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THE CHANGING WORLD OF WORK SOCIO-ECONOMIC IMPLICATIONS THE CASE OF TELEWORKING

BY

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Conférence au Colloque de la Société de Physique et d'Histoire Naturelle

«La terre sous contrôle»

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A new technological era

A new technological wave is now underway which is likely to completely reshape the way people will work and live in the future. It is characterised by impressive phenomena of technological acceleration, spread, diversification and combination.

Product cycles in chip technology are now of only two years in leading-edge companies with chips continuously shrinking in size while doubling their power in each new chip generation. At the same time, semiconductor and computer prices have been dramatically collapsing in the last ten years with projections indicating further drastic reduction. ICTs are also changing in nature and logistics. They are progressively converging and integrating each other while computers, e-mail and Internet are massively entering the home place. Increasingly users' friendly software and hardware make ICTs accessible to larger and larger strata of the population. For the new generations familiarity with ICTs is becoming a normal feature of their education and way of working.

This new "accessibility" of ITCs refocuses the relative importance of the variables at stake. Knowledge is what now makes the difference in competitiveness and success together with continuous learning to keep this knowledge abreast. In this new setting people are core to technological development. The original, deterministic approach to technological innovation is totally reversed.

What is becoming increasingly clear is that there is nothing "pre-set" in this process of change but that there is room for manoeuvre, options and different choices available, which are of particular strategic importance in the design and planning phases. Development at work and in society is consequently not just the result of

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uncontrollable forces such as globalization, intensified competition and technical change. It is, instead, primarily the result of political, economic and social choices.

The original approach to technological innovation, largely built upon technological determinism, short-term returns and downsizing, is progressively giving way to a **HIGH ROAD** approach where human capital, discrete use of technological innovation and new forms of work organization become fully interlocked to transform information into knowledge and then into productivity growth, competitive advantage and better conditions of work and life.

Though the high road is often only a path, especially in developing countries, it is increasingly possible to develop win-win solutions meeting at the same time the needs of the industry, of the workers and of the community at large.

THE HIGH ROAD APPROACH

Room for manoeuvre

- *technological options/choice v. technological determinism*
- *diversity/intensity/speed/flexibility/integration of technological innovation v. the indiscriminate recourse to ICTs*
- *the most appropriate mix/interface of technologies and organizational factors v. the mismatch new technologies and old organization*

Alternatives

- *horizontal v. vertical*
flat organizations; horizontal networking; lean- but not mean- organizations
- *decentralised v. centralised*
devolution of responsibilities; autonomy; self-initiative
- *participative v. compartmental*
team working; people involvement; communication; information flow
- *agile v. rigid*
flexible working time arrangements; flexiplace; mobile work; teleworking; flexijobs; flexi-employment; atypical work; responsiveness
- *innovative v. routine*
process innovation; product innovation; product complexity/sophistication; creativity; R+D; TQM; just in time; customer-oriented
- *human centred v. technology driven*
multi-skilling; learning; knowledge-based; continuous training
- *changing v. stable*
virtual enterprise; virtual products and orders; seamless enterprise
- *open v. closed*
inter-enterprise network; intra-enterprise networks; core and peripheral workforce; the board-less organization
- *intangible v. tangible*
employers talents, customers' support, suppliers' reliability, problem solving capacity, continuous improvement, timely and tailored production
- *long term v. short term*

Performance, quality of work, jobs

- *The integrated development of technology, organization, performance, jobs and quality of work versus the mechanics/paradoxes of technology transformed/not transformed into performance and of performance transformed/not transformed into jobs*

