

**ICTPI 2009**

***Management of Innovation and  
technology Transfer Process Between  
University & Industry: The Materials  
Research Center case in Universidad  
del Valle, Colombia***

**Juan A. Ortega Ing. MSc.**

**Universidad del Valle, School of Industrial  
Engineering and Statistical, Colombia**

Thanks to Centro de Investigación de Materiales  
Hard and Super Hard Coating project team:

Director: Federico Sequeda PhD- UNIVALLE

Alderson Neira MSc. (c) PhD- NCSU-USA

Irina L. Gribenchenko Ing.MBA.- GGT-UNIVALLE

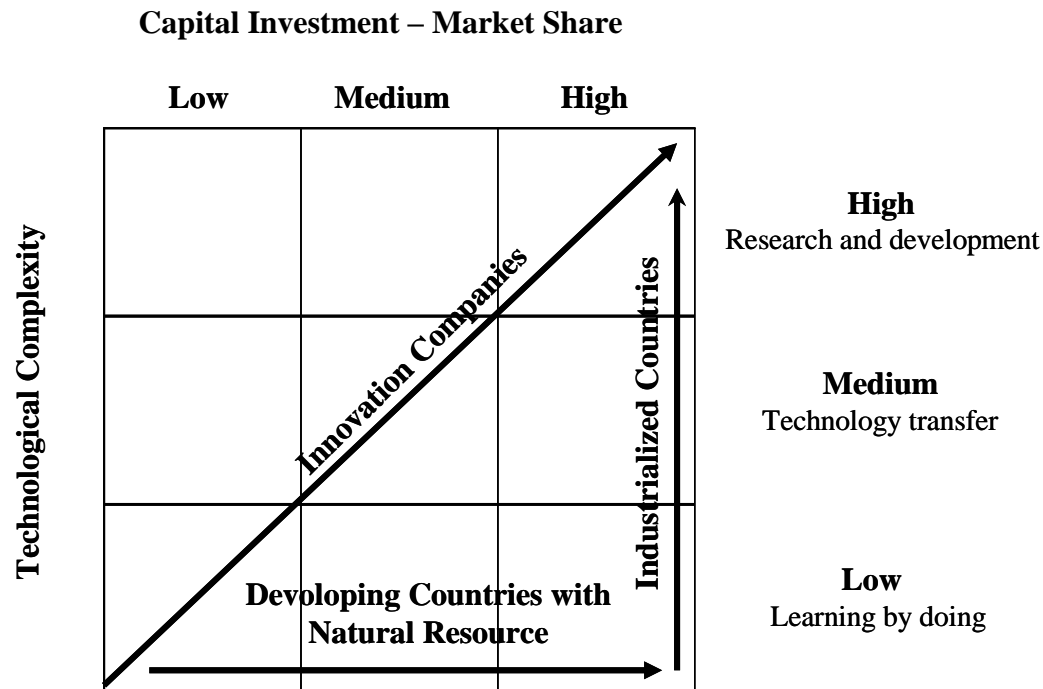
# ***Management of Innovation and technology Transfer Process Between University & Industry: The Materials Research Center case in Universidad del Valle, Colombia***

This work presents a conceptual proposal about The Economic – Technological World Map for understanding the new International Division of Labour and establishing knowledge networks between G-8, OECD countries and developing countries to face the transfer of technology process to industrial sector through R&D universities centers as a strategy for long term growth.

We report on a case-study based transfer of technology carried out in Colombia on Hard and super Hard Coating Project in the Materials Research Center CIM-UNIVALLE

