The Role of Multinational Firms in Strengthening
The Societal Fabric of Capability Development:
The Case of Intel in Costa Rica

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February 2005
Introduction

It has been argued for some time that foreign direct investment (FDI) has effects beyond direct job creation and tax generation (e.g. Marshall, 1920). Knowledge spillovers are said to help improve the business atmosphere (Findlay, 1978), and finally help create industry clusters (Porter, 1990). Training has been identified early on as an important means of knowledge spillovers (Enderwick, 1985). Although there is general agreement in the literature that these effects potentially exist, the empirical evidence is rather ambiguous (Kapstein, 2002; Narula & Marin, 2003).

The literature distinguishes between different types of potential knowledge spillover effects in respect to FDI. First of all, capability development can take place through forward and backward linkages, i.e. multinational enterprises (MNEs) assist their local suppliers and customers (Blomström & Kokko, 2002: Slaughter, 2002). The second channel is the local labor market to which the MNE contributes skilled employees (Blomström & Kokko, 2002: Narula & Marin, 2003: Slaughter, 2002). Third, the MNE may influence the formal education system in two ways (Blomström & Kokko, 2002): on the one hand, the MNE demand for skilled labor may motivate both the government and people to invest in education and convince highly skilled human resources to stay in the country. On the other hand, the MNE may impact the educational system through taxes payments directed to investment in education (Slaughter, 2002), by funding scholarships or by providing technical advice.

Empirical studies on these effects, however, remain rare (Kapstein, 2002), mostly inconclusive (Hausmann, 2000) or even point “to very limited indirect benefits from FDI” (Narula & Marin, 2003: 7). The discrepancy between potential and empirical effects has been explained in multiple ways. Some scholars see the reason for the conflicting results in overlooked features of both the multinational firm and the host society. Slaughter (2002: 16), for instance, notes that companies may be motivated “to minimize spillover benefits to local competitors” in line with their profit-maximization rationale. On the other hand, Kapstein (2002) identifies social and political structures in host countries as potential obstacles. Elites may be reluctant, for instance, to educational system reforms that would be needed to maximize spillover effects. Given this
complexity, scholars call for a more holistic approach “that includes governments, firms and non-firms” (Narula & Marin, 2003: 29). Others conclude that “micro-level data on plants, firms, and individuals are really needed” (Slaughter, 2002: 24) to understand the different effects coming into play.

We shall take into account these considerations by focusing on a very specific aspect of spillover effects. We intend to complement existing studies by looking at the impact of corporate citizenship motivated initiatives aimed at developing human capital in the host country.1 This is in line with Kapstein’s (2002: 12) call to examine “whether firms might take (the) role (of investing in local human capital) upon themselves, which becomes a particularly relevant question in light of all the contemporary discussion over “corporate social responsibility”. While that debate has focused mainly on environmental and labor-rights issues, perhaps it would be very useful to also focus on skills training.” And indeed, the literature on corporate social responsibility has mainly focused on examining the link between financial and social performance (Carroll, 1999) and conceptual considerations, such as on the responsibilities of multinationals (e.g. Chang & Ha, 2001). As a result, very little attention has been paid to the dynamics of social initiatives and their impact at the receiving end, i.e. society (Margolis & Walsh, 2003), in particular on the nature and effects of training initiatives.

In order to analyze the effects thoroughly, we shall analyze a particular case. It is in the nature of case studies to provide an in-depth view on complex micro-processes and to assess immediate effects rather than to provide empirical evidence for macro level hypotheses (Eisenhardt, 1989). A particular telling case is Intel in Costa Rica. Already at the beginning of the investment process, which resulted in a new USD 400m assembly and testing plant in the mid 1990s2, the company had been involved in a wide range of capability development activities. Without surprise, Intel Costa Rica has already gained

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1 This case study does not intend to provide an overall overview of the relationship of human capital development and FDI. Please see Blomström & Kokko, 2002, Kapstein, 2002 and Slaughter, 2002 for detailed overviews and in-depth literature reviews.

2 In 2004, Intel announced another investment of USD 110m in Costa Rica (Fonseca, 2004).
considerable attention in an array of case studies mainly focusing on the selection process (Nelson, 1999), Costa Rica’s strategy to attract foreign direct investment (Spar, 1998), the importance of clusters (Ketelhöhn & Porter, 2003), enterprises linkages (Monge, 2004) and the economic impact on the Costa Rican economy (Larrain, Lopez-Calva & Rodriguez-Clare, 2000). Although capability development has been mentioned in these studies as an important contextual factor, very little has been said about its underlying dynamics.

The case study is organized around the conceptual frameworks of the societal fabric and corporate behavior of capability development, which will be introduced in the first section. The conceptual framework presented hereinafter has a twofold purpose. It first aims at providing definitions of the basic concepts referred to in the case study. Secondly, it shall guide the subsequent analysis and discussion. The analysis section outlines the nature and dynamics of the Costa Rican fabric and the evolution of Intel Costa Rica, the case in point. The findings of these analyses are discussed in the subsequent section. The recommendation section, finally, summarizes the main insights and provides recommendations for both corporate and public decision makers interested in finding effective ways to engage in successful partnerships to develop human capital in emerging countries.

**Conceptual Framework**

The full extent of the dynamics of corporate contributions to human capital development can only be understood by looking at both the macro and micro levels. This will be achieved by introducing the two interdependent concepts of the societal fabric and corporate behavior of capability development.