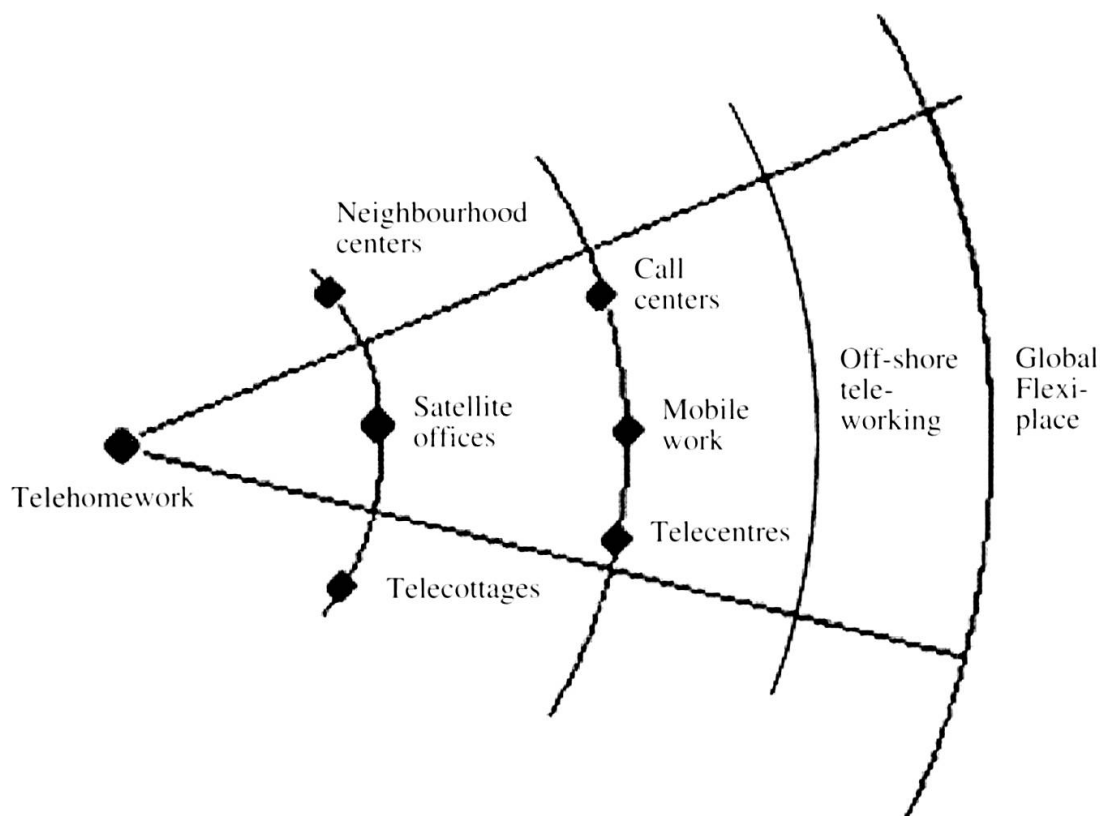
Teleworking plays a key role in this process of change.

◦ *the changing nature of teleworking*

Originally conceived in the form of home telework, teleworking is progressively expanding into a great variety of flexible working arrangements. People already work and will more and more, work in their home, in satellite centres, in telecottages or in neighbourhood centres. They will also increasingly work on planes or trains, in their hotel rooms, in their clients' offices, in any branch or office of their company, in special teleworking facilities made available for rent. They will work "everywhere" electronic networking is possible.

In this dimension, the very concept of a "privileged" place for work disappears and any place has the potential to become central when the development of working activities so requires.

The dynamics of teleworking



It is consequently time to abandon the traditional, static vision of teleworking encapsulated in a given number of pre-set typologies. Telework is instead a phenomenon "in motion" towards the new dimension of flexi-place.

It appears therefore essential to look at the dynamics of teleworking rather than concentrating uniquely on its different typologies. The above figure looks at different forms of telework in a developmental way and can be used as a basis for assessing its evolution in typology and significance.

° *reaching the critical mass*

Despite enthusiastic predictions, telework has not for a long time taken off as a large-scale phenomenon. This apparent failure has favoured scepticism and the argument that telework will perhaps remain forever a marginal or minor aspect of our working life. In reality, telework has been going through a preliminary phase during which the necessary preconditions for its full development were being set up and seems now on the point of reaching its critical mass. Nowadays the number of teleworkers could amount at 30 million worldwide. In the United Kingdom, workers in call centres alone are more than those in the car, steel and coal industries put together. Experts argue that rather than just a new form of work, teleworking is likely to be the way an increasing majority of people will work in the future.

