEs, clusters, personnel networks, female labor force participation and civilian activities such as non-profit organizations are included in the plan. Another example is the Ministry of Education and Science's (MEXT, earlier Monbusho) program for Centers of Excellence, aimed at strengthen selected university research groups to world-class level. These initiatives can be interpreted as that the Japanese government aims at promoting creation of new institutional, corporate and civil networks and norms, better adapted to economic growth – but they can simultaneously also be interpreted as attempts to continue traditional policies of informal guiding and "just" change the areas in focus. Nevertheless, most observers seem to be of the opinion that the role of government has changed towards formulation of indicative plans, organizing think tanks and disseminating information.

Paradoxically, it is not impossible that this new role of the central government might partly explain the moves of headquarters to Tokyo from other metropolitan regions, especially Kansai, which has taken place during the 1990s. As long as government's role primarily was informal guiding, the contact pattern did not need to be so frequent. Government's increased role as information source in a still firmly regulated business environment has made it more important for the big companies to have close connections with it, not to miss important, often informal information.

The Japanese society must in several aspects be considered as world leading in the transition to the knowledge society. The educational level is high and science and technology are given highest priority. University-industry linkages are not at all as negligible as official figures indicate. The innovations systems that European countries currently aim at develop partly originate in Japan. Japan is the leading product innovator in the expansive sector of consumer electronics and has the highest number of patent applications per capita among the big OECD countries. Japan has a large number of metropolitan regions with strong purchase power, which constitute potential markets for products in early stages of the product cycle.

However, Japan seems to be in shortage of some essential features of the knowledge society, primarily creativity and individualism, both strongly connected to entrepreneurship. Japan's long-term strategy of being a follower and an improver of foreign innovations has – in combination with traditional "hierarchical groupism" and risk aversion – come to a dead end when there is no one to follow. The crucial question is how much of the relations, norms and institutions of the systems for economic growth and structural renewal that were formed under the industrial economy that are able to contribute to the knowledge economy's growth.

5.3.3 USA and California

The U.S. is certainly not a country without governance, law and regulations, but in certain areas the well-known American characteristics of anti-government culture, spirit of free competition, the non-hierarchical spirit of equality, individuals' rights, etc. seem to play an important role. Relations on the labor market were discussed above. Another example is the norms and relations of the systems for economic growth and structural renewal. From a regional perspective, it is possible to characterize USA as a country of 50 competing experiments.

Entrepreneurship – an attribute often connected to the U.S. – is, according to the abovementioned GEM-study, considerably higher in the U.S. than in Sweden and Japan (Reynolds et. al. 2002).[12] A special American characteristic is also the positive attitude to technology development and innovations. The production line was perhaps the most significant of these innovations during the industrial era and an expression of how early on America took the lead in developing high-productive manufacturing methods. A market with a relative scarcity of labor and – in contrast to large parts of Europe – almost non-existent resistance against labor-saving methods, contributed to the rapid breakthrough of the productivity-increasing methods.

Parallel to the development of production methods, American companies also took the lead in developing product innovations in many fields and in the rapid adaptation and improvement of external innovations. A fundamental component in the latter respect is company information retrieval. Table 6 compares the American and Japanese approaches.

Table 6 American and Japanese approaches to company information retrieval.

Characteristic U.S. approaches	**Characteristic Japanese approaches**
Personnel movement across firms	Learning from customers, competitors, long-term employees and employees of *keiretsu* members
Specialized personnel assigned to task	Mobilizing largest possible number of employees to meet outside challenge
Heavy use of consultants	Cooperative corporate activities
Strong role for professional associations	Push from government
Mergers and acquisitions	Spin-offs from established companies, licensing technology

Source: Cole (1995, pp 369)

[12] USA was ranked 11 of 37 countries in Total Entrepreneurial Activity, with mainly developing countries ranked higher. Only two developed countries, New Zealand and Iceland, were ranked higher than the U.S. (Reynolds et. al. 2002).

The differences between the two approaches are obvious. While government initiatives have been important in Japan at company level as well as at national level, this has, with one exception, not been the case in the U.S. The exception is governmental financed education and research.

The positive attitude to technology that permeates the American society has meant large grants to higher education and research both from private donators and government. Compared with the European academic ivory towers' focus on education of public servants and basic, intra-academic research, American research became much more applied and utility oriented. There are a number of examples of early university-industry cooperation at local and regional level that in many cases still continue (see e.g. Rosenberg 1998). And it is not a coincidence that it was in the U.S. that Frederick W. Taylor wrote and published his famous "Scientific Management" already in 1911.

Important driving forces behind the increasing R&D cooperation between government, universities and industry were the two World Wars and the Cold War in which the "space race" against the Soviet Union constituted a component part. An explanation to the relative sensitivity of the U.S.' universities to the demand of government and industry was probably their greater dependency on external financing, compared with European universities (Lowen 1997).

While government in Japan and Sweden focused on state-supported R&D solely linked to the big corporations, the U.S. federal R&D commitments were also directed to smaller companies. This happened in two ways: by offering such a large amount of applications that also small companies found it worthwhile doing development work in order to get a contract; and by orders to many small firms that would compete for the best solution (Mowery & Rosenberg 1998).

