社会開発調査部報告書

No. 22

JAPAN INTERNATIONAL
COOPERATION AGENCY(JICA)

BULGARIAN MINISTRY OF TRANSPORT
BULGARIAN STATE RAILWAYS
REPUBLIC OF BULGARIA

THE MASTER PLAN STUDY FOR LONG TERM MANAGEMENT OF BULGARIAN RAILWAYS

MARCH 1998

JAPAN RAILWAY TECHNICAL SERVICE
DAIWA INSTITUTE OF RESEARCH LTD
YACHIYO ENGINEERING CO., LTD

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FINAL REPORT

MAIN REPORT

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JAPAN RAILWAY TECHNICAL SERVICE
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1 U S Dollar＝1,700 Leva＝110 Yen
(September 1997)

PREFACE

In response to a request from the Government of Republic of Bulgaria, the Government of Japan decided to conduct a master plan study on The Master Plan Study on Long Term Management of Bulgarian Railways and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Bulgaria a study team headed by Mr. Hotsumi Harada, Senior Adviser, Japan Railway Technical Service (JARTS), three times between October, 1996 and March 1998.

The team held discussions with the officials concerned of the Government of Bulgaria, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Republic of Bulgaria for their close cooperation extended to the team.

March 1998

Kimio Fujita
President
Japan International Cooperation Agency

Letter of Transmittal

March 1998

Mr. Kimio FUJITA
President
Japan International Cooperation Agency

It is my great pleasure to submit herewith our Report on the Master Plan Study for Long Term Management of Bulgarian Railways. The report is the outcome of the Study carried out by Japan Railway Technical Service, Daiwa Institute of Research Ltd. and Yachiyo Engineering Co.,Ltd. based on the contract with Japan International Cooperation Agency (JICA).

The Study Team conducted field surveys in Bulgaria three times during the period between October 1996 and January 1998. The Team held thorough consultations with the Bulgarian governmental agencies concerned regarding the results of the field surveys and studies in Japan, and formulated a master plan including staged long-term programs on the long-term management of Bulgarian Railways. In close cooperation with the Bulgarian side, the Team studied the feasibility of the long-term plan from a wide spectrum of management, organizational, financial, technical and environmental aspects, and worked out this report.

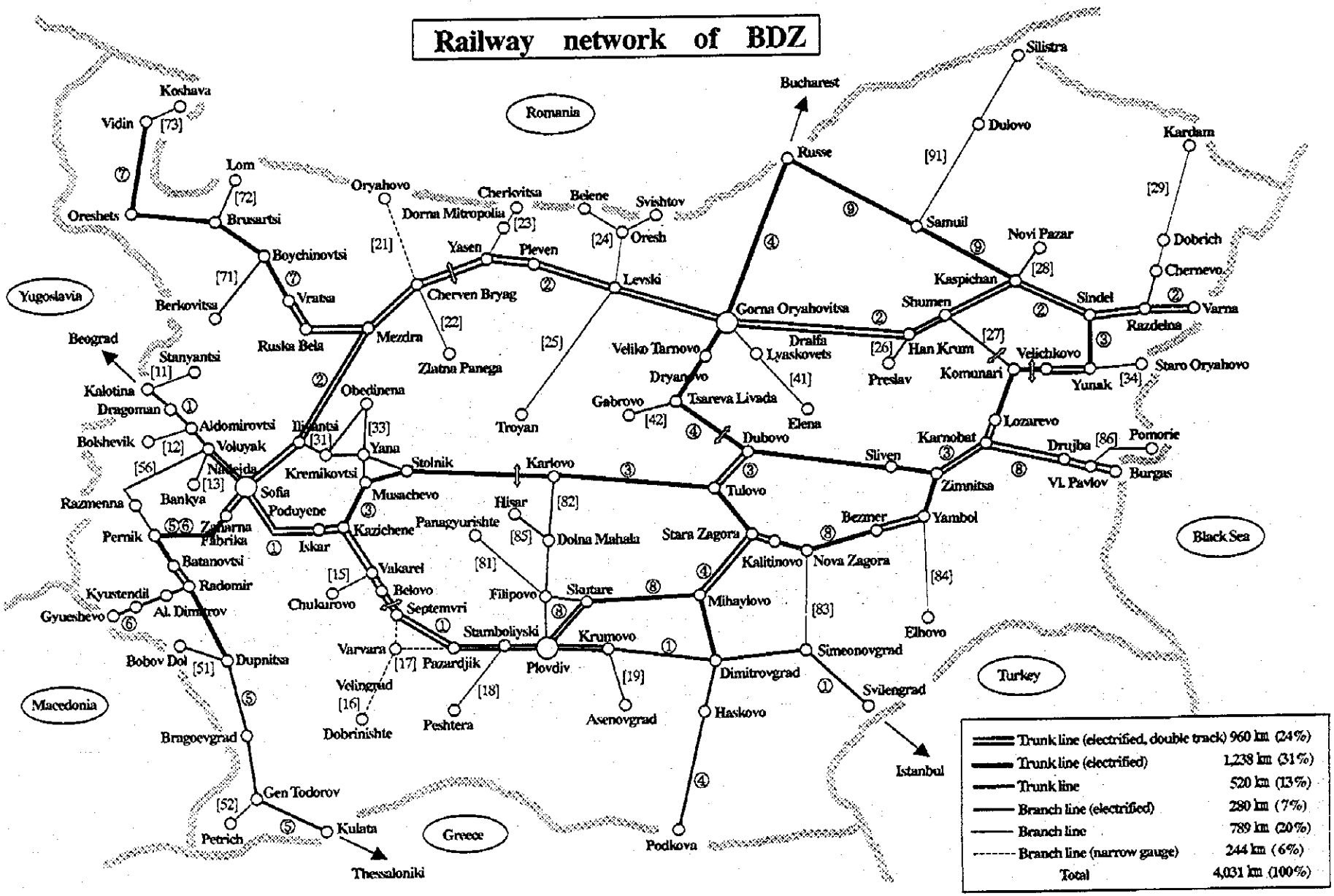
On behalf of the Study Team, I would like to inform you with my heartfelt thanks that Bulgarian governmental agencies concerned and counterpart personnel extended to us the generous cooperation, assistance and warm hospitality during our stay in Bulgaria.

