THE ROLE OF THE WORLD ROAD ASSOCIATION (PIARC) IN TECHNOLOGY TRANSFER

by

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ABSTRACT

The term 'technology transfer' is defined as the process of openly gaining and freely sharing information about experiences, solutions, technologies and innovations. A brief description is provided of the World Road Association (PIARC) including its origins and the way that it operates to exchange knowledge and techniques on roads and transportation.

A number of PIARC activities contribute to Technology Transfer with a special emphasis on the needs of developing and emerging countries. The Terminology Committee provides technical dictionaries in many languages and other Committees address the dissemination of international best practice covering the whole range of activities in the road and road transport sector. Funds are available to assist developing countries to meet the costs of attending meetings and seminars. Seminar programmes are being arranged to meet the interests of developing and emerging countries and support is available for the establishment of National Technology Transfer Centres and nodes of the World Interchange Network (WIN). The Highway Development and Management System - HDM4 provides access to the international best practice in making decisions about investment choices in the road transport sector.

1. THE ROLE OF THE WORLD ROAD ASSOCIATION (PIARC) IN TECHNOLOGY TRANSFER

1.1 Technology Transfer - What is it?

Even at a Technology Transfer Conference it may be useful to remind ourselves what we mean by 'Technology Transfer' because the term is often misunderstood. It does not mean the free transfer of commercially developed intellectual or physical property. It does mean the process of openly gaining and freely sharing information about our experiences, solutions, technologies, and innovations.

Technology transfer can occur in many ways and different forms. In its simplest form, 'technology transfer' happens when someone reads about a "new" technique in a report or a technical magazine from another place. 'Technology transfer' happens when a university professor in one country learns about and teaches an innovative design method from another country. 'Technology transfer' also can occur when a new product or material is included in a road project by a contractor or consultant from another continent,

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or another industry. Regardless of the form, ultimately 'technology transfer' is aimed at using the benefits of someone else's successful research, development or experience to benefit roads locally – often at a fraction of the original development cost. 'Technology transfer' in the road transport sector, as in any field, can be a catalyst for accelerated economic, social and environmental development.

1.2 The World Road Association (PIARC) – What is it?

The World Road Association (PIARC) exists "To Exchange Knowledge and Techniques on Roads and Transportation". It was founded in 1909 following the 1st International Road Congress held in Paris in 1908. It is the oldest international association concerned with Road Engineering, Road Policy and the Management of Road Networks. It now boasts 97 Member Governments and other Members in 129 countries world-wide. The official languages are French and English and the Central Office of PIARC is located in Paris, France.

PIARC is a non-political, non-commercial and non-profit making association. Its vision is that: -

> *"PIARC will be the World leader in providing information on roads and road transport policy and practices within an integrated sustainable transport context".*

The PIARC Mission statement is: -

" PIARC exists to serve all its members by:

- being a leading international forum for analysis and discussion of the full spectrum of transport issues, related to roads and road transport,
- identifying, developing and disseminating best practice and giving better access to international information,
- providing within its activities special emphasis for developing countries and countries in transition,
- developing and promoting efficient tools for decision making on matters related to roads and road transport,

PIARC's values are:

- to provide universal quality service to its members,
- to be open, objective and impartial,
- to promote sustainable and sound economic solutions,
- to recognise road transport in an integrated transport and land use context,
- to be customer driven,
- to respect the differing international road transport needs,
- to be a leader in technology transfer.

The Strategic Plan of the World Road Association (PIARC), approved in September 1995 and revised at the end of 1999, defines five Strategic Themes for future action of PIARC: -

Theme 1 – Road Technology
Theme 2 – Road Transport, Liveability & Sustainable Development
Theme 3 – Road & Road Transport Operations
Theme 4 – Management & Administration of the Road System

Theme 5 – Appropriate Levels of Road & Road Transport Development

1.3 What does PIARC do?

PIARC aims to deliver these objectives by sharing information about international best practice and serves all stakeholders in the road transport sector.

To achieve this, PIARC:

- creates and co-ordinates Technical Committees,
- organises a quadrennial World Road Congress, a quadrennial Winter Road Congress and various technical seminars and
- publishes a large number of documents including a quarterly magazine ("Routes/Roads").