The development of the American system of higher education and research has often been described as mainly unplanned. Feller (1999) considers four features as particularly important: decentralization, competition, regionalism and the coupling of research and graduate education. The last feature is the only one it has had in common with the European and Japanese systems. The U.S. has deliberately refrained from building a federal university system. Instead it has been left to private initiatives

as well as to the states to form a decentralized system from below. Competition and rapid adaptation of new technology have been the everyday life of American universities. An often-cited example is MIT's course in electronics, which started in the fall semester of 1882, after the introduction of the dynamo the same year. Stanford University's role at the R&D frontier in Silicon Valley's IT industry since the 1960's is another example. The role of universities in regional development has just recently become a subject of European regional policies. In the U.S. "…the idea that universities should have a regional function took firm root from the beginning" (Nevins 1962, p. 23). "Colleges and universities have historically been sources of community boosterism and regional pride" (Feller 1999, p. 79).

The differences between American universities and their Swedish and Japanese counterparts can be expressed in terms of social capital with norms and relations. The decentralized, competitive and regionally embedded American universities have had much stronger incentives – and formal authorization – to interact and collaborate with external actors. Several factors have contributed to this. American universities compete not only by academic criteria, but also in an external market for students and research grants. Research results and former students' careers have been important features in universities' marketing to recruit students. Cooperation with local business and government has been necessary to increase budgets and thereby increase output. In the utility oriented American culture, universities have been forced to show viable results of their governmental and private grants, to a much higher degree than in Europe. In the competition between states, counties and regions, universities have long been considered a key actor.

For several decades, there has been a relative shift of economic activities in the U.S. from the Northeast and the Midwest to the South and the West. The industrial crisis that hit the Rustbelt especially hard was one component part contributing to this shift. The shift has among other things been explained by low union density and thereby lower wages in the South, or by people's preferences to live in a warmer climate.

The growth of the high-tech industry in Silicon Valley has been explained by cultural differences between companies and civil culture in America's east and west coasts, where the latter is considered less formal and less hierarchical. In contrast to the East, exemplified by Bos-

ton's high-tech cluster Route 128, the West in general and Silicon Valley in particular has been characterized by a culture of mobility, job-hopping and bias against hierarchical, vertical integration. This has been an important factor behind knowledge transfers between firms and start-ups (Saxenian 1994).

Gilson (1999) has suggested an alternative explanation for differences in knowledge transfer between firms in different parts of the U.S.: differences in the legal infrastructures, especially the rules governing the enforceability of postemployment covenants not to compete with their former employer, by working for a competitor or by starting a new business for a period of time after employment terminates. "Postemployment covenants not to compete have the potential to restrict seriously the movement of employees between existing firms and to start-ups and, hence, to restrict seriously employee-transmitted knowledge spillovers. California prohibits covenants not to compete; Massachusetts [where Boston is situated] enforces them" (Gilson 1999, p. 578). While property rights have been more in the focus of the legal infrastructure in other parts of the U.S., California's legislation have focused on the individual's freedom and the right to compete.

The importance of the social networks of Silicon Valley has been emphasized by Castilla et. al. (2000). They divide the networks in three categories: a) networks of access and opportunity; b) networks of power and influence; and c) networks of production and innovation. The labor market exemplifies the first category: "Workers' social connections are considered resources that yield economic returns in the form of better hiring outcomes. Employees hired through social networks tend to quit less, experience faster mobility inside an organization, and perform better than those recruited through other means" (Castilla et. al. 2000, p. 220). The second category is exemplified by venture capitalists, which act as brokers, management consultants and recruiters. "Many start-ups and spin-offs are founded by engineers who are naïve about management; venture capitalists can access an informal and formal network of experts to further the long-term viability of newly created firms. Further, venture capitalists often (re)organize the boards of directors of their start-ups, sometimes reducing the role of original founders and even severing the original founders from their own creation…" (Castilla et. al. 2000, p. 221f). Concerning the last category, the authors state that par-

ticularly in high-tech industries "… social networks help transmit information and knowledge among different firms and individuals and produce information". In regions like Silicon Valley, with a rapidly changing environment where innovation is essential "… it is not an exaggeration to say that effective social networks determine a firm's chance for survival" (Castilla et. al. 2000, p. 222).

The first modern venture capital firm in the U.S. was connected to MIT in Massachusetts (Lerner 1999) but California and Silicon Valley in particular soon took the lead and can to a large extent be considered the cradle of America's (and the world's) venture capital industry. In 2002, 42.3 per cent of the venture capital invested in the U.S. was invested in California (PricewaterhouseCoopers 2003).[13] Thus, also in this field, California has been a forerunner in developing new institutions with a special social capital for capitalizing in new technology.

Castilla et. al. (2000) show that the venture capital firms of Silicon Valley consist of two clusters. One of them is composed of firms that are strongly interconnected to each other. Many of the oldest and most influential firms are parts of this cluster. Several of these firms have common founders. The firms of the second "cluster" have much less contacts with other VC firms. According to the authors, it is possible that the firms of this cluster are more integrated with activities outside the venture capital sector, among them the technical sector itself. This finding shows that the Silicon Valley does not consist of *one* network and that although the professional networks of Silicon Valley are dense, they are not dense everywhere.