Our thanks are also extended to Japan International Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Transport, and the Japanese Embassy in Bulgaria and JICA Office in Austria for their valuable advice and support.

Yours faithfully,

H. Harada

Hotsumi HARADA
Leader
The Study Team of the Master Plan Study
for Long Term Management of Bulgarian Railways


Railway network of BDZ
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Turkey
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Dobrich
Chernevo
Varna
Razdelna
Sliven
Zimnitsa
Karnobat
Lozarevo
Drujba
[86]
Pomorie
Vl. Pavlov
Burgas
Trunk line (electrified, double track) 960 km (24%)
Trunk line (electrified) 1,238 km (31%)
Trunk line 520 km (13%)
Branch line (electrified) 280 km (7%)
Branch line 789 km (20%)
Branch line (narrow gauge) 244 km (6%)
Total 4,031 km (100%)

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INTRODUCTION

1. BACKGROUND OF THE STUDY

The Republic of Bulgaria started in 1991 restructuring of the total economy from planned economy into free market system.
Having lost the former COMECON markets, on which Bulgarian economy had been largely dependent, the economic activities experienced a sharp fall, and the confusion arising from this structural change worsened the situation.
The Government's economic restructuring program enforced since 1991, aims at launching the economic activities onto a track for a stabilised growth with a middle/long term perspective. The program covers important matters such as the restructuring and privatising of so far national industries, the improvement of social infrastructure for facilitating the growth of private sectors, environmental protection/improvement, etc.

The improvement of transport sector is indispensable for the growth of the private sectors. It includes the rehabilitation of deteriorated infrastructure, improvement of facilities which can cope with growth in international trades, the improvement of efficiency in transport businesses so far run inefficiently under governmental control, the introduction of competition in transport market and the strengthening of governmental support for the free market system of transport.

The Bulgarian State Railways (hereinafter referred to as "BDZ") is now carrying out the "Railway Restructuring Project". It was initiated on financial support of international financial institutions. According to the "Action Plan" of the said Project, important modifications have been made in BDZ management systems and sales organisation. Improvement and rehabilitation works of BDZ fixed facilities and fleet are now under way. The Project covers up to the year 1998.

The Government of Japan and Bulgaria observed that the accomplishment of this Railway Restructuring Project will not be sufficient for improving the management efficiency and development of Bulgarian railways on a long term basis. They recognised that it would be necessary to set up a long-term plan which will ensure financial sustainability of BDZ after 1998.
The both Governments agreed, in this concern, that the Government of Japan would render technical assistance to BDZ in formulating this long term plan. The Scope of Work of the assistance was agreed between the preliminary mission of the Japanese Government and the Bulgarian Ministry of Transport/BDZ on March 13, 1996.

Japan International Cooperation Agency (JICA) selected a Japanese consultant consortium to implement the Master Plan Study for Long Term Management of Bulgarian Railways.

2. OUTLINE OF THE STUDY

2.1 Objective of the Study

(1) Analysis of the future alternative objectives and policies of the Ministry of Transport (hereinafter referred to as "MOT") and BDZ.
(2) Preparation of a long term plan for improvement of management efficiency and development of Bulgarian railways together with economic/financial analysis based on the mechanism of market economy.
(3) Preparation of a time phased plan including investment for integrating Bulgarian railways into the European railway system.
(4) Technology transfer to the Bulgarian counterpart personnel in the course of the Study.

2.2 Target Year of the Study

The target year of the master plan shall be from 1998 up to 2020 based on Scope of Work.

2.3 Study Area

The study area shall be the whole area of Bulgaria, especially along the railway lines.

2.4 Structure of the Study

The Study will be undertaken in 6 stages, and the following items will be examined at each stage.

PHASE 1 : 1st Study in Bulgaria

(1) Explain the Inception Report to Bulgarian officials, and discuss basic approaches of the Study.
(2) Collect data and information
-- Macro-economy of Bulgaria.

-- Government policies on transport and regional development.
-- Actual state of international transport and of European market.
-- All aspects of BDZ (financial, operational, sales management, maintenance, etc.)

(3) Collect data for traffic demand forecast and enquete survey.

(4) Identify the problems
-- BDZ financial situations
-- BDZ organigram and its efficiency, etc.(marketing and sales)
-- BDZ train operation and maintenance of facilities/fleet

(5) Prepare and explain the Progress Report.

PHASE 2 : 1st Study in Japan

(1) Work out basic countermeasures.
-- Those to be taken by Government.
-- Those for BDZ as a whole.
-- Those for each line/section of BDZ.

(2) Traffic demand forecast (domestic portion).

(3) Prepare the Interim Report.

PHASE 3 : 2nd Study in Bulgaria

(1) Explain the Interim Report to Bulgarian officials, and discuss basic countermeasures.

(2) Develop basic countermeasures and elaborate alternatives.
-- Alternative government policies.
-- Alternative countermeasures for BDZ as a whole.
-- Alternatives for line/section-wise countermeasures.

(3) Conduct supplementary surveys to collect necessary data.

(4) Traffic demand forecast (including international aspects)

(5) Environmental analysis (initial environmental analysis, social/economic impacts)

PHASE 4 : 2nd Study in Japan.

(1) Quantify the effects for financial evaluation.