On the macro level, we define the societal fabric of capability development as the nexus of all capability development initiatives and institutions within a given societal context. In order to classify the institutions in terms of their role in capability building, we have identified two decisive criteria: their institutional orientation and their value aspiration. On the one hand, we shall distinguish between public and private institutional orientation
and not between public and private institutions us such. This dichotomy would be too simplistic in our opinion. We thus follow Bozeman (1987) who proposed to classify institutions according to their level of publicness defined as the “extent to which an organization is affected by ‘public constraints” (Mair & Noboa, 2003: 4).\(^3\) Secondly, we shall define a continuum of value aspirations of institutions with the two poles being economic and social value aspiration. Institutions that aim for generating primarily economic values are positioned closer to the economic value aspiration pole. Other institutions, which may see their primary goal in generating social value, on the other hand, will be positioned closer to the opposite pole.\(^4\) This matrix (see Exhibit 1) allows plotting any institution in respect to its role both in terms of structure as well as contribution. Initiatives, on the other hand, are best understood as activities linking different institutions for the time of the project and thus are conceptualized in our matrix as the linkages. This view allows us to depict the degree of collaboration (Characteristic “Collaboration”). The firm either runs an initiative by itself, in partnership with other institutions or delegates the activities to an external partner.

\(^3\) Said this, we need to acknowledge the inherent imperfectness of any dichotomous categorization given the ambiguity of social concepts.

\(^4\) The two value aspirations are not to be understood as being dichotomous (i.e. an institution pursues either social or economic value) but rather as an orientation framework to posit different types of institutions in terms of their value creation motivation (i.e. a non-profit organization may be best viewed as 80% driven by social and 20% economic goals, whereas a for-profit firm may be better portrayed vice versa).
On a micro level, we aim to portray corporate capability development behavior. In our understanding, this behavior is best characterized along the beneficiary dimension (Characteristic “Beneficiary”). Here, we shall distinguish between six beneficiaries, ranging from employees, potential employees, suppliers, customers, communities and society at large, as can be seen in Exhibit 2. It is important to note that individuals can belong to more than one of these beneficiary groups, depending on their role towards the firm. Linked to this characteristic is the capability specificity dimension (Characteristic “Specificity”). We distinguish between firm-specific and non-firm-specific capabilities, an important distinction when it comes to discussing the impact of educational initiatives (Lynch, 1992). A capability is considered firm-specific if it can only be utilized to its fullest potential in the context of a given corporate organization. In Exhibit 2, we have denoted firm-specific capability initiatives as generating firm internal effects, whereas spillover effects describe initiatives that promise to develop non-firm specific skills.
Finally, we shall introduce four further characteristics of such initiatives: The type of developed capabilities, the motivation, origin and time of the initiative. First of all, we distinguish between technical and civic capabilities (Characteristic “Type”). The latter being any skills that are needed to help foster the understanding of and action towards responsible behavior. These may include skills to identify social problems or execute effective solutions. Technical capabilities, on the other hand, are defined as any skills needed to be successful in performing a certain task in the context of an economic activity.

Furthermore, we assume that either external pressure or enlightened motivation triggers any corporate engagement (Characteristic “Motivation”). It is important to note that we
will only consider the motivation at the decision level, since any corporate behavior could be rationalized by either “motivation” on an abstract, theoretical level.  

The above is closely linked to the time scope of the investment. Initiatives resulting from a reactive motivation tend to be more short-term oriented, whereas pro-active initiatives usually require a more long-term oriented view. In addition, we distinguish between initiatives on capability development that originated in the company headquarters or in their subsidiary (Characteristics “Origin”) and among different starting dates (Characteristic “Initiation”).

In an attempt to add a dynamic component to the framework, we need to understand the concepts as being interdependent. The societal fabric of capability development provides the basic ingredient for business activity and helps attract new foreign direct investment (Effect 1 in Exhibit 3). The corporate capability development behavior, on the other hand, can be an important factor shaping the societal fabric, as corporations are seen as one of the institutions (Effect 2 in Exhibit 3).

This view of “the virtuous circle” (Kapstein, 2002), as simple as it may sound, needs to be put into perspective, as its underlying assumptions are at least discussable. As argued above, the impact of corporate capability development initiatives on society is rather ambiguous (Effect 2 in Exhibit 3). The same can be said about the other effect (Effect 1 in Exhibit 3). Although Noorbakhsh, Paloni and Youssef (2001) show in their study that human capital is a major motivation for investment decisions, it is not the only one, and its importance may vary depending on the specific decision context. Thus, this framework should not be misunderstood as theoretical but rather as a guiding framework.

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5 On the one hand, one could argue that every economic rent creation finally contributes to societal well-being. On the other hand, every corporate social contribution could easily be rationalized as helping improve the corporate image and thus improve the corporate economic value.
Exhibit 3: Conceptual Framework

Thus, the framework shall guide our approach to the case in point. In a first step, we will briefly analyze the emergence and nature of the Costa Rican fabric of Societal Capability Development. Secondly, we will assess the impact of the specific fabric on Intel’s decision to move to Costa Rica. In a final stage, the impact of Intel on the fabric will be examined with a special emphasis on Intel’s socially motivated contributions.

Analysis

Establishing the Costa Rican Societal Fabric of Capability Development

When Costa Rica gained its independence from Spain in 1821, it was mainly an agricultural society. In the meantime, the 3.8 million people nation has turned into a
modern service economy, where about 52% of the workforce generates 64% of the GDP in the third sector. The agricultural roots are still visible with about 20% of the workforce being employed in the first sector, generating 14% of the GDP. This, however, is in sharp contrast to the 1940s when 86% of all experts were coffee, banana and cacao (CINDE, 2001). With a literacy rate of more than 95%, Costa Rica ranks number three in Latin America and number 45 worldwide in terms of human capital development (UNDP, 2004). This high level of human capital development is also mirrored in the country’s competitiveness, where it ranks number 45 worldwide, only beaten by Chile (#32) and Brazil (#34) in Latin America (World Economic Forum, 2004).

What is behind this transformation? Although a series of reasons can be presented, starting from a preferential geographic location to the small size of the country that might have proved advantageous to change, we consider a deep commitment to capability development and collective action as most decisive.

**Commitment to Capability Development**

Several examples, some of them dating back to the 19th century, illustrate Costa Rica’s performance in human capital development as a consequence of long lasting, mutually reinforcing policies. With the abolishment of the army in 1948, Costa Rica redirected the freed resources to invest in the development of the social sector. Today, 40% of Costa Rica's national budget is dedicated to areas of education, health, housing and the social well-being of its citizens (WHO, 2002).

