INDUSTRIAL ECONOMICS OF TELECOMMUNICATIONS AND STRATEGY
(Graduate level course)

1.0 INTRODUCTION AND DESCRIPTION OF THE COURSE

This course includes material from courses in economics, business, and public policy at the graduate level. Additionally, this course has been supplemented with material from investigations and consulting studies at the international level.

A wide spectrum of material has been selected, with the purpose of introducing the participants to the important changes that are happening in the telecommunications industry, and the techniques usually used for cost estimations, prices, rates and other elements related to the regulation of telecommunications industry.

2.0 PURPOSE OF THE COURSE

This course introduces the participants in the diverse aspects of the industrial economics of the telecommunications sector. The main objectives are:

- introduce the participants to new market structure, services, and technological changes of this industry, as well as to teach techniques for strategies of high management.
- familiarize the participants with the technological changes and tendencies in the industry of telecommunications
- familiarize the participants with the different costs (distributed costs, marginal, incremental, etc.), usually used in the regulation he/she practices (estimate of costs and rates of telecommunications).
- familiarize to the participants with the different regulation models (prices collide, regulation with incentives, etc.), usually used in the practice of the regulation of the systems of telecommunications
- give a revision of the different international models of interconnection rules. To teach the participants the different models or techniques used at international level to estimate interconnection costs.
- provide solid basis for the use of analytic methods (technical-quantitative) used in the industrial economy of telecommunications.

3.0 AUDIENCE

This is an advanced level course. This course is directed to graduate students, for personal of regulatory and antitrust agencies, international operators, consultants, managers in charge of decisions, and professionals involved with the industry of telecommunications.

4.0 REQUIREMENTS

Basic knowledge of some microeconomics, regulation and antitrust concepts is highly advisable.

5.0 DURATION

The length of this course is 32 hours of classes. It is offered in 5 consecutive days of classes.

6.0 COURSE PROGRAM (COURSE OUTLINE)

SECTION I AND II: INTRODUCTION, TENDENCIES AND CHANGES IN THE SECTOR OF TELECOMMUNICATIONS

1.0 Introduction to the Telecommunications Industry

- 1.1 Objectives of the course and focus
- 1.2 Natural monopoly and the industry of the telecommunications
- 1.3 Specific aspects to the telecommunications, institutional environment and performance
- 1.4 Privatization, regulatory agencies, and regulatory policies
- 1.5 Regulatory tendencies on the industry of telecommunications.

2.0 Understanding the changes in the Industry of Telecommunications

- 2.1 Market structure, technological change, infrastructure and competition
- 2.2 Market structure, demands and costs for services
  - 2.2.1 Wireless telephony: tendencies, prices and technology
  - 2.2.2 Long distance
  - 2.2.3 Internet services
  - 2.2.3 Other services
- 2.3 The market for new services
- 2.4 The new structure of the companies of telecommunications (alliances and coalitions)
- 2.5 Types of prices, setting prices, marketing strategies and penetration
- 2.6 Strategy and values in the industries of telecommunications

3.0 Regulatory Models, Privatization and Sectoral Reforms

- 3.1 Changes in the regulatory models
- 3.2 Conceptual Framework for sectoral reforms
  - 3.2.1 Markets and definition of services
  - 3.2.2 Integration rules and competition
  - 3.2.3 Other aspects
- 3.3 Market structure, reforms, and regulation of telecommunications services and markets
- 3.4 World tendency in telecommunication reforms

4.0 Property Rights, Standards and Compatibility

- 4.1 Spectrum and allocation of frequencies
- 4.2 Setting standards
- 4.3 The fight for the standards
- 4.4 The tendency of the standards in wireless telephony
- 4.5 Regulatory failure and competition

5.0 Understanding the New Tendencies in the Regulation of Telecommunications

- 5.1 Technological change and Regulation
- 5.2 General and specific regulation telecommunications industry
- 5.3 Regulation and markets
- 5.4 Regulatory models with incentives

Application: Review of regulatory models in Latin America and Eastern Europe .