(2) Evaluate BDZ's logistics/technical aptitude.

(3) Formulate Master Plan.

(4)
-- Staged long-term plan on: organisation of management/operation, sales policies and tactics, development of international railway traffic and non rail business, abolishment

of unprofitable services, social impacts, etc.

-- Staged long-term plan on: status of each line/section of network, priority investments of lines/sections.

(4) Prepare the Draft Final Report.

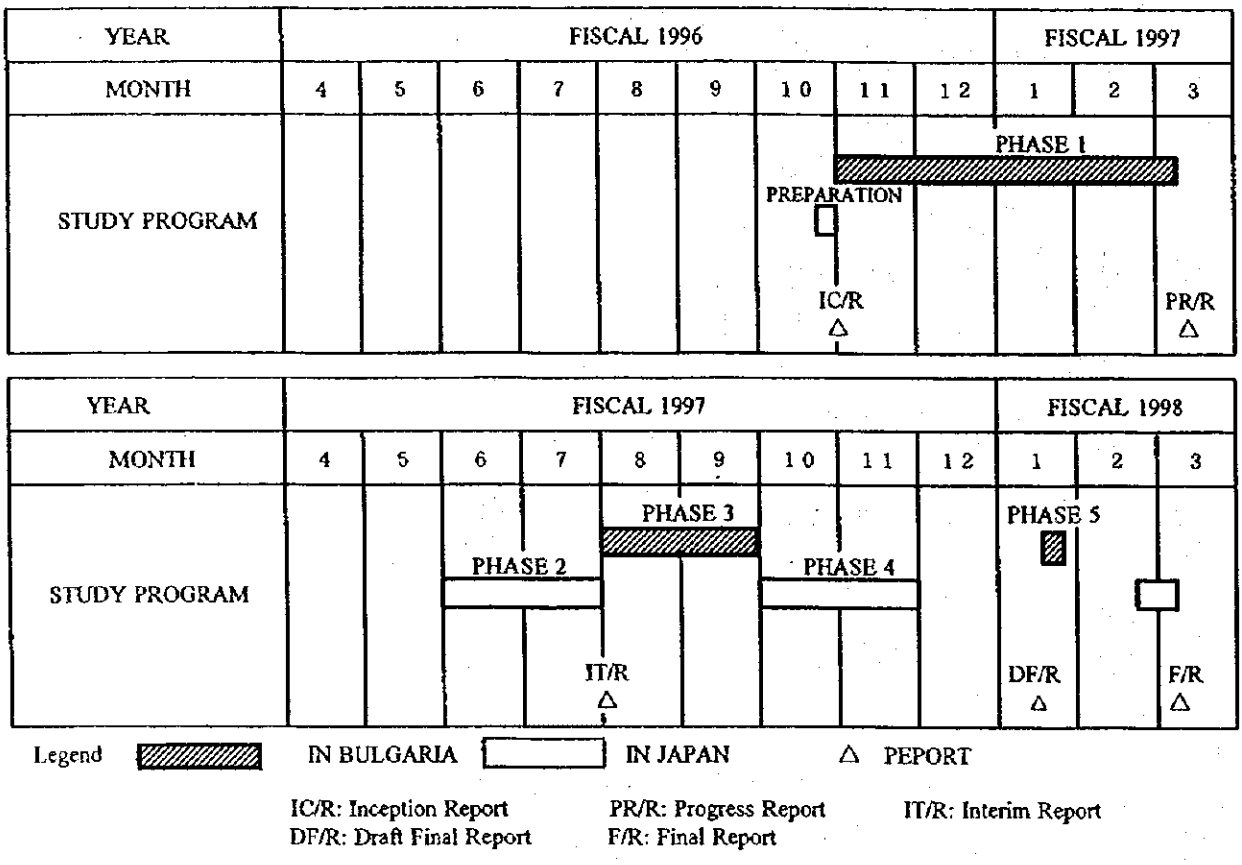
PHASE 5 : 3rd Study in Bulgaria

Explain and discuss the Draft Final Report with Bulgarian officials.

PHASE 6 : 3rd Study in Japan

Receive comments from Bulgarian Counterparts, and finalise and submit the Final Report.

