



**International Federation of Consulting Engineers**  
The Global Voice of Consulting Engineers

# Transfer of technology

FIDIC Briefing Note

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## Background

The international engineering federation FIDIC (the International Federation of Consulting Engineers) believes that its member associations and their members should strive to achieve the highest degree of quality and standards.

FIDIC has always had policy statements that it expects its members to follow to ensure high standards of service in the infrastructure industry. These standards are reflected in FIDICs contracts, policy work, events and committees.

## Transfer of Technology

### Transfer of knowledge and experience

Effective transfer of technology comprises the transfer of knowledge and experience from an Organisation, or individuals, to those not possessing such skills. Knowledge on local political, social and environmental conditions, and on indigenous techniques and materials, is as important to ensure that the acquired knowledge and experience can be put to effective and lasting use.

The transfer of technology is recognised as an essential element in the process towards sustainable development on a global scale. Accordingly, the transfer of technology, or know-how, should become a necessary element of projects undertaken in the developing world.

### Consulting work as channel for transfer

The transfer of know-how is a continuous process taking place in all sectors of society. However, an obvious and effective channel for accomplishing this transfer is professional consulting work, which generally starts with the conceptualisation, planning and development of capital projects, and then continues through design, implementation, operation, maintenance and rehabilitation. In professional consulting work, the transfer of know-how usually involves the passing of knowledge and experience from consulting organisations or individual consultants of the industrialised countries to the local consultants, or the staff of clients, in developing countries.

### Working in mixed teams

There are many ways to achieve transfer of knowledge and each method has a particular advantage or disadvantage depending on many factors. It is very important to carefully select the appropriate method in view of the local circumstances and objectives. Notwithstanding the method of approach, however, an effective transfer of knowledge through development projects will hardly be possible unless the receiving party plays a meaningful role in the project. A passive counterpart system has proved to not be the answer. Integration of clients' and consultants' teams, or of local and foreign consultants, will ensure the local input necessary to make transfer of knowledge work.

### Classroom type of instruction and on-the-job participation

The transfer of know-how can take place in the client's country or in the country of the foreign consultant, or possibly in both places. It can be achieved through formal classroom type instructions, and/or on-the-job participation and training in the planning, design, implementation and commissioning of projects. Ideally, the recipient personnel should receive formal classroom type instruction and also be required to apply the knowledge thus acquired by working on projects.

### Comprehensive scope of skills to be transferred

The transfer of know-how should be aimed not only at passing on technical skills, but also at teaching the overall aspects of project development, environmental concern and project management, as well as company administration and finance. The full integration of project teams should be recognised as an important requirement for achieving the optimum transfer of technical, ecological, administrative and financial know-how from foreign to local consulting firms.

This comprehensive skill is often overlooked with the result that the transfer of skills to individuals may be successful, but the receiving party may not be able to benefit because of the failure of the local business unit. Accordingly, the strengthening of the consulting industry should be an objective to enhance the survival rate of local firms.

## Transfer program

In the case of planning, design and construction projects, the technology transfer program should be developed taking into account

- the appropriateness of the technology to be transferred;
- the type of service to be performed by the foreign consultant;
- the organisational structures of the receiving bodies (public and private);
- the availability of suitable individual recipients possessing the necessary scholastic, technical and language capabilities, either within the client's Organisation, or within local consulting firms;
- the availability of funds to cover the costs of accomplishing the required transfer of know-how, in addition to the normal projects costs;
- the impact that the requirement for transfer of know-how will have on the foreign consultant's responsibilities and liabilities;
- the environmental sustainability of the project.

## Monitoring

The programme should also include measures for monitoring the result with respect to technology transfer.

### FIDIC recommends:

- That all projects consider technology transfer, to the extent possible, without imposing unreasonable liabilities on any of the parties involved, and without rendering impractical the completion of their services within the available budget and time.
- Projects should consider the mechanism of technology transfer and how it can be best achieved through collaboration between firms or organisations.
- Projects should explore how the successful transfer of know-how through ad-hoc collaboration on specific projects, should be considered as a specific task in the project description,
- Member associations and their members should work with clients to ensure the project terms of reference make adequate provisions for such transfer in the time, personnel, liability and insurance requirements, and the additional costs that will be incurred in achieving the objective. Information and undertakings relating to transfer of technology should be collected into a statement that is agreed to by both parties.

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**Endnotes**