At the center of the approach to education is a well-established and cherished commitment to the maxim of “education for all”. Costa Rica invests the equivalent of six percent of its GDP in education. As a result, schooling in Costa Rica is mandatory from the age of six to 15. At the same time, a set of measures has been taken to promote public education in remote areas and for the least advantaged in particular. President Jose Maria Figueres (1994-1998) declared English and Computer Science classes as mandatory in all of the nation's public schools. The mandatory English training was instrumental in strengthening the competitiveness of the Costa Rican workforce (Hanson, 2000). The creation of the first public university in 1940 marked another major milestone in Costa
 Rica’s approach to capability development (Rodríguez-Clare, 2001b). This commitment was later reinforced by the creation of three more public universities to train professionals for the different needs from both the public as well as the private oriented sectors of the Costa Rican society. Private companies, particularly in the telecommunications, electricity and infrastructure industries, were looking for well-trained engineers and technicians. The educational institutions adapted their curricula accordingly.

Without the public sector understanding of the key role education plays for social and economic development and the long term commitment and consistent investment in education, the successful and sustainable performance in human capital development could never have been achieved.

**Commitment to Collective Action**

These successes would not have been possible without the full support and participation of the different sectors of the Costa Rican society and its citizens. The long-lasting democratic tradition of Costa Rica played a crucial role in this development by helping establish an environment of trust and relative social stability. This background proved instrumental for the emergence of trusted relationships between different societal actors and laid the fundament for effective collective actions.

A recent example of such collaborative efforts has been the “Solidarity Triangle”, a public program led by the Vice President of Costa Rica and integrating different levels of the government, i.e. the community, municipality and state level. The program is based on the belief that citizen empowerment and participation is key to successful development and improvement of living conditions. The main contribution of the program is to provide a framework for planning and facilitating the execution of micro programs. As such, the program does not run any projects under its auspice. Although it

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6 Despite all these efforts, Costa Rica has experienced some social conflicts in the recent years. The government, for instance, has faced repeatedly opposition to some of its reform projects.
is far too early to assess its impact conclusively, first evaluations indicate that the “Solidarity Triangle” has reached a substantial part of the population. A recent study by the World Health Organization found that the program has benefited 41% of the population (WHO, 2002). In addition, the initiative has triggered considerable interest in Central America. Some governments expressed their interest in adopting the program in their countries (INCAE, 2000).

Attracting Intel through the Societal Fabric of Capability Development

What Was Intel Looking for?

When Intel, the world’s largest semiconductor manufacturer generating a turnover of USD 27bn (2003), was looking for a location for a new semiconductor assembly and testing plant in the 1990s, it embarked on a global assessment of more than a dozen different countries, including Brazil, Chile, and Costa Rica. This was not the first time Intel was committed to internationalize its operations. Instead, this decision was part of Intel’s overall global strategy. The degree of internationalization looks very different in the high-end wafer production, where still 75% (2003)\(^7\) of the production is based in the US, and the lower-end assembling and testing, which is mostly performed outside the US\(^8\) (Intel, 2004). This distinction is an important indicator as to what Intel was looking for when choosing a new location for an assembly and testing plant.

The international business literature distinguishes between four seeking behaviors of internationalizing companies (Dunning, 1988). They are said to seek efficiency, resources, growth or strategic assets “whereby the firm wishes to acquire additional assets, which protect or augment their existing created assets” (Narula & Marin, 2003: 19). In the case of Intel looking for an new assembly and testing plant location, they definitively were not looking for growth in terms of market size since semiconductors are easily to be shipped and do not require any cultural customization. Thus the advantages

\(^7\) The remaining 25% are produced in Ireland and Israel (Intel, 2004).

\(^8\) I.e. in Costa Rica, Malaysia, the Philippines and China as of 2003
of building such a plant in a promising market are limited. The main criteria for their
decisions were likely to be based on a combination of their resource and efficiency
seeking motives. They were looking for a location that would provide basic resources in
terms of human capital able to produce at comparatively low costs. Thus they were
looking for resources, a pool of human capital and logistical and manufacturing
infrastructure, able to be utilized in an efficient manner, which is best achieved in a stable
low cost environment.

What Was Costa Rica Able to Offer?

First of all, Costa Rica had to offer an environment that seems to assure efficiency, in
particular its geographic location being close to the important US market, relatively low
labor costs and political and legal stability. In addition, the government was willing to
provide financial incentives in form of tax and custom reductions. On the other hand,
however, the resources configuration both in terms of infrastructure and human capital
was not optimal. Costa Rica was not integrated in the global logistics network and its
human capital pool, though comparatively well-educated, lacked some specific
semiconductor related skills.

Although Costa Rica was not able to provide the appropriate capabilities, it offered a
strong fabric of capability development which was able to ensure Intel that the required
capabilities could be developed quickly. Costa Rica did everything to show the potential
and effectiveness of their societal fabric of capability development as they were dealing
with Intel. Under the leadership of the Coalición Costarricense de Iniciativas para el
Desarrollo (CINDE), the Costa Rican Investment Board, all relevant players of the Costa
Rican society were able to portray themselves as a collective force able to act swiftly and
determined. By doing so, the different social actors recognized that they needed to look
beyond their fences and to achieve synergies. This collaborative effort allowed Costa
Rica to provide pragmatic solutions to challenges presented by Intel and thus turn

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9 This Export Processing Zone regime allows companies to import all their inputs and equipment tax
free and avoid paying income tax for 8 years, paying only 50% of taxes due for the next 4 years.
weakness into strength. The government, for instance, committed itself to build new
electricity substations, sign open sky agreements with the US and even open new
consulates in Malaysia and the Philippines where Intel had operations and was eager to
exchange employees (Spar, 1998). Private firms were fast to enter new businesses that
were created and needed by Intel, such as logistics services. On the other hand, any such
effort embraced with collective enthusiasm bears the risk of making people blind for calls
for caution and objective assessments of potential risks. Critics who have warned that
attracting such a big player might put the country in a state of high dependency that may
turn out to be damaging have been mostly ignored. Costa Rica committed itself to
considerable investments and concessions to attract a company in a global competition, in
which the demanders, i.e. companies, are much more mobile and versatile than the
suppliers, i.e. states. In such a competitive environment, such dependencies may easily
turn to harm the state’s bargaining position in future dealings with the firm.