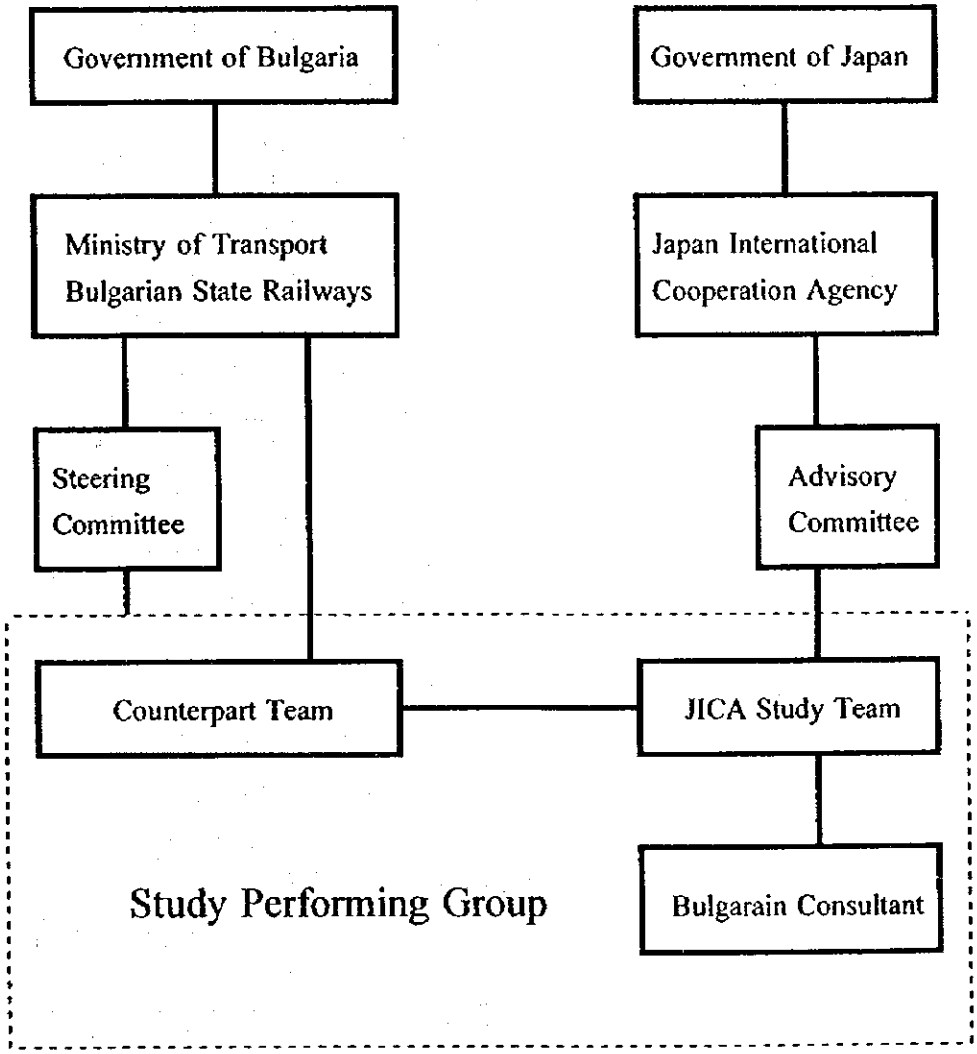
STUDY SCHEDULE



3. STUDY ORGANISATION

3.1 Organisation

Study Organisation involving the parties directly concerned with performing the Study is shown in the chart below.



STUDY ORGANISATION

3.2 Members list

(1) JICA Study Team

Mr. Hotsumi HARADA	Study Team Leader
Mr. Mutsuo SHINOMIYA	Acting Leader/Management & Finance Analyst
Mr. Shinji UEHARA	Organisation Planning Analyst
Mr. Peter Sanders MUSSON	Human Resources & Productivity Analyst
Mr. Toshiaki SAKATSUME	Macro-economy Analyst
Mr. Kenji TANAKA	Transport Planning Analyst
Mr. Christopher David HOLT	Transport Economy/Pricing Analyst
Mr. Yasuzo TAKENO	Law & Regulation Analyst
Mr. Yoshihiro OZAWA	Marketing/Combined Seamless Transport Analyst
Mr. Tetsuo HORIE	Traffic Demand Analyst
Mr. Chuji SUDA	Train Operation Planning Analyst
Mr. Hitoshi ISHIHARA	Track & Station Planning Analyst
Mr. Toshiro TACHI	Electrification/Signalling/Telecommunications/ Rolling Stock Planning Analyst
Mr. Akitoshi IIO	Environment Analyst
Mr. Mikio YOKOYAMA	Coordinator
Mrs. Zoya OCHIAI	Interpretress

(2) JICA Advisory Committee

Mr. Minoru MUROGA	Former Member of the Board, Japanese National Railways
Mr. Ryosuke ITAZAKI	Ministry of Transport, Government of Japan
Mr. Michio HIROSE	Ministry of Transport, Government of Japan
Mr. Shigemasa SATO	Ministry of Transport, Government of Japan
Mr. Nagaharu MITSUTA	Fujitsu Research Institute
Mr. Nobuhiro KOYAMA	Institute for International Cooperation, JICA

(3) JICA Office

Mr. Koichi KITO	Social Development Study Dept., JICA
Mr. Shoichi TSUGANE	Social Development Study Dept., JICA

(4) Steering Committee

Mr. Yordan MIRCHEV	Director General of BDZ
Mr. Ivan IVANOV	Chairman of Governing Council of BDZ
Mr. Simeon EVTIMOV	Deputy Director General of BDZ
Mr. Vladimir DUNCHEV	Deputy Director General of BDZ
Mrs. Gergana IVANOVA	Deputy Director General of BDZ
Mr. Ilia PASTUSHANSKI	Deputy Director General of BDZ
Mr. Ivan KURTOV	Deputy Director General of BDZ
Mr. Dimitar ZOEV	Head of Transport Policy Dept. of BDZ
Mr.Stefan ELENKOV	Expert of MOT
Mrs. Vessela GOSPODINOVA	Head of Unit European Integration of MOT
Mr. Velichko RAIKOV	Chief of Sector, International Relations Dept. of MOT
Mr. Kamen PAVLOV	Head of International Relations, Strategy and European Integration Dept. of BDZ
Mr. Peter PANOV	Head of Passenger Transport Dept. of BDZ
Mr. Vasko ANANIEV	Head of Financial and Planning Dept. of BDZ
Mrs. Aspassia VATRALOVA	Head of Freight Operations Dept. of BDZ
Mr. Georgi NIKOLOV	Director of Railway Research Institute (RRI)
Mr. Krassimir ANGUELOV	Senior Expert in International Relations, Strategy and European Integration Dept. of BDZ
Mr. Angel DANCHEV	Head of Freight Dept. of BDZ
Mr. Dimitar STOYANOV	Deputy Head of Technical University - Sofia
Mr. Peter BASHIKAROV	Parliament of Republic of Bulgaria
Mr. Dimitar STAMOV	MOF
Mrs. Nina DINITROVA	MOF
Mr. Kostadin TAUSHANOV	MRDPW
Mr. Atanas BATAKLIEV	MTT
Mr. Tzvetan GORANOV	MTT