These examples above indicate that social capital and culture, as well as institutions, in California have been particularly favorable for expansion of knowledge-intense sectors and related issues such as entrepreneurship. California, and Silicon Valley in particular, is often considered the prototype of the knowledge economy. Yet it is important to stress that the Californian knowledge economy has its center in certain sectors, its applications in many sectors, but that certain layers of the diversified Californian economy is hardly knowledge-based at all. Those aspects of the Californian economy and the social tensions they imply are rarely considered when California is considered *the* model.

[13] The share was approximately the same before and during the peak in 2000.

Moreover, it is one thing to take the lead but another thing to stay in the lead of economic development. Gerschenkron (1962) discussed with historical examples why countries have failed to stay in the lead of industrialization and what advantages late followers have gained from this. An interpretation of some of Gerschenkron's arguments in modern terms is that transfers of technology and institutions take place between the leaders and the followers and that a process of ubiquitification takes place, in which the followers can gain from lower costs of labor, real estate, etc.

Both in the U.S. and the rest of the world there are a number of regions studying California's development and trying to copy or adopt the lessons from California. Codified knowledge spills over as well as institutional innovations such as venture capital firms. The venture capital firms grew up in Silicon Valley, but have now spread to other American high-tech regions and the venture capital firms of Silicon Valley have also established themselves in these regions. Thus, there are several factors pointing in the direction that California might be surpassed by other American states.

California's more "sticky" advantages might be in features of the social capital it has developed. Non-institutionalized networks and the tacit and/or disembodied knowledge that is distributed in them are not possible to copy or move (see e.g. Malmberg & Maskell 2003 and Asheim 2003). The decisive variable for staying in the lead is in this perspective the region's ability to stay creative.

5.3.4 Conclusions

The analysis indicates that the United States and especially California, so far leads development growth and innovations of the knowledge economy as well as corresponding norms and relations and institutional/organizational expressions of these. A simple conclusion could be that Sweden and Japan should do their best to copy the Californian model. However, such a conclusion would probably be misleading.

Each of the countries developed successful, but different models for growth in the manufacturing-industrial economy, models built on their cultures, traditions and existing social capital. Both Sweden and Japan learned much from American innovations and production methods and

developed own innovation systems – long before the term was coined – but these lessons were adapted to the countries' peculiarities.

Today Sweden and Japan have to unlearn much of what was taken for granted during the industrial era. The Swedish and Japanese governments are taking measures to facilitate the growth of the knowledge economy by institutional changes: deregulations, increasing grants to higher education and research and demands for university-industry co-operation, increased attention on the needs for venture capital, etc. The non-institutionalized social capitals are much harder to change with simple policy measures, like allocating resources and forming institutions. Still the social capitals of the two countries are changing; new values, norms and networks are slowly replacing the industrial ones. Does this mean that policies are unable to affect the kind of social capitals that have been discussed here? Not necessarily.

In contrast to the U.S., government both in Sweden and Japan has a tradition of "helping" the economic actors to form platforms, relations and networks. A modern expression of this is the establishing of Vinnova, the new Swedish agency for innovation systems. It is possible that governments' role in changing social capital mainly lies in this field. The crucial question is in that case: which actors should be prioritized? A policy for innovation systems in a growing knowledge economy must be directed towards actors other than those belonging to today's leading actors in many regions.

5.4 Civil society's social capital

5.4.1 Some quantitative figures

During the 1990's different aspects of the civil society received increased attention both in academic research and in the public debate. The already mentioned works of Robert Putnam underlined the importance of civil society as a source of social capital and thus contributor to both democracy and economic growth.[14] Simultaneously, but independently of Putnam's work, the Johns Hopkins Comparative Nonprofit Sector Project started to publish a large number of reports on the nonprofit

[14] It should, however, be noted that Putnam does not use the term "civil society" but the concepts "civic community", "civic culture" and "civic engagement". Here we include these concepts in the concept of civil society.

sector in more than 20 countries.[15] In the economic restructuring of the industrialized world, the welfare state was put into question and non-profit and voluntary organizations were seen as actors that could take over certain public social services. Another source of interest in the civil society was the fall of communism in Central and Eastern Europe and the "vacuum" that emerged when there was no civil society there to take over when the state changed its role. Thus, the political interest in the civil society has emanated from three different perspectives: democracy, economic growth and welfare/public sector/state cut-downs. However, here we restrict ourselves to the economic growth perspective.

As was noted in the introduction to this chapter, nonprofit/voluntary and non-governmental organizations might be considered as a "core" of the civil society, but just as the private and public sectors, the civil society also consists of phenomena more difficult to measure. One part of the civil society is its social capital, i.e. its social networks with norms, attitudes, values, etc. There are obvious methodological problems in combining quantitative measures of networks with qualitative variables such as attitudes into a single measure of civil society's social capital (see e.g. Fukuyama 1997 and Westlund 2003). Most studies have "solved" this problem by focusing either on networks or on attitudes. Here we start with the quantifiable variables, i.e. the organizations, and thereafter we carry on a discussion on the importance of the qualitative aspects.