The crucial part of this collective effort, however, was achieved in the area of capability
development. It was “Intel’s most pressing concern and Costa Rica’s most interesting
concessions” (Spar, 1998: 19). The distinct feature of Costa Rica’s approach to education
was that they pursued a highly collaborative strategy integrating Intel into the areas most
relevant to the country’s future: Science and technology. By doing so, Intel suddenly
extended its role from a sole beneficiary of the Costa Rican societal fabric of capability
development to an important contributing force.

**Intel Impacting the Costa Rican Fabric of Societal Capability Development**

**Bridging the Capability Gap**

The most pressing concern in the mid 1990s was to bridge the capability gap. Intel
needed almost 2,000 skilled workers and technicians. The pool of skilled people,
however, was far too small in tiny Costa Rica (Nelson, 1999). In order to assure that
students would be trained accordingly to Intel’s need and due to a lack of local expertise,
Intel played a very active role in supporting local educational institutions and hereby
leveraged the existent educational infrastructure. Their engagement was initially targeted
at two levels of the Costa Rican educational system.
On the one hand, they helped the technical high schools to strengthen their curricula in close collaboration with the Ministry of Public Education and the Foundation Omar Dengo, a non-governmental organization specialized on technology training, by providing training support (TS) in form of curriculum development and teacher training. To this end, they have concentrated on training teachers in electronics and electro-mechanics on both technical and didactical issues.

“These efforts are very relevant to us, not only because hard and soft skills are needed in MNEs, such as Intel, but also because 20% of our current employees have graduated from these high schools. We are speaking about 500 people at our company and subcontractors.”

Mary Helen Bialas, Academic Relations Manager, Intel Costa Rica (Bialas, 2004)

In addition, Intel established the Centro de Innovacion, Tecnologia y Aprendizaje, an innovation center (IC). In the framework of this program, Intel has donated 33 industrial robots and other manufacturing equipment to 18 different institutions (Arias, 2004). Intel intends to set up more innovation centers in different regions of the country (Bialas, 2004).

At the same time, Intel entered research cooperation (RC) with the two major universities, the University of Costa Rica in San Jose and the Technological Institute of Costa Rica in Cartago. The collaboration took place in different levels. Apart from providing valuable inputs to the design of new courses in the area of electrical/electronics engineering, computer science, and material science, Intel has helped modernize over 22 laboratories over the last five years (Arias, 2004). Students were offered internships at Intel, whereas academics participated in collaborative research programs. The Technological Institute of Costa Rica (ITCR) became subsequently an “Intel Associate”, which entitled it to take part in faculty and students exchanges around the world and to tap into Intel’s research funds.

A very strong partnership was built with the ITCR. This alliance resulted in a new high-quality engineering program that also fulfilled the specific technical requirements for
Intel. Significantly, all students enrolled in that program eventually became Intel employees.

“This alliance is a win-win situation. Intel gets people equipped with skills they need. We get extra funding for project development, equipment and curricula development that puts us in the top league of international universities.”

Juan Carlos Carvajal, Executive Director, ITCR (Carvajal, 2004)

“In the beginning of our relationship, the government and civil society were looking at us as a resource for funding their projects. It took us some efforts to show them that we can become a relevant and knowledgeable partner.”

Mary Helen Bialas, Academic Relations Manager, Intel Costa Rica (Bialas, 2004)

Bridging the Legitimacy Gap

Up to this point, the entry of Intel to Costa Rica had been received with great enthusiasm and almost no opposition. Costa Rica and its citizens felt very proud to have attracted such a prestigious global player. In the midst of this widely held public support and pride, some opposition started to emerge. It came from the inhabitants of the Canton of Belen, the area in which Intel planned to build its assembling and testing plant.

The locals, most of them belonging to the educated middle class, were critical of Intel’s plans to build the plant in their neighborhood. The most relevant concerns were related to Intel’s alleged impact on the environment. In particular, they criticized that Intel had been granted too many concessions, which, in their opinion, did not all comply with Costa Rican law. The discussion culminated in a dispute over an enormous electricity tower built next to the main highway.

“They can do whatever they want with the government but not with us.”

A community member of Belen, 2004

10 Source known to the authors
Intel reacted to the visible and growing dispute by implementing a **community program (CP)** called “Buenos Vecinos” (“Good Neighbors”). At the very beginning, the program was designed under the assumption that the conflicts were due to lack of information and misunderstandings. Therefore, the community was invited to visit the plant. Approximately 3,000 community members have visited the company and even more are expected to do so in the future (Arias, 2004). Apart from this effort to improve the mutual understanding, Intel got involved in other community projects. The company, for instance, trained members of Canton’s Red Cross and financed a local emergency system. In addition, Intel has recently started a process to expend and diversify its community initiative by providing computer training for senior citizens or putting in place an **environmental education (EE)** program in all elementary public schools in the Canton of Belen. Apart from this communication-oriented approach, Intel decided to apply for the **environmental certification (EC)** ISO 14001 to underline its commitment to environmental protection.

As a consequence of this continuous dialogue, confidence and mutual trust has been improved. A study carried out by the company shows that 78% of the population is familiar with Intel community initiatives and rates them positive (Arias, 2004).