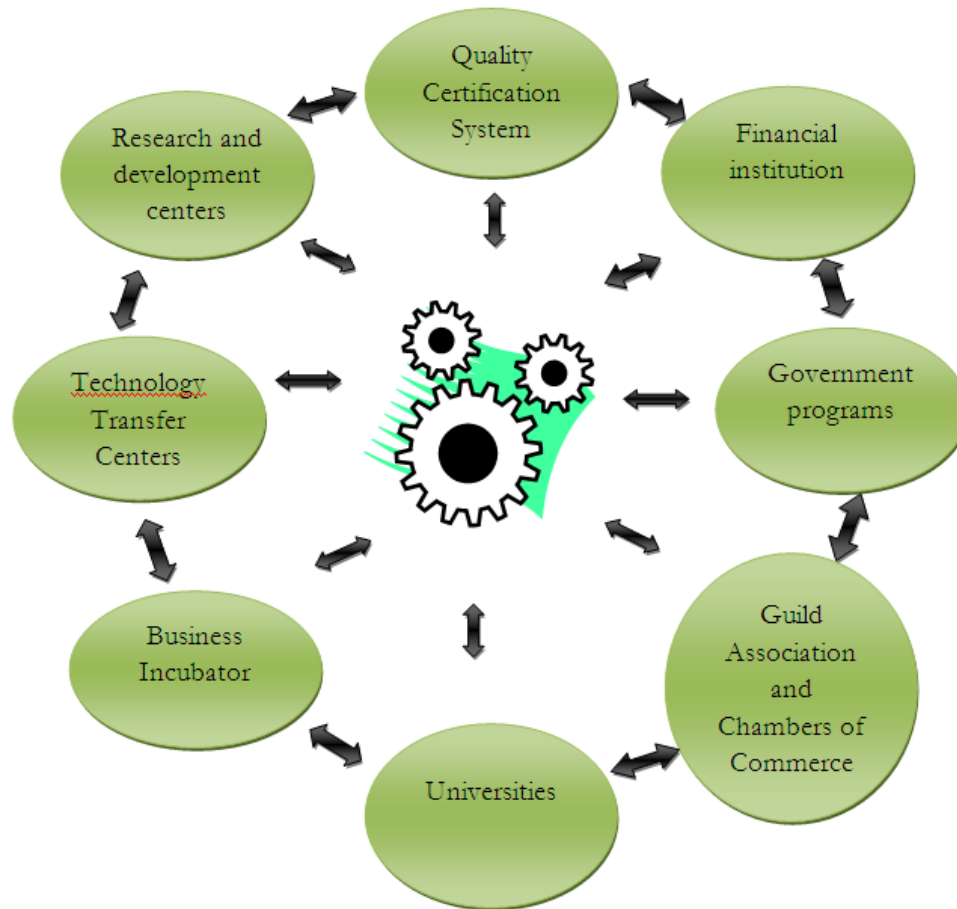
# The Economic-Technological World Map ( The new international division of labour )

Source: Ortega J.A. (2007)

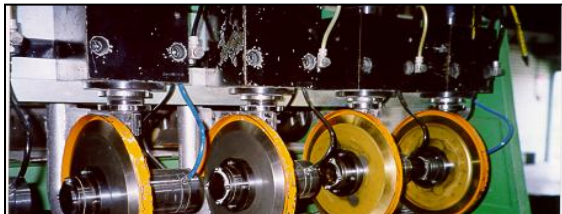


# The National Innovation System

Source: Ortega J.A. (2008)