Neither the quantitative nor the qualitative aspects are free from problems per se. The definitions of organizations belonging to the civil society differ between countries. Nonprofit sector is mainly an American concept. The Swedish *folkrörelse* (popular movement) and the Japanese *koeki hojin* belong to the same sphere, but are not defined in exactly the same way. The Johns Hopkins Project used a common definition of nonprofit sector organizations in all countries and the results of this project are therefore the best that are available for international comparisons.

Table 7 shows some comparable figures of the nonprofit sectors' relative size in the three countries studied during the first half of the 1990s. Both concerning share of total employment and share of GDP, Sweden has the lowest share and the U.S. the highest. The nonprofit sector's share of

[15] Results from the Johns Hopkins Project are presented in, among others, Salamon & Anheier (1994) Salamon et. al. (1996a,b), Salamon et. al. (1999) and Salamon, Sokolowski & List (2003).

employment in the U.S. is more than double the sector's share in Japan and more than three times greater than Sweden's nonprofit sector. However, the differences in share of GDP are smaller. Considering the large size of the public sector in Sweden, the nonprofit sector's small share of employment and GDP is hardly surprising. On the other hand the public sector being the size it is, it is not possible to explain the differences between Japan and the United States.

Table 7 Nonprofit sector's share of total employment and GDP in Sweden (1992), Japan (1995) and the United States (1995)

	Employment	**GDP**
Sweden	2.5%	4.1%
Japan	3.5%	4.5%
United States	7.8%	6.9%

Source: Salamon et. al. (1996b), Salamon et. al. (1999), Lundström & Wijkström (1997).

Table 8 shows another important difference between the three countries, viz. the sector's composition of paid work and non-paid, voluntary work respectively. The big difference seems also here to be between Sweden and the other two countries. While only non-paid volunteers perform 25% of the work in the Japanese nonprofit sector, as much as 76% of the work in Sweden's nonprofit sector is done by non-paid volunteers.

Table 8 The nonprofit sector's voluntary degree. Full time equivalents (FTE) of paid work, non-paid work and share of non-paid work of the total work performed in the nonprofit sector in the three countries.

	Paid work (full time equivalents)	**Non-paid work (full time equivalents)**	**Voluntary degree (per cent)**
Sweden (1992)	83 000	270 000	76%
Japan (1995)	2 100 000	700 000	25%
United States (1995)	8 600 000	5 000 000	37%

Source: Salamon et. al. (1999) Wijkström & Lundström (2002).

Table 9 underlines even more the importance of non-paid voluntary work in the Swedish nonprofit sector compared with the other two countries. Sweden's voluntary work related to the population is two thirds greater than the United States' and more than five times greater than voluntary work in Japan.

Table 9 Voluntary work per capita in the three countries.

	Voluntary work (FTE) per capita
Sweden (1992)	3.18 %
Japan (1995)	0.56 %
United States (1995)	1.90 %

Source: Salamon et. al. (1999) Wijkström & Lundström (2002).

How can these huge differences be explained? Table 10 probably offers an important explanation. Whereas the countries have similar percentages of important activities as education and social services, Japan and the United States have more than 40% of nonprofit employment in health care compared with Sweden's 3%. Sweden, on the other hand, has almost a quarter of its nonprofit employment in culture, sports and recreation and almost 15% in professional activities (trade unions, employers' federations, etc.), while Japan's and the U.S.'s shares of these activities are much smaller. If we just look at the non-paid voluntary work in Sweden, almost half of it (44.5%) is performed in culture, sports and recreational activities.

Table 10 Nonprofit work divided in different activity fields in the three countries.

	Sweden paid work %	Sweden non-paid work %	Japan paid work %	United States paid work %
Culture, sports, etc	24.0	44.5	2.9	6.5
Education	20.7	2.0	21.0	19.1
Health care	3.3	0.0	44.1	41.1
Social services	12.0	4.5	15.6	12.0
Development, housing	6.1	3.5	0.3	5.6
Advocacy, politics	6.8	17.5	0.2	1.6
Religion	6.0	9.0	6.5	11.2
Professional	14.7	13.5	4.7	2.6
Other	6.4	5.5	4.9	0.2

Source: Salamon et. al. (1999), Lundström & Wijkström (1997), Wijkström & Lundström (2002).

Health care is a highly professionalized activity in developed societies. Thus it is quite logical that countries with a large share of nonprofit activities in health care also have a professionalized nonprofit sector. In Sweden, where health care almost solely is a task for the public sector, voluntary activities in sports and leisure organizations and other interest organizations, e.g. trade unions, dominate the nonprofit sector.[16]

Thus, both the size and the structure of the nonprofit sector differ between the three countries and so does then the civil societies. However, it is hard to find any indications to the fact that the differences in the civil societies – measured in this way – should have had any impact on the economic development in the countries. A strong, independent civil sector has traditionally been an American characteristic, while Japan's smaller nonprofit sector to a high degree has been regulated by central and local government. The largest civil sector activity in the U.S. and Japan, health care, has in Sweden been a governmental task ever since the Catholic Church was nationalized during the reformation in the 16th century (Wijkström & Lundström 2002). In spite of the organizational differences of their civil societies, the three countries experienced a high growth during the industrial era.