The mapping which emerges shows not only the importance of teleworking in the various countries but also indicates that an important process of transformation is underway leading to new balances in the relative significance of different forms of teleworking. It also shows how a number of features which have been for long considered "typical" of teleworking are now changing and how several "granted" assumptions on teleworking are being increasingly challenged by the new realities.

The following points seems key to the understanding of the new geography of teleworking

REACHING THE CRITICAL MASS KEY- ISSUES

1. *Telework has been in continuous expansion since its appearance. This expansion has accelerated in recent years and is likely to further accelerate in the years to come*
2. *The development of telework primarily concentrates in industrialised countries though there are substantial signs of its emergence in developing / newly developing countries and in countries in transition*
3. *Telework is developing at a different pace in different countries depending on their different economic, social and technological situation*
4. *In a number of industrialised countries telework has reached or is reaching its critical mass at around 5% of the total workforce*
5. *In a number of countries telework has overtaken or is overtaking work in traditional sectors*

6. *Telework ranges across the entire spectrum of numbers of hours worked making increasingly important part-time teleworking*
7. *Telework is currently almost entirely on a voluntary basis though in future it may increasingly become an unavoidable feature for a growing number of jobs*
8. *Off-line telework is progressively transformed into on-line telework*
9. *Still prevalent in the private sector, telework is expanding in a substantial way in the public sector*
10. *Originally characterised by a large number of women and few men, telework is progressively breaking even between men and women*
11. *Traditional telework occupations are giving way to telework becoming cross-occupational*
12. *Homework is changing in nature due to the fast development of new ICTs and is progressively transformed into telework in many areas*
13. *Mobile work and call centers are spreading fast. In fact these appear to be the fastest developing form of telework*
14. *Blurred figures of telework are emerging as, for instance, mix of homework and mobile work*
15. *New types of telework or telework-related new forms of work are emerging as, for instance, hot-desking*

Nowadays between 6% and 10% of the total workforce in the US is teleworking, without considering those teleworking from home in their secondary job and those involved in other forms of teleworking (workers in call centres alone amount at more than 4 million).

Teleworking is high on the agenda of the European Union. Political statements, programmes of encouragement, awareness campaigns, financial aid to innovative projects have proliferated in recent years. The European Commission has targeted 10 millions teleworkers in Europe by the year 2000. These expectations are materialising now. The most recent estimates from the European Commission show that up to 9 million of the total working population in the EU is teleworking.

The pace of development of certain forms of teleworking is amazing. The number of people employed in call centres in Europe is expanding at a rate of 40 per cent a year, according to strategic management consultancy Datamonitor. One in 250 of the European working population now works full-or part time in a call centre. This figure is set to increase to one to 100 by the year 2001.

Countries with large unpopulated areas such as the Scandinavian counties, Australia and Canada have a "natural" special interest in telework. This interest is now increasing as telework seems to reach the critical mass. In Australia potential teleworkers — who undertake some form of work related activities via their home computer — are now 1,580.000, almost 20% of the total employed population. In Canada, in november 1995, 16% of all workers regularly performed at least part of their usual work hours at

home. One half of these workers were paid by an employer; the other half were self-employed. More than one million employees worked at least part of the time at home. If the number of people working at home continues its recent growth rate, the home will be the principal place of work for over 1.5 million Canadians by 2001.