The new PIARC strategic plan places great emphasis on the need to meet the requirements of all of its members including the 60% of members in countries with a GNP less than US$3,100 per capita. These countries are least able to afford the costs of representation on technical committees and hence least able to take advantage of much of the potential for technology transfer. This also means that they are least able to ensure that the PIARC work programme fairly reflects the problems and issues which are most important to them.

The World Road Association's (PIARC) commitment to technology transfer is the crux of its philosophy and mission from the very beginning, nearly 100 years ago. That commitment has evolved with the Association, from information sharing between developed industrialised countries to include developing nations and countries in transition. At the 1987 World Road Congress in Brussels, PIARC passed a resolution formally affirming the commitment to technology transfer. Over the years that commitment has led to more co-operation, programmes and information dedicated to achieve that goal. The 1995 and 1999 World Congresses in Montreal and Kuala Lumpur reaffirmed those goals in the PIARC Strategic Plan.

2 PIARC ACTIVITIES RELEVANT TO TECHNOLOGY TRANSFER

Because the objectives of the Association are so clearly geared to the exchange of information and knowledge it is not surprising that most of its activities are relevant to Technology Transfer and the subject of this Conference.

2.1 Technical Committees

The detailed work of PIARC is carried out through the programmes of 20 Technical Committees covering the whole range of road and road transport activities and grouped under the 5 Theme Areas listed above. Each member country is entitled to be represented on each Committee and Corresponding Members may be nominated where full membership is not justified.

In this context the Terminology Committee is of particular note because of its role in tacking the challenge of language differences in the promotion of information exchange. Technical Dictionaries of Road Terms are available in 13 languages

2.1 Special Fund

The Special Fund of PIARC is designed to enable professionals from developing nations and countries in transition to participate practically in World Road Association‘s activities and particularly Technical Committees activities.

Beneficiaries must sign an agreement with the First Delegate of their country and PIARC clarifying their responsibilities such as periodical reports to both of them. Technical Committees are recommended to use the Special Fund to strengthen the participation of members from developing countries and countries in transition. Each country eligible to use the Special Fund can nominate a maximum of two experts to benefit under the scheme.

The Special Fund must help to reflect the whole range of PIARC member governments in PIARC activities (the objective being to have a balanced representation across continents and regions). The amount of the grant given is a function of GNP per capita. Only the countries classified as "Low-income economies" and "Lower-middle-income economies" in the World Bank list may benefit from the Special Fund (in 1998: GNP per capita lower than USD 3,100).

At the request of the First Delegate, the Fund could bear up to either 100% of travel expenses or 100% of accommodation expenses linked to the participation of the beneficiary in a meeting of the related PIARC Technical Committee. The Fund may also be used for participation in some events closely linked with PIARC activities, especially in the case of seminars organised by Technical Committees.

2.3 Seminar Programme

At the XXI World Road Congress in Kuala Lumpur, PIARC agreed that all technical committees should arrange two meetings in developing or emerging countries and that a relevant seminar should be held in conjunction with those two meetings before the XXII World Road Congress in Durban in 2003

The programme will be designed to study a wide range of road related issues and problems of particular concern to developing and emerging nations. The overall objective of the programme will be to: -

> *“Ensure that the road and road transport related needs of all PIARC member countries are widely recognised so that outstanding issues and problems can be addressed and tackled. Progress may be achieved through the exchange of experiences, the transfer of technology, the work programmes of technical committees and the identification of research to fill the remaining gaps in knowledge.”*

2.4 Technology Transfer Centres

Regular meetings of professional societies and trade associations historically have been fertile ground for technology transfer and technical advancement. Where such professional societies or associations are not active, or where there is a need to energize the process, Transportation Technology Transfer Centers have emerged as effective agents in such processes for continuous improvement. Successful centres have been operating in North America and Latin America for the past decade or two under the

guidance of the Federal Highway Administration in the USA. The potential for expanding this success around the world is already underway in Africa and Eastern Europe. The membership of the World Road Association (PIARC) has recognized the value of Technology Transfer Centres, and in 1999, PIARC Council passed a resolution to encourage the development of new centres.