In other words, it seems hard to find any support for the idea that the civil society, measured by its organizations, their absolute and relative size and the amount of voluntary work, should have any significant impact on economic growth in the three countries. But of course, the civil society cannot just be measured quantitatively. The qualities of the civil societies and their social capitals can differ considerably even if their quantitative measures are similar. Moreover, in accordance with the general hypothesis that the knowledge society needs another social capital than the industrial society, it can be assumed that the knowledge society needs a civil sector with new qualities. These qualitative aspects are discussed in the following subsections.

[16] This explanation has also been discussed by Wijkström & Lundström (2002).

5.4.2 Sweden

The rise of Sweden's popular movements coincided with the industrial break-through in the 1870s.[17] The popular movements were formed with deliberate aims at changing and improving conditions in the early industrial society. The free churches, the temperance movement and the labor movement became the three early predominating popular movements. Also the consumer cooperation and voluntary health insurance associations started before the turn of the former century. However, the great expansion of the Swedish nonprofit sector took place between 1930 and 1970, often with support from national and local social democratic government: The national blue-collar workers' federation doubled its number of members to one million during a few years in the beginning of the 1940s; white-collar workers' unions were started in the 1930s and experienced a steady increase; the national sports association more than increased its number of members from 200,000 in the early 1930s to almost 3 million in the 1990s, just to take a few examples.

As noted in the former subsection, this expansion was concentrated to certain activities of the nonprofit sector. Moreover, the activities' relative strength changed over time. The temperance movement was the predominating popular movement around 1900, but declined thereafter, first relatively, then also in absolute numbers. Also the free churches experienced a steady decline during the second half of the 20th century. Certain activities within social care that were started by voluntary associations were overtaken by the expanding public sector. As in other countries, new social movements, such as environmental and international solidarity organizations have increased in importance since the 1960s (Wijkström & Lundström 2002, Rothstein 2003).

During the economic turndown of the 1990s, public sector cut-downs meant increased tasks for nonprofit associations dealing with social care. There are also general indications on decreasing member activity although the large nonprofit organizations of Sweden still play an important role (Lundström & Svedberg 1998).

[17] During the former part of the 19th century, elite associations, mainly focused on charity might be seen as a kind of predecessor to the popular movements that emerged during industrialization (Wijkström & Lundström 2002).

What role then do the civil society and its organizations play with regard to economic growth and structural change in Sweden? Westlund (2003) investigated the importance of the "social economy" – defined as cooperatives, mutual companies, associations and foundations – on the Swedish labor market and found that it had lost about a third of its employment during the 1990s. However, most of this decrease happened through change of juridical form. Established cooperatives and foundations in e.g. retail trade and the bank sector were transformed to stock companies. A very limited employment growth took place in voluntary organizations and in new, small cooperatives, mainly running kindergartens.

In a study covering Sweden's 289 municipalities, Zackrisson (2001) tested four different measures of civic culture, among others *societal engagement*, measured in election participation and *organizational activity*, measured in the number of voluntary associations per capita. The four measures showed so distinct differences that it was not possible to construct a combined index. The measures of societal engagement and organizational activity even showed significant negative correlation. Zackrisson did not make any formal test of the correlations between the measures of civic culture and the municipalities' economic development, but she found that municipalities most characterized by organizational activity were situated in small, sparsely populated areas and had a relatively low medium income and a small percentage of university educated people.

Thus, the few studies that exist on connections between nonprofit organizations and economic development in Sweden after 1990 do not give any support to the thesis that differences in organizational activity are related to differences in economic development. The impact of civil society on economic variables may happen through qualities like trust, spirit and tolerance, but apparently not through the level of organizational activity. A study by Westlund et. al. (2003) where qualitative aspects of civil society's social capital in two peripheral, sparsely populated municipalities were compared supports to a certain extent such an interpretation. Other studies of connections between civil society's social capital and economic factors are lacking in Sweden.

5.4.3 Japan

The Japanese civil society and its organizations show certain similarities to its Swedish and American counterparts. As shown above, the Japanese nonprofit sector employs a slightly larger percentage of the labor force than Sweden and it is, just as in the U.S., concentrated on health care. However, there are also important differences.

A common opinion is that the development of civil society in Japan has been hampered by an unusually imperious state (Schwartz 2003). After World War II, the official nonprofit sector in Japan has consisted of legally well-defined organizations. Government at central and local level has had strong influence over these organizations and the bulk of their incomes have come from the public sector and service fees. Formally independent, these organizations have acted in symbiosis with the government. The last twenty years and in particular after the Kobe earthquake in 1995, has witnessed another type of nonprofit organizations, basically local grassroots groups, engaged in environmental issues, advocacy, community and international issues. Until 1998, these groups had no legal status and received little public support. However, the strict regulatory environment is still considered a major obstacle for the growth of the civil society (Schwartz 2003).

In contrast to the U.S. and to a less extent, Sweden, voluntary nonprofit activities are increasing in Japan. However, parts of this increase can be explained by governmental grants to schools for activating pupils in voluntary activities. Thus, the increase of the nonprofit sector in Japan is a result of both top-down policies and bottom-up engagements.

A feature of the Japanese civil society seldom mentioned or studied are the local community and residential networks operated by women while the men are at work. It is highly probable that these “invisible” woman networks have played an important role in shaping the social capital of the Japanese civil society – not least due to that many Japanese men have a working situation which does not spare much time for civic activities.