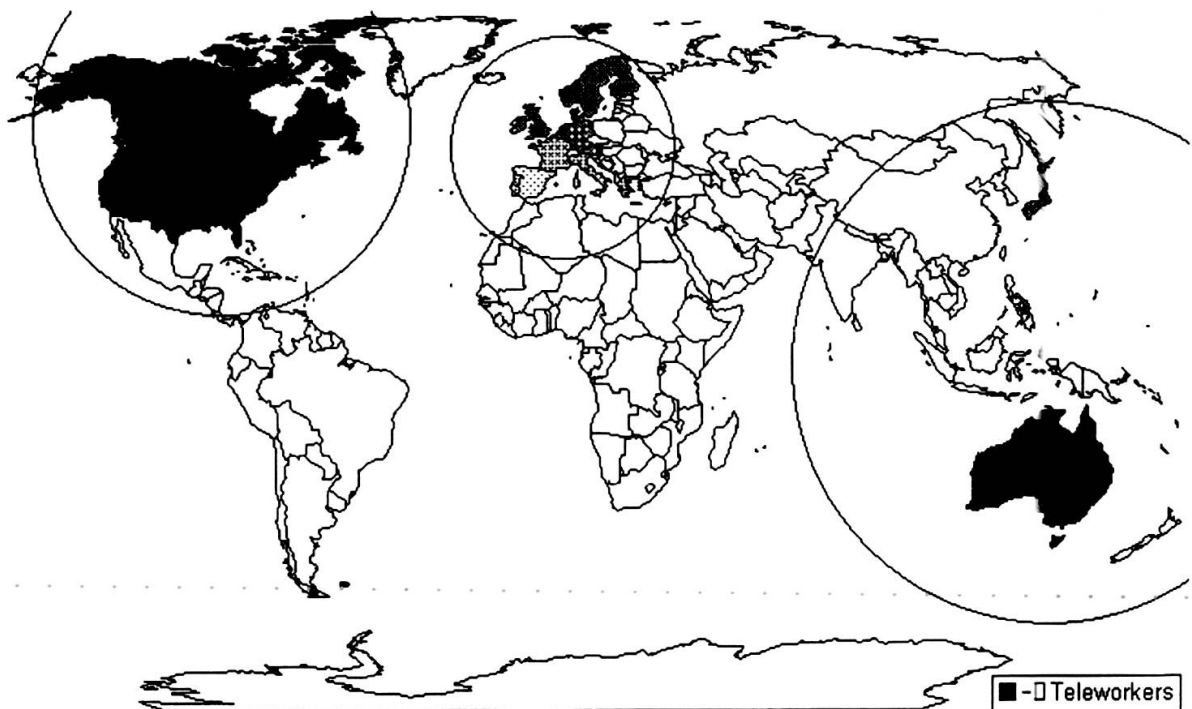
In Japan, the number of regular teleworkers is expected to rise to three million by 2000, 7 million by 2005 and more than 10 million by 2010.

Based on these data, three critical clusters can be identified where teleworking has reached or is reaching the critical mass. As shown in the figure below, a first cluster is in the North American Region, a second in Europe, particularly Northern Europe, and a third one on the Asian side of the Pacific Rim Area.

These are the clusters where teleworking is progressively consolidating as an established form of work and from which teleworking is likely to spread world wide to possibly become the way most people will work in the third millennium.

° *a mixed blessing*

Teleworking may increase isolation, marginalization and social dispersion; unprotected jobs; gender disparity; and fragmentation among the workforce. However, teleworking offers unique opportunities for employment, development and special care of vulnerable groups.



Teleworking can greatly contribute to the development of a new type of entrepreneurship based on creativity, the ability to network, openness to virtual environments and intangible assets, high levels of agility, immediate responsiveness and the continuous accumulation of new knowledge. This type of entrepreneurship is considered the winning one for modern enterprises and a great facilitator in new jobs creation.

The large majority of ICTs' related occupations are expected to grow rapidly as an effect of further technological advancements. In the United States, several of the 30 fastest-growing occupations are found in the very rapidly expanding computer and data processing services industry, which is expected to more than double its employment size to 2.5 million workers by 2006. These are typically teleworking occupations.

Meeting this challenge requires immediate action in the area of education, training and retraining. It also requires tapping into all available resources and retaining available ones. Teleworking can play a key role in this respect. By bringing the work to their workers, rather than the reverse, teleworking organizations gain access to workers anywhere in the world.