**Bridging the Responsibility Gap**

Intel Costa Rica, being a subsidiary of a U.S.-based multinational firm, has not only been influenced in their capability development behavior by local conditions, but also by its headquarters and its corporate culture. Intel has been known for its tough and highly competitive market behavior. This was mainly driven by the inherent win-or-lose nature of the competition in the semiconductor industry. Any missed upgrade in the latest chip technology would have resulted in the demise of the whole company (Burgelman & Meza, 2003). Over the years, however, Intel has adopted a more conciliatory approach also due to legal and public pressures (Yoffie, Casadesus-Masanell & Mattu, 2004). This adaptation was accompanied by a profound change in its corporate culture (Burgelman & Meza, 2003) and its corporate citizenship approach.
“Today, business is one of the most powerful forces in the world. With that influence comes responsibility.”

Paul S. Otellini, President and Chief Operating officer, Intel (Intel, 2004)

Although Intel has always considered corporate citizenship part of its identity and a way of understanding the role of a corporation in any given society where it operates, it has increased the number of new programs in recent years as many other multinational firms have also done recently. In 2003, the Intel Foundation made contributions of more than USD 100m (Intel, 2004). At the local level, two different budgets support the programs: a national education budget of approximately USD 1m, and a local community budget of USD 180K, which, however, does not include contributions for used computers or volunteering (Bialas, 2004). Education is considered the main of the five thematic pillars of Intel’s approach to corporate citizenship. Not surprisingly, Intel Costa Rica is also mainly involved in corporate citizenship initiatives in the area of capability building. In addition to company-wide programs that they try to adapt to local conditions, Intel Costa Rica has also run a set of programs initiated at local level.

“We always take advantage of our organizational and professional competences and match them with the needs of the Costa Rican society in our initiatives.”

Danilo Arias, Corporate Affairs Manager, Intel Costa Rica (Arias, 2004)

Within the context of the framework used in this paper, Intel’s capability programs in Costa Rica follow two major objectives. On the one hand, they aim at developing what we call economic capabilities and in particular technical capabilities. A second category of programs, on the other hand, is directed to improve what we call civic capabilities.

Developing Technical Capabilities

Intel is an active participant in the National Program for Educational Informatics (NPEI), a technology training (TT) initiative which is run by the Omar Dengo Foundation. The NPEI includes two subprograms, the NPEI for Elementary Schools, which benefits...
students from kindergarten through sixth grade, and the NPEI for High Schools, which takes aim at students from seventh through the ninth grade in public high schools. Intel’s contribution is the “Intel Teach to the Future” program that introduces the different possibilities for the application of digital technologies in education. In this context, learning is associated with the development of specific competences and skills. The whole program is implemented in 30 different countries. More than 1m teachers have been trained worldwide since its launch in 2000 (Intel, 2004). Although Intel does not aim for short-term returns out of their investments in corporate citizenship related initiatives, some figures suggest a net increase in computer sales of 65% among teachers who participated in the programs (Arias, 2004).

Another company-wide initiative adapted to the Costa Rican context is the Intel Computer Clubhouse (CC), a non-formal community education model developed by the Massachusetts Institute of Technology Media Lab in cooperation with the Museum of Science. The local clubhouses provide computer equipment for young people and promote the use of technology to enable confidence development and to acquiring problem-solving skills. In Costa Rica, the facilities are managed by the Center for Salesian Studies, a religious organization in Alajuelita, south of the capital.

Finally, Intel collaborates with the National Science Fair Commission and the Ministry of Science and Technology in Costa Rica in the science fair (SF) initiative, which the Ministry started in 1989. Elementary and high school students attending one of the 20 regional or the annual National Science and Technology Fair are informed about the relevance of math, science and technology and encouraged to pursue a career in these fields. Over 40 percent of the K-12 student population has participated in science fairs (Cardenas 2004). As a consequence of this success, the government decided in 2003 that every public school of the country should hold a “Feria Cientifica”. The event has even been incorporated into the official school calendar. In addition, Intel invites the winners of the National Science and Technology Fair student competition to participate in the Intel International Science and Engineering Fair, in the US, the world’s largest pre-college science competition.
“I am very thankful for the donation that Intel has made and for the social responsibility work that Intel carries out with our educators for the benefit of the country.”

Dr. Astrid Fischel, former Minister of Education, Costa Rica (Intel, 2004)

 developing Civic Capabilities

A set of other capability building initiatives aims at creating a better understanding of the societal needs. On the one hand, Intel encourages its employees to participate in the “Active Intel” program, a corporate volunteering (CV) initiative. Community involvement performance has even been integrated in the company’s individual performance evaluation process.

Moreover, Intel attempts to share the experience gained with its environmental program (EP) with other companies by involving key stakeholders in the development phase. Intel consulted with an array of institutions, such as the Ministry of Labor, the Occupational Safety and Health Council, the Electricity Costa Rican Institute, the National Bank of Costa Rica and community groups. Intel’s interactions with its suppliers have been very strong. All suppliers, for instance, have to adhere to Intel’s standards of security and health protection. The company provides training sessions and conduct health and security audits at their suppliers on a regular basis (Bialas, 2004).

In addition, Intel has founded the Belen Environmental Industrial Committee, a local business committee (BC), whose primary purpose is to organize the National Environmental, Health and Safety Conference. The annual conference, in its third year in 2003, was attended by community members and representatives from non-governmental organizations, companies and the government interested in learning best practice in the environmental management, health and safety.

"With the organization of this conference, Intel ratifies its commitment to our country and our workers. It is a model that is highly satisfactory and, we hope, stimulating for other companies."

Ovidio Pacheco Salazar, Minister of Labor, Costa Rica (Arias, 2004)
Discussion

So far, we have stressed the importance of looking at different levels of analysis in order to better understand the nature and dynamics of corporate capability development initiatives. In discussing the findings, we shall put a special emphasis on these linkages. We will analyze the impact of corporate capability development initiatives by first discussing the micro-level dynamics, i.e. corporate capability development behavior, followed by an elaboration on the macro-level dynamics, i.e. societal framework of capability development.