The Japanese civil society is still less studied than the Swedish and the American and there are no inquiries on its connections to economic growth. If, as suggested above, the civil society of Japan to a certain extent has been carried up by housewives, while the men were at work,

this might be interpreted as an indication of a very weak relationship between civil society and the economy. On the other hand, it is possible to argue that this civil society has created very favorable conditions for the men to concentrate on their job and thereby contributed to economic growth.[18] If the westernization of Japan continues, we might expect among other things a growing share of married women on the labor market, but also a westernized labor market without lifetime employment. Both these trends would mean adrift identities for a large part of the Japanese population. The growth of voluntary engagement in the Japanese civil society might in this perspective be interpreted as a search for new identities.

5.4.4 USA and California

Even if the civil society has roots that stretch away back in history (Ehrenberg 1999), the United States is traditionally seen as the seedbed of the modern civil society. Often quoted is the French aristocrat Alexis de Tocqueville who visited America 1831-32 and three years later wrote:

> *Americans of all ages, all stations in life, and all types of disposition are forever forming associations. There are not only commercial and industrial associations in which all take part, but other of a thousand different types… Nothing in my view deserves more attention than the intellectual and moral associations in America.*
>
> *(Tocqueville 1835/1969, quoted from Putnam 2000, p. 48).*

Putnam's (2000) comprehensive exposition of the American civil society shows that civic engagement, among others measured in membership in nonprofit organizations, philanthropy and work in community projects, reached its peak in the 1960s, to thereafter decline. Volunteering is the only activity that has increased. This increase is mainly caused by a raise in activities of senior people over 60 years of age, but to a smaller degree also by people under 30.

[18] It is highly plausible that the situation in Japan's metropolitan regions can be compared with Lehmann's (1996, p. 25) opinion on career-regions like Cambridge, Mass. and Washington D.C.: "Work absorbs all the energy. It is what people talk about at social events. Community is defined functionally, not spatially: it's a professional peer group rather than a neighborhood. Hired hands, from nannies to headmasters to therapists, bear more of the civic-virtue load than is typical."

Simultaneously with this decline in most voluntary civic engagement, employment in non-profit organizations has increased. Between 1980 and 1995 employment, measured in full time equivalents, grew by an annual growth rate of 3.6%, with almost similar growth rates for the 1980's and the first half of the 1990's (Salamon et. al. 1996 and Salamon et. al 1999). The dominant source of income of the U.S. nonprofit sector is fees and charges, which in 1995 accounted for 57% of the revenues. The percentage of fees and charges also rose during

1990-95. Reductions in government support have forced the nonprofit organizations to become more market-oriented and commercialized. There seems to be "…a steady broadening of the gap between what nonprofit organizations have had to do to prosper and grow and what popular mythologies have expected them to do to retain public support. The result has been a virtual crisis of legitimacy for America's nonprofit sector…" (Salamon et. al. 1999, p. 280).

Even if nonprofit sector employment figures indicate an expansion of the American civil society, this expansion seems to have happened through increased professionalization and market orientation and decreased civic engagement. Thus, the nonprofit sector's professional growth does not contradict Putnam's findings.

However, the crucial issue from our point of view is whether, and in that case how, the social capital of the American civil society would have an impact on the knowledge economy's growth? Several American scholars have questioned the connection between the social capital of the civil society and economic growth and renewal. Florida (2002) cites statistical analyses, covering one hundred American regions during more than three decades. The analyses revealed no evidence that the social capital of the civil society would lead to regional economic growth; the connections were in fact negative. Florida therefore dismisses "social capital" as a variable contributing to economic growth and instead focuses on his own concept "creative capital", which showed good correspondence with regional economic growth. This creative capital is defined through indexes for talent, tolerance and diversity. Without going into details, Florida's creative capital can be interpreted as a combination of certain measures of human capital (educational level) and what we in our terms would denominate as qualitative (tolerance) and quantitative (diverse networks with "weak ties") aspects of a community's social capital, be-

yond civic engagement and size of the nonprofit sector. This means that Florida's criticism of "social capital" as an explanation for economic growth is directed against the simplest variants of civil society's social capital. Florida's results can in fact be interpreted as a support for the importance of other aspects of social capital, both in the civil society and in business life.

A study by Cohen & Fields (1999) of social capital in Silicon Valley gives further support to this interpretation. According to their view, Silicon Valley is:

> *"…an economic space built on social capital, but it is a vastly different kind of social capital than that popularized by the civic engagement theorists. In Silicon Valley, social capital can be understood in terms of collaborative partnerships (…) related specifically to innovation and competitiveness. It is the networks resulting from these collaborations that form the threads of social capital as it exists in Silicon Valley. What these networks of innovation in Silicon Valley share with the networks of civic engagement is simply and only a common network-like structure. There is virtually nothing in the history of Silicon Valley to connect its networks of innovation to a dense civil society"*
>
> *(Cohen & Fields 1999, p. 109).*

Instead, Cohen & Fields claim that the important social capital of Silicon Valley consist of focused, productive interactions among a number of actors and institutions: the leading universities, U.S. government (as research financer and lead-user), venture capital firms, law firms, etc. They also stress the labor market as having particular characteristics – no stigma in leaving a big company to launch a start up, rapid turnover and recruitment of talent – reflecting a certain social capital. In other works, Cohen & Fields' view on Silicon Valley's social capital has many resemblances with our concept of business-related social capital.