Teleworking can also foster the development of new work in remote areas. It can help in attracting and developing work in rural areas. Telecottages and telecentres are the emerging answer. Particularly suitable for small communities in isolated areas, telecottages and telecentres have been spreading fast in recent times.

There is a history of attempts to develop telecottages and telecentres in developing countries based on the idea of the direct passage from agriculture to "high tech" that is of great fascination, but this has proved to be very difficult to apply in the past.

Technological advances now make it increasingly feasible to place a "communication point" in isolated villages, which can be run with cheap solar energy and linked by satellite connection and Internet to the entire world. This would be a place where young people could familiarize themselves with the new information and communication technology; where tele-education and teletraining could take place; where crucial weather forecast for survival and growth could be provided; where telemedicine could be administered; where farmers could gain access to much needed advice and services.

In December 1997, 16 telecentres were collectively inaugurated at a ceremony in the grade school library at Erongaricuaró, State of Michoacán, Mexico. Many have failed or still struggle to survive. However, successful stories start emerging. In the bustling town of Los Reyes, one of the axes of the booming avocado export market, people will tell you how the telecentre has established its credibility by linking the local avocado producers with potential markets worldwide via Internet. In Senegal, more than 10.000 telecentres have become operative in recent years.

For people with disabilities, teleworking offers an entire new range of work opportunities. A new powerful disability strategy is emerging which abandons the traditional idea of rehabilitation as adaptation of the disabled to the traditional workplace and looks, instead, at a new "open" workplace where people, both disabled and not, find a real chance to fully express their working abilities and overcome discrimination. The ILO is actively engaged in knowledge-sharing and global networking in this area. It is

responsible for overall management of InfoBase, the major database worldwide within the Global Applied Disability Research and Information Network GLADNET.

Increasingly, distance learning appears as a privileged tool in enhancing the accessibility to higher level, longer duration and more responsive training activities to meet the growing needs for more shared knowledge.

The International Training Centre of the ILO in Turin has a long tradition of international and tripartite education. It is now enriching its traditional role with leading functions in the area of distance learning and training.

Latin America is the first target area. Current distance learning programmes at the Turin Centre include an advanced course on *Design, management and evaluation of flexible learning systems* addressed to Latin American professional trainers; and a virtual training programme *DelNet* designed to promote local development and to support people and institutions working in this area. In the year 2000 a new major telelearning programme on *Compared Industrial Relations*, initially targeted at labour relations professionals and specialists from Latin American countries, will be launched.

° *the issues at stake*

An enormous amount of issues are relevant to teleworking. Often presented in a confused way, they constitute a major challenge to policy making. An effort of organisation of such issues is needed and the following table intends to contribute to such clarification.

The table highlights how:

- advantages and disadvantages operate differently at different levels and for different actors - companies, workers and the community at large
- each positive impact is practically mirrored by a negative one and viceversa
- the best solution is not predetermined but is largely open to the interaction of the parties concerned
- it is up so such parties to find the “mix” which can accommodate their different interests in a positive-sum game

° *global teleworking*

Teleworking is becoming global. Not so fast as expected nor in a dramatic way as forecasted by earlier speculations but in a more steady and progressive way. Increasingly developing and newly developing countries and countries in transition, previously untouched, “open” themselves to this new form of work. Low cost technology, new skills and new attitudes make this possible. Unexpensive facilities and labour make this particularly attractive. The rapid development of new forms of teleworking, such as mobile work and call centres, that do not require big infrastructures and can provide almost immediate returns in terms of jobs and profits, further magnify this trend.

Major shifts and new features accompany this development.

THE ISSUES AT STAKE

Advantages for society

- Achieving better regional balance
- Facilitating decentralization of activities
- Increasing job opportunities (especially for certain groups of workers)
- Reducing commuting
 - reducing pollution
 - reducing road casualties
 - reducing travelling time
 - reducing adverse effects on health
 - reducing energy consumption
 - reducing wear-and-tear of infrastructures and automobiles

Disadvantages for society

- Increasing social dispersion
- Increasing gender disparities
- Reducing service-related jobs
- Increasing unprotected jobs
- Increasing costs in technological infrastructures

Advantages for companies

- Increased organizational flexibility
- Retention of skilled workforce, access to new workforce
- Increased productivity
- Cost savings (facility costs, supervision costs, transport costs, etc.)