Micro-level Dynamics: Corporate Capability Development Behavior

In order to discuss the initiatives, we shall refer to the eight characteristics identified at the beginning (see Appendix for an overview). Whereas the characteristics Beneficiary, Collaboration, Motivation and Specificity shall guide our discussion of the corporate capability development behavior, the characteristics Initiation, Origin and Type shall help us elaborate on longitudinal patterns.

A comparison of the twelve corporate capability development initiatives along the four dimensions mentioned above reveals two main groups of initiatives (see Exhibit 4). Group 1 encompasses the five initiatives Research Cooperation (RC), Training Support (TS), Science Fair (SF), Innovation Center (IC) and Computer Clubhouses (CC). The remaining six initiatives, Community Program (CP), Technology Training (TT), Environmental Education (EE), Corporate Volunteering (CV), Environmental Program (EP) and Business Committee (BC) build Group 2. Whereas the initiatives belonging to Group 1 are primarily designed to develop firm-specific capabilities and thus are targeted towards present and future employees, the initiatives belonging to Group 2 aim to develop non-firm-specific capabilities for a wider range of beneficiaries. In addition, the

11 Environmental Certification (EC) does not really fit either group.
initiatives of Group 1 seem to be approached in a more coherent and sustainable way. This may indicate that corporate capability development behavior depends on how well an initiative is perceived being aligned with corporate interests. Better-aligned initiatives seem to be managed in a more coherent and sustainable manner. A combination of two alternative explanations may offer some clues. On the one hand, it can be argued that a company is better at running an initiative developing capabilities of which it has plenty of and is experienced in managing. On the other hand, the company might feel more motivated to develop capabilities that are relevant for its future performance. Interestingly, no real difference in terms of collaboration can be identified. Two thirds of all initiatives are run in collaboration with other parties.

Exhibit 4: Intel’s Corporate Capability Development Behavior

If we look at the different initiatives as they have developed over time, three main thematic waves can be identified. The technology wave kicked off with the two initial and still on-going programs to support the training of future employees at both technical
high schools and universities. The technology focus was strengthened with later initiatives, such as the “Science Fair”, “Teach to the Future” or the “Computer Clubhouses”, which all originated in the corporate headquarters. The **community wave** emerged early in the existence of Intel Costa Rica. The initial “Good Neighbors” program has been complemented with the creation of new community initiatives such as the corporate volunteering program “Intel Active”, or, more recently, the “Belen Industrial Council”. The third main thematic focus, the **environment wave**, has emerged more recently and is closely linked to Intel’s approach to environment, health and safety. Initiatives such as the environmental education or the business council have assured that insights gained in this area are shared with other parties.

The parallel existence of these waves shows that different capability development themes are understood to be complementary. As a result, the number of initiatives has increased. Although existing themes remain relevant, the emergence of new themes led to a shift of emphasis. Whereas the initiatives aimed only at developing economic capabilities at the beginning, some later programs put civic capability development at their center. In conclusion, the approach to corporate capability development has become more comprehensive.

**Exhibit 5:** Longitudinal View on Intel’s Corporate Capability Development Initiatives
Macro-Level Dynamics: Societal Fabric of Capability Development

What do these observations tell about the impact of Intel on the societal fabric of capability development? Three implications emerge. First, as seen above, Intel’s approach has changed over time from a solely economic oriented to a more comprehensive capability development approach, promoting both economic and civic capabilities. Thus Intel’s civic capability development orientation has been strengthened over time, while remaining strongly embedded in the economic orientated sphere (Effect 1 in Exhibit 6).

Secondly, the number of corporate capability development initiatives has increased over time. As two thirds of all initiatives involve some kind of collaboration, and the relative number of initiatives involving collaboration has not changed significantly over time, we can derive that the number of linkages has increased (Effect 2 in Exhibit 6). Interestingly, there is a common perception in some parts of the Costa Rican society that Intel behaves like an alien unwilling to integrate into the Costa Rican society.

“Intel is like an island. They sometimes get closer to society, but generally speaking, they remain holding an outsider perspective.”

Citizen of Costa Rica, 2004

This opinion is mainly held among people who have no direct dealings with Intel. There is evidence that this perception changes as soon as institutions or individuals get involved in a collaborative program (Carvajal, 2004; Arias, 2004; Lobo, 2004). Thus, we can assume that bounds have become stronger overall (Effect 3 in Exhibit 6). In conclusion, the societal fabric of capability development seems to have been strengthened by Intel’s contributions. What does this mean with regards to the impact of Intel’s initiatives?

12 Source known to the authors
Exhibit 6: Impact of Intel’s Corporate Capability Development Behavior on the Fabric of Societal Capability Development

**Impact of Intel’s Capability Development Initiatives on Costa Rica**

A fully-fledged impact analysis of the highly complex capability development mechanisms would be beyond the scope of this case study.¹³ We, however, can provide some anecdotal evidence. Such evidence is best to be observed at the beneficiary level. We thus will structure this analysis along the beneficiary dimension introduced earlier.

On a first level, Intel has provided extensive firm internal training to **current employees**, partly by exchanging workers from its different assembly and test plants. The low turnover rate, however, makes potential spillover effects from this kind of training rather limited (Rodríguez-Clare, 2001b).

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¹³ As this case study only looks at a specific angle, any impact analysis can only be partial. Particularly in the case of social corporate initiatives, the assessment may appear one-sided as underlying causes that might have motivated certain corporate behavior are usually not part of the assessment.
As seen above, the main focus of Intel’s initiatives have long been on technology and young people. This gives some indication about the importance attributed to future employees as a relevant target group. However, Intel has realized more recently that training young students is not enough to attract them to the company. Some graduates who participated in an Intel funded business program, for instance, have decided to pursue careers outside of Intel upon graduation (Carvajal, 2004). The initiatives so far have reached 7,500 elementary and high school teachers who received computer training (Escalante, 2004). Another 1,080 teachers who were trained to assist students in preparing their projects for the science fair (Escalante, 2004), which was attended by 400,000 students in 2003 (Escalante, 2004; Cardenas, 2004). In addition, more than 1,000 young people have gained access to computer facilities (Cardenas, 2004). There are also some indirect effects to be observed. Intel’s cooperation with the public universities has been attributed as a main reason for the growing interest of young Costa Ricans in electronic engineering. Three years after Intel came to Costa Rica, the number of graduates in electronic engineering, which represented less than 1% of all graduates in the early 1990s, increased by 100% at the University of Costa Rica and 200% at the Technological Institute of Costa Rica (Carvajal, 2004). This increase in interest allowed the universities to set even higher admission standards (Carvajal, 2004; Gross, 2004) which contributed to a quality improvement of both teaching and research.