(5) Counterpart personnel

Area of Work	BDZ Experts	
Project Leader	Yordan Mirchev	Director General
Team Leader	Simeon Evtimov	Deputy Director General
	Vladimir Dunchev	Deputy Director General
Management Analysis	Simeon Evtimov	Deputy Director General
	Georgi Nikolov	Director of Railway Research Institute (RRI)
Financial Control	Gergana Ivanova	Deputy Director General
	Vasko Ananiev	Chief of Financial & Planning Dept.
	Irina Karagiozova	Financial Expert
Train Operation Planning	Vladimir Dunchev	Deputy Director General
	Georgi Nikolov	Director of Railway Research Institute (RRI)
	Peter Mironov	Freight Organization, RRI
	Danail Vanchev	Head of Movement Dept.
	Anton Burov	Int.Relations, Strtegy & European Integration
	Georgi Nenov	Traction Dept.
Permanent Way	Ilia Pastuhanski	Deputy Director General
	Stephan Paunchev	PIU Expert
	Simeon Kotopanov	RRI
	Tatyana Gutoranova	Permanent Way Dept.
	Peter Dyakov	Permanent Way Dept.
Electrification	Ilia Pastuhanski	Deputy Director General
	Zdravko Bakalov	Electrification Section, RRI
	Nikolay Anev	Catenary & Power Supply Dept.
Signalling	Ivanka Stoyanova	Head of Electrotechnical Dept.
	Veneta Peeva	Electrotechnical Dept.
	Vesselka Kamburova	Int.Relations, Strtegy & European Integration
Telecomunications	Valentin Doychev	Electrotechnical Dept.
	Nicola Kovachev	Electrotechnical Dept.
Information Systems	Sofka Ivanova	Int.Relations, Strtegy & European Integration
	Plamen Sergiev	Electrotechnical Dept.; Telecom.
	Dimitar Zahariev	Director, Main Conputer Center
	Natalia Androva	Information System, RRI
Traction & Rolling Stock	Ivan Kurtov	Deputy Director General
	Yordan Pertolski	Head of Rolling Stock Dept.
	Yordan Kostadinov	Deputy Director of RRI
	Enyo Borshukov	Head of Traction Section of RRI
	Stephan Hristov	Traction Dept.
	Andrey Nakev	Rolling Stock Dept.
	Bogomil Kovachev	Int.Relations, Strtegy & European Integration
Human Resources Control & Productivity	Yordan Dimitrov	Head of Human Resources Dept.
	Vera Kochinova	Human Resources
	Plamen Kolev	Human Resources
	Aleksander Savov	Human Resources
	Anna Baklova	Human Resources,RRI

Area of Work	BDZ Experts	
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	Angel Danchev	Head of Freight Dept.
	Aspasia Vatralova	Freight Dept.
	Krassimir Anguelov	Int.Relations, Strtegy & European Integration
	Lyubka Ineva	Int.Relations, Strtegy & European Integration
	Rumyana Koleva	Passenger Organization Section, RRI
	Neli Raikova	Passenger Organization Section, RRI
	Penka Dilova	Passenger Organization Section, RRI
	Violeta Uzunova	Int.Relations, Strtegy & European Integration
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	Vladimir Inkov	Int.Relations, Strtegy & European Integration
	Stephan Mandev	Passenger Dept.
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	Krassimira Illeva	Financial and Economic Planning Dept.
	Ekaterina Stoyanova	Economic Planning Dept.
	Elena Georgieva	Economic Section, RRI
	Galina Dimitrova	Economic Section, RRI
	Lyubka Ineva	Int.Relations, Strtegy & European Integration
	Dimitar Petkov	Chief of Passenger Marketing Sector
Transport Policy, European Integration, Black Sea & Balkan	Simeon Evtimov	Deputy Director General
	Kamen Pavlov	Head of Int.Relations, Strtegy & European Integration
Legal Analysis	Peter Petrov	Legal Advisor
	Kamen Pavlov	Head of Strategic Development Dept.
Privatisation, Auxiliary Activities	Simeon Evtimov	Deputy Director General
Environmental Analysis	Kamen Pavlov	Head of Int.Relations, Strtegy & European Integration
	Anka Francova	Int.Relations, Strtegy & European Integration
Marketing & Combined Transport	Hristo Monov	Freight Dept.
	Vladimir Inkov	Int.Relations, Strtegy & European Integration
	Nadya Gancheva	Container Services
	Peter Tsanev	RRI
	Mariela Hristova	Int.Relations, Strtegy & European Integration
Macro-economy, Finance & National Income Allocation	Pencho Dakovski	Head of Economics Section, RRI

VOLUME I

GENERAL DESCRIPTION
AND
POLICY GUIDELINE

GENERAL DESCRIPTION AND POLICY GUIDELINES

CHAPTER 1 SOCIO-ECONOMIC FRAMEWORKS

1.1 ECONOMIC AND POLITICAL TREND

1.1.1 Economic Recession and Political Unrest

The Bulgarian economy has faced serious challenges since it adopted the market economy system and opened its door to the foreign countries. Particularly the export sector has been hit most seriously in the initial stage as the country's exporters lost the traditional markets such as the former Soviet Union and the former Yugoslavia. Like all the former centrally planned economies in this region, the country had very heavily relied upon intra COMECON trades and virtually closed the door to the other countries, the traded products and the production techniques had become more and more obsolete compared with the ones in the Western countries.

This export recession soon started to adversely affect the other economic sectors. The loss of exporting markets has resulted in the huge reduction in employment opportunities, and the double digit unemployment rate. On the other hand, the loss of foreign exchange revenue has resulted in the substantial decrease in the capital formation activities which also contributed to the deteriorating employment situation. Thus it is now seen that the economy's recession is truly across the economic sectors.