Disadvantages for companies

- Inadequacy of traditional management
- Crisis of middle management prerogatives
- Difficulties in control and supervision
- Decreasing company identification and loyalty to the company
- High training and retraining costs

Advantages for workers

- More independence
- More autonomy in terms of organization and working time arrangements
- Less commuting with reduced costs and stress
- Better balance between working time and leisure time
- More time for private activities, home and family
- Increased job opportunities
- Increased qualification
- Better working environment
- Reduced work stress

Disadvantages for workers

- Isolation
- Marginalization within the company/less chances for personal development
- Limitations in social life
- Overlapping of working time and free time
- Reduction of leisure time
- Less job security, less contractual force, more precarious work
- Risk of deskilling
- Less suitable working environment
- Increased work stress

GLOBAL TELEWORKING KEY - ISSUES

1. *The big lap from agriculture to the electronic cottage has yet not materialised*
2. *However, in developing, newly developing countries and countries in transition teleworking is now decisively taking off.*
3. *Factors limiting the development seems to be found in organisational and attitudinal factors rather than just in technological and cost factors*
4. *Teleworking is often not evenly spread but develops in a kind of leopard skin pattern*

5. *Teleworking is sometime an hidden issue. In several cases the presence of teleworking is not properly detected and acknowledged*
6. *In contrast, in a number of countries teleworking increasingly becomes the object of deliberate policies of encouragement ad support*
7. *The traditional dichotomy "provider/industrialized—receiver/developing" is giving way to a more articulated vision whereby most countries can be at the same time providers and receivers of teleworking*
8. *New forms of teleworking, in particular mobile and call centres, are on sharp increase and leading the development of telework in developing, newly developing countries and in countries in transition*
9. *The enormous potential of offshore teleworking is progressively becoming a reality*

THE FIRST WAVE - FAR AND CHEAP

Data entry was one of the first service activities to be internationally outsourced. This type of activity requires only a low level of computer literacy and limited interaction between the customer and the supplier. In time the most elementary aspects of this type of teleworking have been taken over by technology advances.

A reality in several Caribbean and Far East countries (Philippines, India, Sri Lanka, Indonesia) since the 80s, offshore teleworking is gaining in terms of complexity and quality of the services offered. These increasingly include, especially in those countries where offshore teleworking originated, software programming, re-engineering, and product development.

THE SECOND WAVE - SHIFTING PATTERNS

This is characterized by the emerging of call centres. Call centres provide fast, immediate and personal contacts with clients all around the clock and all around the world. Skilled call centre staff can, within a few minutes, develop rapport with customers and make them feel exceptionably valued. Skill required by operators can be very broad. Multilingual operatives may need in-depth training to handle complicated enquiries and orders from several countries. At the other end of the spectrum, inbound or outbound calls may be as routine and predictable as an assembly line.

The emergence of call centres has completely changed the traditional picture of offshore teleworking. Countries who were providers of teleworking become also receivers and viceversa. In particular a number of industrialised countries enter the arena (Canada, Australia, Ireland, Scotland) and increasingly propose the services of their workforce often from isolated communities heavily beaten by unemployment.

THE THIRD WAVE: THE BIG LAP

It is the likely development of the future. Very large countries - sub-continent in reality - could make teleworking a key element of their development. A balanced development closing the economic and social distances between different regions of their

enormous territory and linking with the entire world in their effort. Although a speculative guessing only at the moment, the case could be made for South Africa, Brasil, India, China and the Pan- Pacific Area.