Where technical libraries and research institutes exist, they are a natural base from which Technology Transfer Centres may evolve. Technology Transfer Centres can serve as a focal point and an institutionalized catalyst for active dissemination of technical documents and other technology transfer activities. They should be considered as part of a larger process of the ongoing technology transfer process, and not the sole vehicle for it.

From a PIARC unique perspective, in countries where there are PIARC National Committees, a Technology Transfer Centre can also serve as the executive agency or secretariat for the National Committee. Where there is no National Committee, the stakeholders of a Technology Transfer Centre can be educated about the benefits of PIARC involvement and eventually become the nucleus of a PIARC National Committee.

It should be noted that the organisers of this First Transportation Technology Transfer Conference for Africa are themselves a Technology Transfer centre. The Centre has been in existence for several years with the support of the U.S. Federal Highway Administration but just recently PIARC agreed that it should also be a pilot PIARC National Technology Transfer Centre.

At the present time PIARC has proposed 3 pilot National Technology Transfer Centres and a further 8 countries have submitted expressions of interest and have been invited to make a detailed application.

A PIARC National Technology Transfer Centre may take many forms and be located in different types of institution. However it is expected that it must be locally sustainable to carry out at least a minimum list of core activities i.e.

a) maintain a reference library of key documents in an appropriate language,
b) maintain internet access,
c) maintain an up to date list of transport sector web-sites,
d) produce a regular newsletter,
e) maintain a WIN node (see below),
f) maintain a list of transport sector training courses and distance learning materials,
g) produce an Annual Report for the PIARC First Delegate and PIARC HQ,
h) prepare strategies for using various media for information exchange,
i) maintain independence from commercial interests, and
j) evaluate their performance as a Technology Transfer Centre.

PIARC is able to make a small initial contribution to assist in establishing a new centre, or in strengthening an existing centre, but day to day running costs must be met from within local transport sector budgets. A potential PIARC Centre must also demonstrate that the Centre will be operated for the benefit of all stakeholders in the road transport sector and not just for those responsible for construction and maintenance of the main road network.

2.5 World Interchange Network (WIN)

WIN is a network of computer nodes at the service of the international road community. It is intended that every PIARC National Technology Transfer Centre should also be a WIN node.

Officially launched during the XXth World Road Congress in Montreal in 1995, with the patronage of PIARC, the World Interchange Network (WIN) aims at promoting road-related information and knowledge transfer on a global scale, particularly for the benefit of developing countries and countries with economies in transition.

The basic concept of WIN consists in putting people with questions in touch with those who can provide solutions through an efficient information and knowledge interchange network composed of active bodies in road-related knowledge transfer, commonly called nodes.

Nodes are the very nerve centre of WIN. On the one hand, they collect questions at the local or national level and forward them to other nodes, and on the other they receive questions from other nodes and try to propose contact details of experts (mainly, but not exclusively, at the local or national level) likely to have solutions.
The primary concern is to put people in touch.

Using the Network is completely free of charge. The relation between the user and the experts takes place outside WIN. The service provided by the experts is not necessarily free of charge.

2.6 Highway Development and Management System - HDM4

The Highway Development and Management System - HDM-4 - is a software system for investigating choices in investing in road transport infrastructure. The World Road Association (PIARC) essentially owns the system on behalf of its members and co-ordinates the availability, support and training opportunities for HDM-4 users, and future research and development activities.

The tools within the system use models incorporating international best practice to assist users in making choices about: -

- -developing new roads,
- -improving existing roads,
- -maintaining existing roads,
- -introducing new vehicle technology,
- -introducing new ways for funding and managing road assets.

The user groups associated with HDM-4 provide another example of opportunities for information exchange and updated versions provide the basis for continuously upgrading knowledge of best practice in this area.

3. THE WAY FORWARD

Hopefully the details presented above have demonstrated the wide ranging ways in which PIARC contributes to the process of 'Technology Transfer' in the road and road transport sector. Much is being done already but more can be achieved with the active involvement of member countries. Countries that are already members can benefit by active involvement in the Technical Committees relevant to their priority needs and by making full use of the facilities of the Association. Countries not currently members of PIARC are invited to consider the potential technology transfer benefits of being a member of this world-wide network of professionals in the sector.