The economic recession also has brought about turmoil in the political and social aspects. Since the beginning of 1990s, the nation has experienced political and social unrest several times. These affairs in turn have contributed to the yet deeper economic difficulties as the people increasingly lost confidence on the nation as a whole. The latest turmoil was clearly created by the economic crisis of rapid devaluation of the national currency, resulted in the hyper inflation and rising unemployment rate from the second half of 1996.

1.1.2 Forecast Pattern of Economic Recovery and Development

The latest turmoil has been overcome by the general election in April 1997, which gave a land slide victory to the former opposition party "UDF". The new coalition

government was formed among the anti-socialist parties, and implemented several stabilization measures. The measures included price liberalization, acceleration in the privatization process and the introduction of the currency board. The currency board is a necessary measure in order to subside inflationary pressure prevailing in the country and enable the country to achieve sustained economic development in the long run, while the possibility of short term economic repercussion is not ruled out. Although the introduction of the currency board system has enabled the country to receive loans from international financial institutions, it appears difficult to receive economic momentum in the short run. **Thus the team foresees flat economic growth until the year 2000.**

However, the team believes that the nation still maintains a significant potentiality in achieving economic development in the long run. The strength of the nation is considered to lye in the geographical superiority, past industrial experience and well educated population. The team believes that a part of these potentialities will play a vital role in stimulating the economy around the turn of the century when some of the neighboring nations start economic recovery including Russia and others. However, the full potentiality will not be materialized in the initial stage and **only an annual average of 3% is expected in terms of economic growth between 2000 and 2005..**

In the next stage, the economic and industrial structure will fully change as a substantial inflow of foreign direct investment is expected. The team believes that the foreign investors will become more and more attracted by the country's potentialities and fiscal incentives provided to them. The type of the forthcoming industrialization is expected to be the one of rather labour intensive and export oriented. Thus the unemployment situation and industrial exports will start to be saved from this point on. Although the absolute number of labour force are expected to start to decrease, **an annual average economic growth of 5% is considered attainable from 2005 to the end the forecast horizon.**

1.2 IMPLICATIONS ON THE TRANSPORT AND RAILWAY MANAGEMENT

This economic recession has very severely hit all the transport modes including the railway transport. Both the passenger and freight sectors have been adversely affected by the nose-diving economy. The railway business was quite heavily hit by the rapidly shrinking demand as it had dominated the land transport throughout the period of centrally planned economy. On the other hand, the streamlining of the business structure

of the railway transport has lagged far behind the demand trend. The situation has urged the business into a substantial deficit in the beginning of 1990s. Eventually the state government was asked to start subsidizing the railway business.

Another blow was given to the company by the hyper inflation and the weak currency. Because the company followed a principle of semi indexed wage policy, the general price rises have continuously caused substantial increases in the most important cost item of the company. On the other hand, as the company has increasingly relied upon imports of spare parts and capital goods, devaluation of the national currency also has created a substantial cost increase pressure. However the tariff/fare rises have been able to recover the cost rises only partly for some reasons, including the limited autonomy in passenger fare setting, affordability of the customers and consideration toward competition. The lagged restructuring measures have also contributed to the financial crisis. These factors resulted in the **awful financial deterioration** in the beginning of 1990s.

The most important threat to the company by the financial crisis is the **dterioration in the assets and service quality** by the financial constraint. The railway management has long refrained from fresh investment starting from as early as 1980s. Now in the 1990s, even maintenance and replacement activities of important assets have become difficult. Under the market economy system the situation is very dangerous as the deterioration in asset quality will lead to weaker competitiveness. The company has faced not only the worsening service quality but also the worsening safety levels now.

However, if the social and economic frameworks applies and a set of appropriate measures are taken, the railway business will be able to exploit some business opportunities. The trend in the neighboring countries and Europe will create opportunities of developing **international transport**, both in the freight and the passenger sectors. The expected pattern of industrialization in the future will form a tendency of the population concentrating in and around the major cities (urbanization).The trend, coupled with the rising affordability of the people, may enable the company to focus on the **inter-city passenger transport**. On the freight side of the railway transport, the importance will shift away from the bulk transport to more diversified **combined seamless transport**.

1.3 SEVERAL IMPROVEMENT PLANS

In order to exploit the aforementioned business opportunities, the company has to achieve various improvements. It is not only the company itself to work for the goal, but also the state government has to coordinate with the company to this end. In the short run the company has to build a concrete ground for the future development. For this purpose, several improvement plans have been worked out and proposed to the company and the government.

The first and the most important one among them is the **Railway Rehabilitation Plan (RRP)** which was financed by the international financial institutions such as the World Bank, EBRD etc. The project is quite comprehensive and the proposed measures included investment project to replace some obsolete assets, financial rehabilitation, organizational reform, personnel strategy and others. The most important requirement of all was the enactment of the **BDZ Law** which stipulated the independence of the railway company and the management to be run on a commercial basis. According to the law, annual **Contract Plan** has been agreed between BDZ and the government to determine the annual amount of compensation and subsidy granted to the company. Because of the enactment of the BDZ Law, the international financial institutions have agreed to extend loans to the railway company for the projected investment.

Another important and the latest improvement project was the **Financial Recovery Plan (FRP)**. The plan mostly focuses upon the financial side of the management as the plan was ordered to be worked out in the wake of the crisis in the national financial system. The company was ordered to achieve financial improvement by the end of 1998 without depending on any further increase in external debts. The plan's proposals were almost in line with the RRP, and including the tariff/fare rises, staff and facility reductions etc.

Although a general tendency of delay is observed in implementing the recommended measures by the studies, the team assumes that all the recommended measures will have been implemented within this century as a starting point of the recommendations. On this basis the team has built a phased management improvement plan. The team's proposals aim at a financial improvement measures in the short run, a formation of the market oriented organization, financial improvement measures and investment priorities in order to strengthen the competitiveness of the company in the long run.

