the enterprise peculiar analog of "free energy" is volume of received profit.

Thus in accordance with forming the bases of informative society, unprecedented in the dynamism, трансформационные processes at the enterprise, which one early were only episode in their life, should become the basis of its activity. Just they ensure to firm safe function in a modern world and are the lien of stable development on the basis of constant increase of efficiency.

FORMULATING ICT STRATEGIES

I.B. Dehtyarova, PhD student

National and regional ICT strategies and policies in developing countries and regions will determine whether the growing availability of ICTs and their applications brings social and economic improvement or leads to new forms of exclusion. An effective strategy must include the accumulation of capabilities to assess the strengths and weaknesses of various hardware and software alternatives and to select specific applications in line with development priorities.

As developing countries join the global information infrastructure, they will need to establish effective ways to maximize the benefits and control the risks of ICTs. This means coordinated action, encompassing the technologies and services, as well as many aspects of the institutional environment. Strategies are needed to establish the necessary S&T, engineering knowledge, and management techniques and to build the social and economic institutions needed to reap the potential social and economic benefit of ICTs.

Priority should be given to policies, regulations, education, training, and technology-assessment programs to enhance the capacities to creatively produce or use ICTs. The balance between producing and using the new applications will differ from country to country. New coalitions of resources and partnerships among stakeholders, including the business sector, will need to be encouraged, in line with each country's development priorities.

No simple recipes can be given for developing such strategies. No hard and fast rules govern the design of such strategies, and each developing country will follow a distinct path. ICT strategies need to establish priorities across business sectors and the responsibilities of government departments and ministries. Coordination will be needed, together with clear implementation plans and targets. Strategies will need to be flexible and open to the requirements of a wide variety of stakeholders. ICT strategies for building up the national information infrastructure, including its technological and social components, must be more than statements of what might be done. They must be action plans with appropriate funding.

The UNCSTD Working Group on Information Technology and Development found evidence that the positive impacts of ICTs on developing countries are not as deep or as pervasive as they are sometimes made to appear in the debate about the benefits of a global information society. The lives of many people, especially in the least-developed countries, are barely touched by ICTs. Others have been negatively affected by their exclusion from the global information society or by the social or economic dislocations stemming from these new technologies, services, manufacturing practices, and ways of organizing work. The problem is not simply a lag in the diffusion of these technologies or in accessing ICTs. There are substantial problems in ensuring that the capabilities for creatively using these technologies are embedded in new policy measures and firm strategies.

Given the potential of ICTs, all governments and other stakeholders need to build new capabilities to produce, access, and use these technologies. To build these capabilities, ICT strategies must be responsive to sustainable-development goals and involve all social and economic stakeholders. The government has a very important role to play: supporting new forms of market facilitation, introducing effective regulation, promoting stakeholder dialogues, and providing public services appropriate to local conditions.

Technology choices and capacity-building

The national information infrastructure in developing countries will depend to some extent on the strength of their firms' R&D

capabilities and their propensity to invest in the R&D that will enable them to help construct and use this infrastructure. Other equally important elements will be the R&D capabilities of public-sector institutions, the links between these institutions and the private sector, and the relationships between domestic organizations and those located in distant places around the world. The production, maintenance, and use of ICT systems almost always leads to new forms of organization. These organizational changes need to be identified and implemented by informed managers. People are needed who can act as intermediaries between system suppliers and users to coordinate, integrate, and disseminate relevant information about new technical developments and applications. If S&T research results and practical experience with the production and use of ICTs are shared, replication of problems can be avoided and risks can be minimized.Competition in domestic and international markets is forcing firms in industrialized countries to reduce costs and improve quality. Firms in developing countries are also affected. This requires increased investment in R&D activities.

Some developing countries are already giving a high priority to R&D activities in the ICT sector and to building up a broad range of related capabilities. Bermuda, Brazil, Indonesia, Jamaica, Malaysia, Malta, Mexico, Singapore, South Africa, South Korea, and Vietnam are among the countries that have put considerable effort into developing ICT strategies. Many regional initiatives are in place to strengthen stakeholder roles for the African Information Society and the Association of Southeast Asian Nations. In these initiatives, ICT strategies are informed by medium- to long-term visions. Indigenous capabilities are needed to complement these visions. In the hardware and software components, a skills base must be either built up internally or attracted from other countries. Failure to define national strengths and weaknesses in ICT production, maintenance, and development can make a country's growth overly import dependent. It can lead to lost opportunities for economic growth, export earnings, and jobs.

Strategies for market liberalization

Profiles of market reform show a common movement to greater reliance on market instruments to encourage the ICT sector. However, because developing countries are at very different stages in acquiring ICTs and have their own development priorities, they articulate their market reforms differently. The models of privatization and competitive entry in the telecommunication sector, for example, differ considerably between countries. Monopoly supply in domestic markets is retained in some countries, whereas in others, this is abandoned in favour of competitive entry by domestic or international companies.

The WTO agreement on basic telecommunication services commits many developing countries to opening their national telecommunication markets to foreign suppliers and to introducing competition in the provision of all services. The inward-investment implications of privatization and market liberalization are considerable for the least-developed countries, which in many cases have not joined the agreement. They must attract both new competencies and investors while attempting to extend the reach of their networks. The major global investors are likely to concentrate on their home markets and on opportunities in countries covered by the agreement. The danger for the least-developed countries is that less experienced foreign companies will seek to invest there. Decision-makers in these countries will need to accumulate skills in negotiating terms and conditions attractive to these investors and responsive to their own domestic needs.

Even after an initial flurry of privatization and market liberalization, problems remain in responding to escalating demand and ensuring that competition is effective. Service-supply incentives must be created to respond effectively to all stakeholder needs, and innovative regulatory policies will always be needed. Pacific Rim countries are investing in a telecommunication-infrastructure framework to link such investment to strategies for education and training, and they are strengthening their business sectors to participate in global markets.With market liberalization and competitive entry, the prices for the use of international

communication services are expected to fall dramatically, although near-zero prices may be unrealistic. This decline in prices will happen as competitive entry into national markets and oligopolistic competition in the international market take hold.

These developments may also produce major reductions in the revenues available for reinvestment in the national infrastructures of some developing countries. Social-policy and equity issues related to the extension and upgrading of the infrastructure will become pressing for policymakers trying to promote access to new information services.

GLOBAL WARMING

O.A.Polozhij, PhD student

What is the greenhouse effect, and is it affecting our climate?

The greenhouse effect is unquestionably real, and is essential for life on Earth. It is the result of heat absorption by certain gases in the atmosphere (called greenhouse gases because they trap heat) and re-radiation downward of a part of that heat. Water vapor is the most important greenhouse gas. followed by carbon dioxide and other trace gases.

Human activity has been increasing the concentration of greenhouse gases in the atmosphere (mostly carbon dioxide from combustion of coal, oil, and gas; plus a few other trace gases).

Global surface temperatures have increased about 0.6°C (plus or minus 0.2°C) since the late-19th century, and about one half degree F (0.2 to 0.3°C) over the past 25 years (the period with the most credible data). The warming has not been globally uniform. Some areas (including parts of the southeastern U.S.) have cooled.

El Ninos are not caused by global warming. Clear evidence exists from a variety of sources (including archaeological studies) that El Ninos have been present for hundreds, and some indicators suggest maybe millions, of years.

There has probably been only a small (1%) increase in global precipitation over land during the 20th century. Precipitation has