While offshore teleworking is progressively becoming a reality in a growing number of countries, the factors which impinge on its development are multiple, complex and often of uncertain sign. These factors include the capacity of managing technological innovation; providing the skill resources needed for transformation; creating a supporting environment to change; elaborating policies which accompany and facilitate the introduction of new forms of work; and maintaining competitive advantages both in terms of costs and of the reliability of the service that is offered. Meeting these objectives is the challenge at stake and is a major challenge.

Technological development in developing countries meets severe limitations and the gap between developing and industrialised countries is still enormous. While an estimated 3.1 % of the population in high-income countries use the Internet, only 0.0002% of the population in low-income countries do so, a multiple factor of approximately 15,000. The number of PCs per inhabitant is approximately 130 times higher in developed countries than in least developed ones.

However, the emergence of the global information infrastructure presents and extraordinary opportunity for developing countries. With radio and satellite options for the local loop, widespread deployment of telecommunications becomes affordable and developing countries have the unique opportunity to leapfrog at least part of their gap with the industrial world.

Telecommunication market liberalization, de-regulation and de-taxation are other important features in the development of offshore teleworking. In February 1997 a liberalisation agreement signed by seventy countries, including 42 from the developing world, was concluded in Geneva at the World Trade Organisation - WTO.

In one form or another, numerous countries in the world offers some sort of haven from taxation and regulation for residents from other countries. However, while in some countries tax legislation is only one aspect of a complex and thriving economy, others are primarily, if not exclusively, known for their tax haven facilities. Countries where offshore teleworking has developed up to now tend to belong to this second category.

The way liberalisation is introduced is of paramount importance for the impact it will have on social and working life. Indiscriminate liberalisation may help in boosting the short-term development of offshore teleservices and teleworking but at the price of a very unbalanced type of development that may eventually negatively affect the global advancement of developing countries. What is increasingly called for is a type of development that includes higher quality competitive factors and advantages capable of promoting, in developing counties, a sustained and balanced development of teleworking. Crucial in this respect are the enhancement of skilling and the organisational setting in which offshore teleworking develops.

This is a key challenge to organisations in developing countries. It is not only a matter of "adding" technological skills in societies often still beaten by illiteracy, but to

provide a variety of new, enriched skills capable of meeting the challenge of the growing number of more sophisticated forms of offshore teleworking.

But the fact that people are educated and have greater access to information and communication is not sufficient by itself to generate growth. Organizational structures and systems must be in place, that account for factors such as flexibility, freedom, stability and trust, and reward people for their motivation, commitment, participation and learning. In short, social organization is the catalyst to transform information into knowledge and then competitive advantage.

It is the entire social organization that becomes productive or, on the contrary, an obstacle to innovation, and thus for productivity growth. Personal freedom (and therefore liberty in its fullest sense) is a pre-requisite for entrepreneurialism. Social solidarity is critical for stability and thus for predictability in investment. Family safety is essential for the willingness to take risks. Trust in one's fellow citizens, and in the institutions of governance, is the foundation for socializing ingenuity in a given space and time, thus making it possible for others to enjoy the fruits of such ingenuity (Castells, 1998 UNRISD).

Finally the respect of local culture is a closely linked aspect. Language plays an essential role in this respect at a moment when the electronic world is increasingly becoming the domain of one hegemonic language. Bill Gate's new universal dictionary, the Encarta World English Dictionary, has been seen by some commentators as a further step in this direction and had ignited a major discussion on the survival of linguistic diversities.

Combining all these factors in a positive-sum game is crucial to the success of offshore teleworking as a factor of sustained development in developing countries. Deliberate policies in support of this type of development are increasingly invoked. At the same time ICTs-related issues are moving to the top of the international policy agenda.

In 1997, a resolution from the United Nations Commission on Science and Technology for Development recommended that each developing country and country in transition establish a national ICT strategy taking into account the guidelines proposed by the UNCSTD Working Group on Information Technology and Development. It also invited relevant bodies of the UN system to assess their capability to provide assistance and promote cooperation in the ICT area.

Within these major shifts positive signals start emerging showing that a **HIGH ROAD** to teleworking is possible. Trucking and magnifying these signals is the challenge at stake.