The team believes that some of the measures will be implemented by the railway entity alone, while some require to receive a coordinated actions by the state government. Here, however, consideration has to be paid to the general strategy of the national government that at least the newly formed coalition has clearly aimed at becoming a full member of EU, and all the transport policies will have to comply with the guidelines set by the committee.

CHAPTER 2 EUROPEAN TRANSPORT TREND

2.1 EU TRANSPORT POLICIES

2.1.1 Background

In building the development plan for the Bulgarian Railways, it is vital to make a comprehensive survey on the EU transport policies and direction as the country is required to comply with the guidelines set by the committee. This is necessary for the country not only because this is the mandatory requirement to become a full member of EU, but also because the policy direction has been built on the transport problems in the member countries which will also take place in Bulgaria when internationalization and economic development start in the country.

It is recognized among all the member states of EU that uneven competition between the road and rail transport in favor of the former mode has created several social and environmental problems, including road congestion, energy consumption and air pollution and traffic accidents. Particularly, the road congestion, coupled with the border crossing procedures, has created transport inefficiency throughout EU's territory. The situation is contrary to the spirit of the organization which aims at creating economic efficiency in Europe. In order to avoid such inefficiency and to create efficient transport system, EU has established an idea of promoting railway transport.

The organization has placed a particular importance on the long haul freight transport for the strategic market to be promoted by various measures. Eventually the organization has recognized the importance of the seamless combined transport for the future transport development.

2.1.2 Improvement Measures

In order to exploit the targeted market, EU has proposed several measures in the Council Directives 91/440, 95/18, 95/19 and other regulations. All the proposed measures are well inter related each other to promote and develop the targeted market. Broadly speaking the measures aim at achieving three fields, namely internationalization, organizational and management improvement and financial improvement.

(1) Internationalization

A freer international transport has to be secured to promote efficiency in the territory. Mutual connection or integration of the national railway systems in the individual member states is necessary to this end. Thus **open access** (right to use the railway infra structure) has to be secured by the member countries and the applicant states.

Secondly, **unified and coordinated train operation system** has to be established by the member and applicant states. The requirement includes licensing system, charging system and train path allocation system.

(2) Organizational and Management Improvement

To carry out the railway transport more efficiently, enabling the entities to offer cheaper fare/tariff to the customers, the organization and management style has to change. This is particularly true to the countries where the railway transport is provided by the national monopoly organizations.

In order to improve efficiency of the railway transport, the railway operation has to be carried out on **commercial basis** by the **organizations which are secured independent status**. On the other hand, **state responsibility** has to be established to maintain and develop the railway infra structure in order to equalize the competitive ground for both the road and rail transport.

National monopoly should be abolished and the infra structure usage will have to be open to the domestic and foreign competitors to promote **competition**. For this purpose, at least the account has to be **separated between infra structure and train operators.**

(3) Financial Improvement

Final requirement is to **improve financial viability** by reducing external debts. The restored financial viability will strengthen the railway competitiveness by allowing the railway concerns to invest for the future development.

2.2 BULGARIAN INTEGRATION PROCESS

Although it is very important for Bulgaria to integrate the national railway system with the neighboring and European nations, it is not quite feasible that the nation complies with all of these requirements immediately and simultaneously. Rather it is better advised that the nation and the railway system wil employ a phased integration and development plan to proceed the process without major repercussions. The detailed phased integration and development plan will be discussed in detail later in this chapter, but a brief idea of the team's proposal may be better understood by the illustration (Table 2-2-1).

The measures proposed by the team to be implemented in each stage include all the aspects of EU Council Directives and regulations, namely internationalization, organizational and management improvement and financial improvement.

In terms of internationalization of the Bulgarian Railways with the neighboring and European countries, it is advised the nation adopts a gradual liberalization of the national system. In the transition period until the full open access is implemented, the nation is advised to improve the existing railway infra structure by increasing the maintenance costs in order to facilitate an expanded open access and freeway in the Central and Eastern European Countries.

In order to implement open access and freeway, it is important to establish an accurate charging system for the traditional and non traditional operators. To this end, the organization is better separated between infra structure manager and train operators. The team advises, though, that the organizational separation (into autonomous divisions of infra structure, passenger operation and freight operation) is more feasible for the company in this stage, before the final (or institutional) separation to be introduced in the final stage.

On the other hand, the introduction of the railway infra structure access charge will have to be done simultaneously with the road user charge for creating equal ground for the competing land transport modes.

Financial improvement efforts will have to continue throughout the life of the management improvement plan. Every possible measure has to be sought for in order to

restore financial viability. Also the government is required to establish a concrete financial policy toward the national railway system to revitalize the activities and to strengthen the competitiveness of the railway transport. However, because of the expected financial constraint even in this period, both parties are better advised to adopt a gradual rather than a revolutionary approach in this respect.

On the investment front, the company and the government are required to prioritize the investment projects. In the transition period until 2005, the most important criteria in this regard is to reactivate the maintenance activities in order to satisfy the safety requirement. Also, some strategic project is better implemented in this period which has the vital importance for the future development of railway transport. The team suggests development of terminal for seamless combined transport.

In the final stage of the management improvement plan, the government and the company will be allowed to invest in some forward looking and strategic transport fields.