# The Materials Research Center- CIM-UNIVALLE



**Lab. Recubrimientos Duros – Aplicaciones Industriales,  
UNIVALLE**



**Planta Piloto, SENA: CDT - ASTIN**

# The Materials Research Center- CIM-UNIVALLE

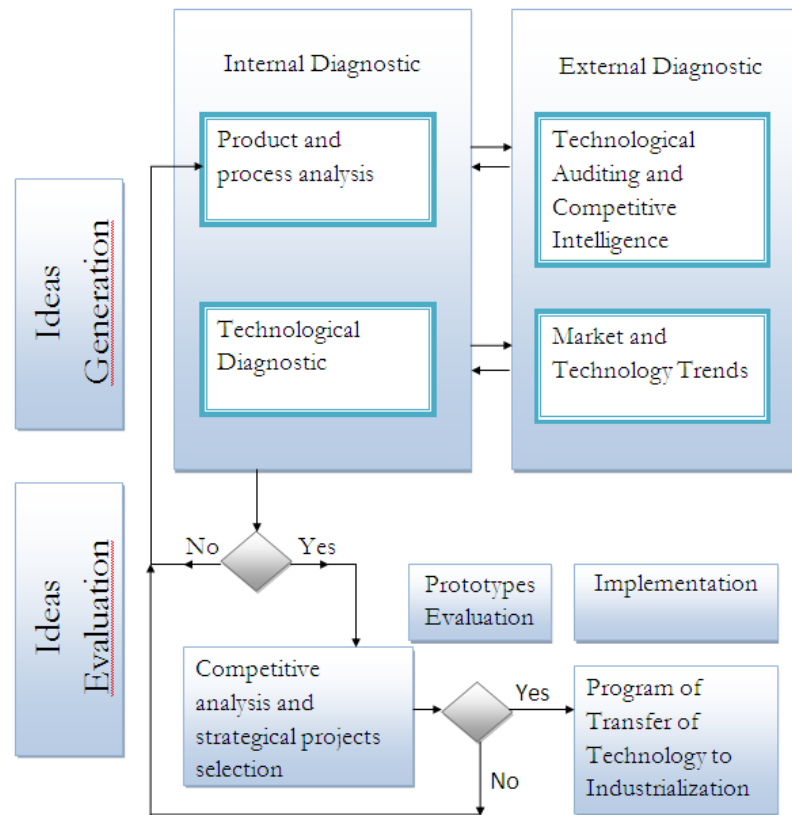
El Centro de Investigación de Materiales- CIM belongs to the School of Engineering Materials in Universidad del Valle, which promotes State-University-Industry strategic alliances making possible the development of new materials and services for the Colombian Industry.

Its origins date from 1998 when a project called Hard Super Hard Coatings is initiated through the financial support of national council for science and technology – COLCIENCIAS, and co-financed by the most important companies related with the metalworking, wood and paper sector in the country, and the government institution – SENA, in charge of technical training and support for SMEs sized companies, for a total project cost of 2.1 million dollars.

# The Management Innovation Process Model

- A proposal The R&D Management Group from Universidad del Valle- Colombia

Source: Ortega J.A. (2009)



# THE PROCCES OF TECHNOLOGICAL INNOVATION

Step 1. Generation of ideas and estimation of potential market value.

This step addresses the analysis of existing product and technologies and the market and technology tendencies. We suggest the following criteria to evaluate new ideas of projects:

- coherence between the objectives and the corporate strategy;
- Potential value of the estimated market;
- Complexity of the technology and estimated required investments;  
and
- Impact and relationship with the environment: Legal, trades, environmental licenses, and general regulatory issues.

# THE PROCCES OF TECHNOLOGICAL INNOVATION

## Step 2. Tehcnological evaluation of the Project profiles

This includes the required facilities to perform the industrial and commercial operations so that the new product may be developed and merchandised, and the technological learning to apply in future projects. We suggest the following criteria to evaluate the technological pre-feasibility of the project profile:

- innovative characteristics of the product and possible competitive advantages;
- required capacity and resources for R&D;
- Required capacity for production; and
- Technological learning as a result of the project.

# Integral evaluation of projects ideas

Source: Ortega J.A. (2007)

## INSTITUTIONAL CRITERIA

- STRATEGIC COHERENCE
- COMPETITIVE ADVENTAGE
- IMPACT OF THE PROJECT IN THE SURROUNDINGS

## TECHNOLOGICAL CRITERIA

- CHARACTERISTIC OF THE INNOVATION
- CAPACITY OF RESEARCH, DEVELOPMENT AND INNOVATION
- CAPACITY AND INFRASTRUCTURE OF MANUFACTURE, DISTRIBUTION, SERVICES AND COMMERCIALIZATION
- TECHNOLOGICAL LEARNING

## ECONOMIC CRITERIA

- POTENTIAL MARKET VALUE
- PROJECT'S PROFITABILITY

# Conclusions

- In our world with financial crisis, we can only maximize the capabilities and potential of an global economy with scientific, technological and technical cooperation between industrilized and developing countries.
- Today, more than ever before, we know that the management of technology and knowledge networks, and the ability to apply them to productive activity is essential to maintain economic growth and the globalization of an equitable, balanced and distributive liberalism.

# Conclusions

- Science and Technology policies constitute an effective and very important resource to promote the sponsorship of R&D centers and support the technology transfer process in developing countries by establishing strategic alliances with leading companies.
- The R&D centers should have their own model for management innovation process to make them more versatile evaluating technical and commercial possibilities for new products, processes and services.

Thank You!

**PORTO, ICTPI 2009,**