Also figures presented by Putnam (2001) himself point in the direction that civic engagement and economic development are not spatially correlated. In a study of 30,000 Americans in 40 communities, rural and/or stagnating regions scored highest in civic engagement, while rapidly expanding metropolitan regions were lowest. One explanation of this

might be that the focus on civil society excludes the sectors of society where economic growth is created – business life. Putnam's perspective is that of the political scientist and is concentrated on democracy issues. Also in the U.S. there are very few studies on the relationship between enterprises, their business success and their embedment in their local environment – in which the third sector is often an important component. One interesting exception is a study by Kilkenny et. al. (1999) that in an empirical test showed the significance of reciprocated community support in the success of over 800 small businesses in small towns of Iowa, USA. Using logistic regression, they found that the interaction effect of an entrepreneur's service to the community, reciprocated by community support of the business, was the single most significant determinant of business success among dozens of indicators and characteristics of the managers, the businesses, and the communities. Thus, these results support the view that local initiatives in the civil society might contribute to creating a favorable local environment, milieu or culture for business and entrepreneurship.

5.4.5 Conclusions

The underlying assumption in Putnam's works is that trust and other "good" features of civil society's social capital, are being transmitted without greater obstacles to other parts of society, e.g. business life. If this assumption is correct, a fundamental question is how this transmission takes place, i.e.: what kind of interplay exists between civil society and business life?

The answer should be that the interplay takes place through individuals who, in their working hours, are a part of business life and in their leisure time are a part of the civil society. The validity of this assumption is determined by the extent to which civil society and business life is based on similar norms and values. This is probably the case on a very general level. There are good reasons to believe that there is a correlation between e.g. the grades of corruption of a central part of civil society such as politics on the one hand and business life on the other.

But there are also reasons to stress the differences between civil society and business life. According to Polanyi (1944), civil society is based on principles of reciprocity and redistribution while business life is based on a market principle. This means that beyond the basic norms that are

shared by the whole society, there are fundamental differences between the values of civil society and business life. Values and norms cannot easily be transmitted from one sphere to another since the identities of each sphere are based on different principles.

Thus, there seems to be strong arguments against the hypothesis that civil society's social capital has a positive impact on economic variables. The assumptions of close connections between civil society and business life and that differences in civil societies' social capital are also reflected in the social capital of business life are hard to confirm both in theory and in practice. Putnam (1993) did find a strong correspondence between "civility" and economic development of the Italian regions, but these findings have not been confirmed in other countries. One explanation might be that Italy, for historical reasons, is a special case. It is probably not possible to find any other developed country with such huge differences between the regions' civil societies. If this is true, the regional disparities in civility in other countries are *in general* too small to have any significant impact on business life's transaction-related costs.[19]

However, in the discussion on civil society's impact on economic variables, there is an often neglected perspective, viz. *the market*. On the market, the individuals of the civil society are consumers choosing between the products of business life.

The individuals' choices of products are not only determined by the price but also by various types of social considerations, preferences, norms, values, etc. These social considerations are as a rule influenced by the information the individual receives from its social environment, including the civil society's organizations. In that way, the civil society affects sales of products and indirectly the behavior of enterprises.

Business life is increasingly developing strategies to handle trends and preferences in the civil society and use them as a competitive device. Multinational retail trade companies like, e.g., IKEA and The Body Shop have marketed themselves through an ethical profile. Palmås (2004) analyses how Volvo during the 1990s started to use "contra-ex-

[19] However, intra-regional differences in civility in metropolitan areas, e.g. between inner-city ghettos and prosperous districts, might very well be of such a magnitude as to achieve a correspondence between civility and economic development level.

perts" from NGOs and interest groups to facilitate picking up and incorporating information from the civil society in Volvo's innovation activities. Volvo's methods are seen as an example of a general tendency among large companies to establish forms of cooperation with the civil society, the aim of which being to minimize risk of the companies becoming victims and so increase their opportunity to utilize changes in their industry caused by "contra-experts". Palmås claims that this interplay between companies and the civil society results in the emergence of new types of actors: "activist-employees", "hybrid-consultants", "hybrid-activists" and "expert interest groups".

In this enterprise perspective, the civil society is influencing business life through consumers and citizens. But, instead of taking place at local and regional level, being built on stable values and long-term trust, and having impact on transaction-related costs, this influence is strongly connected to globalization, based on changes in values and preferences, and is on the one hand expressed in changes in consumption and citizens' activities and on the other in companies' product innovations and design.

However, in the regional perspective discussed by Florida (2002), civil society's impact on regional development is assumed to take place through those local/regional "spillovers" from civil society to business life, in a way similar to what Putnam supposes. The difference in this respect between Florida's and Putnam's views is that Florida stresses diversity and heterogeneity of networks and values, leading to tolerance and creativity, while Putnam emphasizes the homogeneous qualities of networks and values, which contribute to understanding and reduction of transaction costs.