Intel has also reached out to its suppliers and customers. More than 220 suppliers have been trained in topics such as management, innovation or health and safety since 1996 (Carvajal, 2004; Gross, 2004). This corresponds with the assessment of Larrain, Lopez-Calva and Rodriguez-Clare (2000) who found that 35% of service and 17% of input providers had received training by Intel.

At the community level, Intel has reached out to all high school students in the Canton of Belen through its environmental education program. With more than 600 employees participating in the “Active Intel” program in 2003 (Arias, 2004), Intel employees shared some of their expertise with people living in the neighborhood.

Finally, it can be argued that the initiatives also had an impact at a societal level. As stated earlier, this paper does not intend to assess Intel’s overall impact in the Costa
Rican society. Nevertheless, it is important to put the initiatives in a societal context along two lines: first in terms of the company’s size and, second, its impact beyond these 12 initiatives. Social contract theory suggests that corporate responsibilities need to be assessed in light of the relative importance of the social actor (quantitative role) and of its overall impact (qualitative role) (Bowie, 1983). Given Intel’s relative size and relevance for the Costa Rican economy, the impressive number of beneficiaries might be viewed in a different light. Intel’s intention to widen the range and number of its initiatives’ beneficiaries (Arias, 2004) might be an indicator that this deficiency has been recognized.

Putting these particular initiatives into the context of the overall impact of Intel in Costa Rica, we might have to reassess their real relevance. Existing research into Intel in Costa Rica has stressed the creation of 2,000 new well-paid jobs (Rodríguez-Clare, 2001b), a series of infrastructure investments (Spar, 1998), the emergence of new electronics and software firms, some of them directly funded by Intel (Rodríguez-Clare, 2001a) and a psychological effect (Rodríguez-Clare, 2001b): The sheer fact that Intel participates in these programs might have strengthened the collective vision of Costa Rica becoming a competitive high technology cluster able to attract new high tech companies and, by doing so, becoming less dependent on Intel. On the other hand, some expectations have not been met. Only a few of Intel’s suppliers opened small satellites in Costa Rica. This led UNCTAD (2002: 233) to conclude that “Costa Rica remains weak in embedding export-oriented FDI in the local economy. There is yet little evidence of linkages, clustering effects of the upgrading of domestic supplier capacities (...”)”.

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14 I.e. a small actor is not expected the same as a larger actor, and an actor whose business is considered socially or environmentally harmful (e.g. oil or tobacco industry) is expected to contribute more than an actor who is engaged in a business that is seen as beneficial to society (e.g. education or health care industry).


16 Most of Intel’s suppliers, such as RVS, NTK, Philips, Alphasem or ESEC, did not invest in Costa Rica on a large scale but only opened small satellites in the country (Rodriguez-Clare, 2001b).
aspects, such as the impact of these initiatives on national wealth and income distribution, still remain to be analyzed.

Despite the lack of a comprehensive assessment, it can be said that these particular initiatives have had a lasting impact on the Costa Rican society, mainly due to three reasons. First of all, it is in the nature of educational initiatives that their impact will be lasting. Even if the company left the country or reduced their involvement in these initiatives, beneficiaries, i.e. trainees, are still able to reap the benefits. Second, the broad scope of the initiatives, reaching students at different levels, community members and workers, may help motivate people to embrace on a journey of life-long learning, which fosters the sustainability of these initiatives even more. Finally, the close collaboration between the firm and the government and non-governmental organizations is an important prerequisite to make such activities self-running and sustainable. These insights may provide relevant lessons learned of how multinational firms can help strengthen the societal fabric of capability development.

**Recommendations**

The case of Intel in Costa Rica illustrates the interdependences between the societal fabric and multinational firms entering a country on different levels. On the one hand, human capital considerations are pivotal to foreign direct investment decisions. At the same time, multinational firms have the opportunity to contribute to a nation’s capability development efforts. Four recommendations for decision makers from host governments and multinational firms, along the four stages of the foreign direct investment process, have emerged from the case study: Strategic leverage building, comprehensive decision taking, adaptive initiative integration and sustainable initiative development (see Table 1).

**Strategic Leverage Building:** Capability development can be considered a valuable leverage factor for both multinational firms and host governments negotiating foreign direct investment. The *host government* increases its attractiveness for investments if its societal fabric of capability development is able to develop needed capability in a fast and
flexible manner. This requires a strong commitment to capability building over a long
time and the willingness to collective action. The latter is best achieved by establishing a
culture of trust between all relevant players in the societal fabric. The multinational firm,
on the other hand, is advised to portray itself as a strong capability developer that is able
and willing to become a pivotal player in the societal fabric. A clearly defined corporate
capability development strategy embedded in its approach to corporate citizenship can be
an important first step in this direction.

Comprehensive Decision Taking: The parties should not only try to leverage their own
capability development capacity but also be willing and able to understand the potential
contributions of the other side. Thus governments might choose to look not only for
short-term investment but also for long-term impact on the societal fabric of capability
development. Potential corporate contribution to the fabric should be an important
decision criterion. Governments can use this analysis to actuate new policies that may
facilitate corporate contributions to strengthen the fabric. The multinational firm, on the
other hand, can gain a lot by not focusing too much on the current national capability
performance but also on the potential the societal fabric holds and how it could help
enhance this potential by its deliberate corporate capability building behavior.