SECTION III: APPLIED FINANCIAL ASPECTS TO REGULATION, MODELS OF REGULATION AND EFFICIENCY

1.0 Financial Aspects Applied to Regulation

- 1.1 Estimating the Cost of Capital
- 1.2 Asset valuation. Depreciation: accounting versus real
- 1.3 Estimating regulatory capital

2.0 Models of Regulation: regulation in practice

2.1 Revision of the different regulatory models
2.2 Pure rate of return regulation
2.3 Pure price-cap regulation
2.4 The different models of incentive regulation (Hybrid Models)
2.5 Other regulatory models

Application: International revision of different regulatory models (US, Australia, Latin America)

3.0 Estimating Efficiency in the Telecommunication Sector

3.1 Productive and allocative efficiency
3.2 Dynamic efficiency
3.3 Inductive and deductive models for efficiency estimation
3.4 Techniques for inefficiencies analysis (weighted averages, econometric models, DEA models)
3.5 Yardstick and Benchmarking
3.6 Estimating X-factor in price-cap regulation

Application: International revision of some application of efficiency modeling.

SECTION IV: TYPE OF COSTS, PRICES AND CROSS SUBSIDIES AND COMPETITION

1.0 Types of Costs, Cost allocation (cost recovery) and Fully Distributed Cost

1.1 Marginal costs
1.2 Sunk costs
1.2 Fixed and variable costs
1.3 The different types of costs for telecommunication
    1.3.1 Fully distributed costs (FDC)
    1.3.2 Marginal costs and incremental costs
    1.3.3 Average incremental cost
    1.3.4 Stand alone cost

2.0 Prices and Regulation

2.1 Marginal prices
2.2 Ramsey Prices

3.0 Linear and Non-linear Price Structures

3.1 Linear tariff (prices)
3.2 Multipart tariffs (Non-linear tariffs)
    3.2.1 Two parts tariffs
    3.2.2 Multiple blocks rates (increasing or decreasing blocks)

4.0 Price Structures and Cross Subsidies in Telecommunications

4.1 Different definitions of cross subsidy
4.2 Common costs and incremental costs
4.3 Different methodology for evaluating subsidy-free prices
4.4 Importance of subsidy-free prices and competition in telecommunication sector

5.0 Competition Policy in the Telecommunication Sector

5.1 Potentially competitive services
5.2 Monopolistic services
5.2 Predatory prices and competition policy

Application: Revision international experiences on price structure and competition.

SECTION V: INTERCONNECTION, UNIVERSAL SERVICE IN TELECOMMUNICATIONS

1.0 Interconnection and Access, Universal Service and Competition

- 1.1 The different methodologies to estimate interconnection price
  - 1.1.1 The efficient component pricing rule (Baumol-Willig rule)
  - 1.1.2 Fully distributed costs (FDC rule)
  - 1.1.3 Demand rule (Ramsey prices)
  - 1.1.4 Long-run incremental cost (LRIC)
- 1.2 Brief review of the different models of universal service implemented at international level
- 1.3 Economic model for universal service valuation and subsidy allocation
- 1.4 International review of interconnection prices

Application: Estimating interconnection cost.

2.0 Rate-Making in Practice

- 2.1 Objectives of a rate model
- 2.2 Information, and selecting the rate structure (price structure)
- 2.3 Cost allocation (cost recovery)
- 2.4 Other elements of the process of rates making
- 2.5 Periodic review, rates balancing and periodic indexation

3.0 Information and Cost Analysis

- 3.1 Databases for control and monitoring
- 3.2 Information systems for costs and rates
- 3.3 Managing the information

4.0 International Review of Sectoral Reforms in Telecommunications

- 4.1 Review and lessons learned from sectoral reform in the telecommunications sector
- 4.2 Final summary and the future challenges for the industry

Final Discussion: The current reforms in the US, less developed countries and future challenges.