Both enterprise and the region have two strands of arguments averring that civil society is affecting the economy. In Putnam's view, this happens mainly through shared norms and values, distributed in dense but open local/regional networks, resulting in stability and trust that reduces costs for the enterprises, the collective development of which becomes the region's development. It is, in line with this view, also possible to argue that this "overspilled" trust has positive effects on information exchange between enterprises and thus on innovations. According to the other view, here exemplified by Palmås and Florida, civil society is influencing the economy by *producing change* to which enterprises and

regions must react. Enterprises that develop methods to observe, absorb and utilize civil society's changing trends in their innovation processes acquire a competitive advantage. Regions that develop a tolerant and diverse civil society become – compared with regions with a homogeneous civil society – more attractive to creative people and show a more positive development.

A possible interpretation is that the two strands of arguments are referring to different types of societies. In line with the discussion in Section 3, a stable, homogeneous civil society is a civil society primarily adapted to the manufacturing towns and cities of the industrial society. Correspondingly, a changing, diverse, heterogeneous civil society is a civil society essentially adapted to the metropolitan regions of the knowledge society.

In accordance with this argument, it has been claimed that the crisis of civil society, of which Putnam found evidence in the U.S., merely reflects a downturn of the civil social capital of the *industrial* society, whereas other, new forms of (civil and business) social capital develop in the emerging *knowledge* society. The Internet, cellular phones, etc. offer new networks for social interaction among young people, who do not find many of the traditional organizations very exciting. Certain sports, e.g. bowling, lose in popularity, while others, e.g. soccer, has been rapidly increasing in the U.S. (Lehmann 1996). Another argument is that of e.g. Cohen & Fields (1999), that in the knowledge economy's career communities, formal and informal professional networks substitute organized civil networks.

Probably no one would deny the importance of a strong and open civil society for democracy. This importance is in itself a sufficient argument for the attention the concept of civil society has received since the beginning of the 1990s. As shown in this section the civil society also exerts influence on the development of enterprises and regions. However, in the emerging knowledge society, it is not the civic engagement, number of organizations and stable norms, values and networks that Putnam has focused upon that contribute to economic development. Instead it seems to be a civil society characterized by tolerance and diverse norms, values and networks.

6 Concluding remarks

This report has discussed the role of social capital, in the transition from industrial economy to knowledge economy in three economically advanced countries. The focus has been on a) employer-employee relations in a broad sense; b) norms, relations, institutions and organizations connected to innovations and economic growth and renewal; and c) the social capital of the civil society.

The analysis has shown that the three countries, during the industrial epoch built distinctive, but in terms of growth, successful, models with large differences in social capital and its institutional and organizational expressions. In the transition to the knowledge economy it is the American, particularly the Californian, model that so far has been most successful. The competitive, more flexible and more globalized Californian society seems to have offered the best soil for the knowledge economy's breakthrough.

However, compared with the Swedish and Japanese models with social capitals and formal institutions and organizations of a considerably larger homogeneity, the Californian/American model is not *a* model, but a number of sometimes coexisting, sometimes competing *models*, each with their particular social capital and formal institutions and organizations. These Californian/American models seem to differ between industry and region to a much larger extent than is the case in Sweden and Japan. Given the advanced supply and demand conditions which, in the form of high levels of education/research and consumption patterns exist in all the three countries studies, this special American institutional/organizational diversity seems to have created strong incentives and few obstacles for the expansion of the knowledge economy.

The systems of the industrial society were mainly national systems. The growth of the knowledge economy and globalization has made many national components of societies' social capital and formal institutions and organizations obsolete. A tentative, general conclusion of this report is that it is the diversity of the Californian/American society that has contributed to the growth of high-tech industry and other applications of the knowledge economy. This has so far happened in a relatively small

number of regions that have been able to combine diversity and tolerance.

If this conclusion is correct, this means that Sweden and Japan cannot coexist with the global knowledge economy principally because of the homogeneity of these societies. National systems are no longer sufficient in order to obtain information rapidly, develop it creatively and make productive use of it. The continued growth of the knowledge economy in Sweden and Japan – and economic growth in general – depends on the countries' ability to transform their social capital and formal institutions and organizations in a way that

- facilitates import and integration of existing, external knowledge,
- produces new knowledge based on acquired, existing knowledge
- combines and transforms different knowledge to product innovations, and
- combines and transforms different knowledge to marketing innovations.

Diversity and tolerance appear to be crucial component parts of a social capital that maximizes knowledge import, knowledge production and innovations. The policy ramifications of such a conclusion are wide and imply that successful innovation systems and economic growth are dependent on a number of policy fields. In that case, the great challenge would be to form a strategy in which not only industrial policy, but also policies for, e.g., education, research, immigration, culture and health become integrated parts of the national growth policy in the global knowledge society. Such an interpretation is well in line with the "third generation policy of innovation", launched by the European Commission, which stresses innovation policy as a necessary ingredient in all policy areas (Lengrand et. al. 2002).

Government in Sweden and Japan are today, in accordance with their long-term traditions, actively trying to promote the development of the knowledge economy. This is also taking place on a smaller scale in California. Evaluating those attempts would be an interesting task for policy-oriented research. Another approach would be to focus on a special, knowledge-intense industry and investigate what kind of investment it makes in internal and external social capital. In a coming report, these

two approaches will be combined in a study of the biotech industry in the three countries.

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