Adaptive Initiative Integration: Capability development initiatives can also play a
crucial role in better understanding and adapting to the societal environment. Host
governments can support this process by facilitating the integration of multinational firms
into the fabric at an early stage as a lot of time is needed for both parties to establish a
trust relationship. Companies need to be open to adapt their strategies as they discover
the needs and structures of the host country. They always need to be willing to enter new
grounds while remaining firmly focused on their goals.

Sustainable Initiative Development: The final goal of any capability development
activity must be its sustainability. In the long run, institutions will only be able to support
initiatives whose results are aligned with their own interests. Host governments, thus,
should always consider their main objective, to serve the public, and try to contribute to
the collective efforts what they possess and can do best. Multinational firms, on the other
hand, keeping in mind their interest, should aim at bringing in their comparative
strengths, i.e. technology and management capacities. The pivotal challenge is to establish trusted relationships in order to better understand and act on the other party’s interests and their complementary resources and capacities.
<table>
<thead>
<tr>
<th><strong>Recommendation for Host Government</strong></th>
<th><strong>Strategic Leverage Building</strong></th>
<th><strong>Comprehensive Decision Taking</strong></th>
<th><strong>Adaptive Initiative Integration</strong></th>
<th><strong>Sustainable Initiative Development</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Show strong commitment to capability building and collective action</td>
<td>Look for capital investment and impact</td>
<td>Integrate multinational firm fast and early into the societal fabric of capability development</td>
<td>Consider public interest and contribute complementary capacities</td>
<td></td>
</tr>
</tbody>
</table>

| **Recommendation for Multinational Firm** | **Develop corporate capability development strategy as cornerstone of corporate citizenship approach** | **Look for capability performance and potential** | **Adapt capability development strategies to local needs and structures** | **Consider private interests and contribute complementary capacities** |

| **Conceptual Reference** | **Societal Fabric of Capability Development and Corporate Capability Development Behavior** | **Thematic Waves of Corporate Capability Development Initiatives** | **Groups of Corporate Capability Development Initiatives** |

| **Empirical Reference: Host Country (Costa Rica)** | **Long tradition of capability development and collective action** | **Comprehensive strategy to attract Intel to become more competitive as a nation** | **Collaboration with Intel from the beginning** | **Public education system as framework for corporate initiatives** |

| **Empirical Reference: Multinational Firm (Intel)** | **Education as key focus of corporate citizenship strategy** | **Commitment to support the capability development process** | **Swift reaction to skepticism in local community by initiating community program** | **Focus on capability development initiatives closely related to core competence** |

**Table 1:** Recommendations for Decision Makers from Host Governments and Multinational Firms
## Appendix

### Corporate Capability Development Initiatives of Intel Costa Rica

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
<th>I</th>
<th>O</th>
<th>M</th>
<th>C</th>
<th>S</th>
<th>B</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Research Cooperation (RC)</td>
<td>Cooperation in terms of faculty training, internships and research collaboration with the two major universities to strengthen engineering skills, particularly in the fields of electrical/electronics engineering, computer science, and material science.</td>
<td>1997</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 Community Program (CP)</td>
<td>The 'Good Neighbors' program aims at improving the relations between the corporation and the community where it is located.</td>
<td>1998</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3 Environmental Certification (EC)</td>
<td>ISO 14001 certification</td>
<td>2002</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4 Technology Training (TT)</td>
<td>The 'Intel Teach to the Future' program aims at convincing teachers about the effectiveness of integrating technology in education.</td>
<td>2000</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5 Training Support (TS)</td>
<td>Intellectual and material assistance of technical high schools in order to improve the training in electronics and electro-mechanics.</td>
<td>2000</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 Science Fair (SF)</td>
<td>The 'International Intel Science and Engineering Fair' aims at creating interest among elementary and high school students for math, science and technology. It is organized in 20 regional and one annual national event.</td>
<td>2000</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7 Innovation Center (IC)</td>
<td>The 'Centro de Innovacion, Tecnologia y Aprendizaje' aims at providing technical and financial assistance to educational institutions focusing on training future technicians.</td>
<td>2001</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8 Computer Clubhouse (CC)</td>
<td>The 'Computer Clubhouses' provide access to information technology to under-privileged young people.</td>
<td>2001</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Initiative Code</td>
<td>Initiative Name</td>
<td>Description</td>
<td>Year</td>
<td>I</td>
<td>O</td>
<td>M</td>
<td>C</td>
<td>S</td>
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<tr>
<td>9</td>
<td>Environmental Education (EE)</td>
<td>The ‘Environmental Protection School Center’ program consists of sponsorship of recycling points in all local schools and workshops for nearby technical high schools.</td>
<td>2001</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Corporate Volunteering (CV)</td>
<td>The ‘Active Intel’ program aims at promoting the participation of Intel employees in volunteering programs in their communities.</td>
<td>2001</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Environmental Program (EP)</td>
<td>The ‘Corporate Environment, Health and Safety’ program consists of the publication of reports and booklets and the organization of an annual conference.</td>
<td>2002</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Business Committee (BC)</td>
<td>The ‘Belen Environmental Industrial Committee’ aims at training other local businesses in managing environmental, health and safety performance, effective meeting organization and communication skills.</td>
<td>2003</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Legend**

- **I** Initiative Initiation: 1997-2003
- **O** Initiative Origin: 1 Headquarters; 2 Subsidiary
- **M** Initiative Motivation: 1 Only reactive; 2 More reactive; 3 More proactive; 4 Only proactive
- **C** Initiative Collaboration: 1 Done by Intel; 2 Done by Intel in cooperation with partner; 3 Done by partner in cooperation with Intel; 4 Done by partner
- **S** Capability Specificity: 1 Firm; 2 Non-Firm
- **B** Initiative Beneficiary: 1 (Future) employees; 2 Business partners; 3 Community; 4 Society
- **T** Initiative Type: 1 Technical capability development; 2 Civic capability development
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