

**Single-year Expert Meeting on the contribution of  
foreign direct investment to the transfer and diffusion  
of technology and know-how for sustainable  
development in developing countries, especially least  
developed countries**

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**Promoting technology transfer via FDI for Sustainable  
Development**

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD.

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It is my pleasure to introduce the substantive item of the agenda for this Expert Meeting.

Allow me first to say a few words about the importance of the issue at hand. Technological progress is critical to economic growth and welfare for any country, regardless of its level of development. Some developing countries have made significant technological progress during the past two decades. But, as noted by Dr. Supachai, the technology gap between rich and poor countries remains wide. Reducing this gap has become a necessary condition to put developing countries and particularly least developed countries (LDCs) on the path of sustainable development and poverty reduction. Being major creators of new and advanced technologies, transnational corporations (TNCs) have the potential to play an important role in this regard.

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The objective of the Expert Meeting, as mandated by the Trade and Development Board, is to assess the contribution of foreign direct investment (FDI) to the transfer and diffusion of technology for sustainable development in developing countries, especially LDCs. It is also expected to discuss policy options and best practices to enhance the technological contributions of TNCs. In light of this, the Investment and Enterprise Division of UNCTAD prepared an issues note on "Foreign direct investment, the transfer and diffusion of technology, and sustainable development" (TD/B/C.II/EM.2/2). More analysis on this issue can be found in various issues of the World Investment Report, and cases studies such as the Transfer of Technology series.

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Let us look at the structure of the Meeting. In today's morning session we will discuss the potential roles of TNCs in narrowing the technological gap and examine the channels through which technologies are transferred. In the afternoon session, we will look at the means of technology diffusion, namely linkages and spillovers, and briefly address the implications of the internationalization of research and development (R&D) by TNCs for developing countries. Tomorrow morning, experts will present detailed examples of technology transfer and dissemination at the firm, industry and country levels. In tomorrow's afternoon session, we will discuss how to overcome weaknesses in developing countries' national innovation

system (NIS) that hamper knowledge acquisition and dissemination. The concluding session on Friday will provide forward-looking, action-oriented policy recommendations on how to promote technology transfer and diffusion.

Mr. Chairman, Experts,

Now let me share with you the key findings of the issues note regarding the interrelationship between TNC activities and technological progress in developing countries.

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First, TNCs are major players in global technology generation. They account for about half of the world's total R&D expenditure and more than two-thirds of the world's business R&D. Actually, the R&D spending of some large TNCs is higher than that of many developing countries. Twenty TNCs, with Toyota, Roche, Microsoft, Volkswagen and Pfizer being the top five, spent more than \$5 billion on R&D in 2009. In comparison, among developing economies the total R&D spending exceeded \$5 billion only in Brazil, China, the Republic of Korea and Taiwan Province of China.

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A notable phenomenon is the rise of Southern companies in the list of top R&D spenders. There were five companies from developing countries listed on the largest 100 R&D spenders: three Korean TNCs and two Chinese ones – Samsung Electronics, LG, Hyundai Motor, Huawei Technologies and PetroChina. Some developing country TNCs spend more in R&D than average developed country TNCs.

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Second, TNCs have played a key role in transferring and diffusing technology to developing countries. In fact, the overwhelming majority of cross-bord technology flows is carried out by TNCs. They can transfer and diffuse technology of many kinds, including a wide range of hard and soft elements. These include technologies embodied in capital goods; and production, organizational, managerial and other skills.

TNCs transfer and diffuse technologies through various channels.

- The bulk of technology transfer is taking place through internalized channels within the networks of TNCs, namely via FDI projects. This can be illustrated, for example, by the amount

of royalties and licensee fee receipts by TNCs from their foreign affiliates in host developing countries.

- Externalized channels by non-equity activities, such as franchising, licensing and subcontracting, are also important for technology transfer. Indeed, a number of developing economies that succeeded most in building up domestic technological capabilities did so by relying mainly on the externalized channels.
- Foreign affiliates diffuse technology and skills to local firms through i.e spillover and business linkages. The interaction between TNCs and domestic firms in developing countries results in knowledge dissemination through demonstration, competition, linkages and human resources mobility.

A wide range of economic, strategic and policy factors determines the base of technology transfer and diffusion: the nature and speed of technological changes, corporate perceptions of benefits, risks and government policies all play a role.

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Transfer of technology to LDCs remains a challenge. Today, FDI has become a major source of new technology to the developing world. However, the acquisition of technology from TNCs is still largely confined to a few higher income developing countries judging by data on payments of royalties and license fees. There is little evidence of a significant contribution by FDI to technological capability accumulation in LDCs.

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Third, the internationalization of R&D by TNCs opens up new opportunities for developing countries to enhance their own innovative capabilities. R&D is perhaps among the least internationalized segments of the value chain. However, TNCs have been increasingly shifting R&D activities to the developing world. FDI in R&D can interact with the National Innovation System of host countries in various ways and bring a range of benefits, such as promoting human resource development, creating knowledge spillover and upgrading industrial competitiveness. When supported and complemented by proactive policies, particularly enterprise development policy, such benefits may have significant potential for technological learning in developing countries.

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Again the phenomenon is concentrated in a number of developing economies in Asia. Most LDCs are not participating in global research and development networks, and consequently do not reap the benefits. These countries still lack the right kinds of scientific and engineering skills and a sufficiently large pool of low-cost research manpower, which are crucial for attracting innovative R&D. They also lack a big production base, to which adaptive R&D is closely related. For LDCs, strengthening the basic institutional framework for human resource development is the crucial first step.

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Finally, how to promote technology transfer and diffusion from TNCs to developing countries? Policy matters. Making the best use of TNC-mediated technology transfer and dissemination requires policy support in both host and home countries, at both national and international levels. To leverage FDI as a means to achieve technology transfer and diffusion, developing countries need to establish an effective enabling environment which provides an interface for technology-related TNC activity, supports the development of the absorptive capacities of domestic enterprises and their linkages with TNCs, and provides a regulatory framework, including a balanced approach to intellectual property that enables the development of a knowledge base and technological capacities. The coherence and synergies between FDI policy and other relevant policies (especially entrepreneurship policy, SME policy, industrial policy, science and technology policy, as well as human resources development policy) is also important. Home country policies and international support can also play a role.

In conclusion, the transfer and diffusion of technology is crucial to building the domestic productive and technological capabilities of developing countries and LDCs. TNCs have been and will continue to be drivers in cross-border technology flows to developing countries. The role of governments in supporting this process, as emphasized by Dr. Supachai, is fundamental. I am confident that the discussion over the next two and a half days will help us gain insight in this regard.

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Thank you very much.

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