Table 2.2-1 Proposal of Integration and Development Process into European System (Reproduction of Table 4.3.2-1 in the Volume II)

	2000	2005	2020
	First Phase	**Second Phase**	**Third Phase**
EU Rail Integration system	Partially in EU →	Freeway in CEEC	Pan-Europe Integration system →
Balkan Freeway	→	→	
Bulgarian Railway	Conventional Agreement Base →	Freeway →	Integration into EU Rail system
Economic and Transport Situation			
Economic Growth (GDP)	0 % Growth →	3 % Growth →	5 % Growth
Transport Demand	Bottom	Low Intensity	High Intensity
Motorization	Low	Start increasing	High
Railway Institutional Improvement			
Integration of national system	Partial Open Access →	Expanded Open Access →	Complete Adoption of Council Directives
	Improved Existing systems for Use of Railway →		Unified/Coordinated Train System by OSS (Licensing, Charging, Train Pass Allocation)
Organisation / Management		Separation of Account and organisation →	Institutional Separation
Financial		Financial Mechanism	
Transportation System Development			
Pan-European Tranport Corridor		Combined Transport	C-4 C-8 C-9
Express Way			Sofia-Bourgas and Varna
Transport Pricing		Road User charge	

CHAPTER 3 CURRENT FINANCIAL SITUATION

3.1 FINANCIAL PERFORMANCE

The company's financial deterioration has been so serious that it has not been able to satisfy the minimum level of maintenance and replacement of important assets. The resulted deterioration in the asset quality is now, though potentially, threatening the railway competitiveness because of the worsening quality in the service and even in safety. Although the current economic situation does not allow the worsening competitiveness to materialize, the future economic development and the liberalization measures are possible to bring the potential threat into reality. The economic development will accelerate the more frequent use of the road transport, while the planned development of the national road network and the introduction of open access are able to create much keener competition both from the road transport and within the railway transport.

The published profit and loss account has revealed that the company recorded a loss in1992, and the deficit has continued since then. Although profit was registered in 1993 at the operational level, deficits have been the norm both at pre tax and final levels.

A substantial increase in the deficit took place in the year 1995 when pre tax deficit soared from 575 million Leva to 2,287 million Leva, and final deficit from 553 million Leva to 2704 million Leva. However, this sharp increase in the deficit is almost solely attributable to the change in the accounting Method. As the depreciation charging method changed from the purchased cost basis to the 1992 market price basis, the depreciation increased from 238 million Leva by 1,803 million Leva.

On the other hand, profits were reported both at operating and pre tax levels in the first half of 1997. Although a loss continued at the final level, substantial improvement in the profitability was recorded from the corresponding period and the whole of 1996. However, this improvement owes much again to the depreciation charge. A round of tariff/ fare rises to compensate for the eroded profitability caused by the then prevailing hyper inflation enabled the company to increase the net sales and total revenue during the period, while depreciation was charged against the repurchased value of the assets, though was revalued to the 1992 market value, and did not reflect the inflated market price.
Thus the ratio between revenue and depreciation lowered significantly between the first

halves of 1996 and 1997.

Many reports have proposed the company to take every possible measure in order to improve the deteriorated financial situation, including tariff/fare rises in real terms, compensation/subsidy increases by the government, business restructuring and staff reductions. The above observation does not suggest that the company and the government have paid no efforts to improve financial viability. Instead it is understood that the they have paid much attention to achieve these measures.

However, there have existed several obstacles to fully achieve the proposals. The price adjustment, particularly the passenger fare adjustment, had been required to receive authorization by the state government, while the financial constraint of the government has made it impossible to provide the company with the required amount as compensation and subsidy. The wage settlement was agreed with the unions on the basis of indexation to the general price rises. Line closure was also difficult to implement as most of the lines were constructed under the national legislation.

All the parties concerned may have recognized the importance of restoration of financial viability of the railway company, but differ on the action plan on each subject. Such disagreement and legal restrictions have created obstacles for the company and the government to implement the measures as scheduled. The result is the lagged improvement in the financial health of the company.

3.2 CROSS SUBSIDY

On of the most serious financial problems of the company is the great divergence in the profitability among the sectors. The company has tried to build a separate accounting system for passenger operation, freight operation and infra structure. The business results of the activities revealed that the freight operation is profitable, while the passenger operation has always recorded huge losses and infra structure is a cost centre. Thus the financial structure of the company is summarized that the profitable freight sector has been sharing the heavy cost burden of the infra structure and cross subsidizing the loss ridden passenger sector. The profitability of the whole railway activity depends whether the freight profit is big enough to compensate for the losses of the infra structure and the passenger operation.

Broadly speaking, freight profit has not been big enough to shoulder the all loss burdens of the other activities. In 1996, the freight profit of 7.9 billion Leva failed to cover fully the infra structure loss of 5.5 billion Leva and passenger loss of 5.3 billion Leva at the pre tax level. In the first half of 1997, the structure was almost the same, leaving the profitability of the railway activity in the red. The consolidated profits at the operational and pre tax levels were contributed by the non railway activity.

It is understood that the financial problem of the passenger operation is so serious that the activity can not become profitable even until 2020 solely by demand increase. If we compare the net sales and pre tax figures, the latter exceeded the former for both 1996 and the first half of 1997.

The team believes the structure reflects the past transport policy that over charged freight customers subsidized the passengers. In the past, this policy mix was made possible as the freight customers are mostly the state owned enterprises, while the passengers received subsidies for social consideration.

If the existing framework of the company and transport policy will continue, this financial structure may be allowed to survive. However, this will definitely not the case in the future. The introduction of open access and the development of the national road network will change the transport framework, while the proposed separation between infra structure and train operation will change the institutional framework.

Particularly the forthcoming keener competition with the other train operators and the road transport is expected to erode the profitability of the freight operation, though in the long run. The possibility is quite high as the freight customers have traditionally been over charged to subsidize the socially important passengers, and the competitors may be able to offer cheaper tariffs, or may find it cheaper to establish internal transport unit.

When this takes place and no major improvement in the financial structure has been implemented, all the three railway activities will find it difficult to survive. Otherwise, huge amount of passenger compensation and subsidy will have to be granted to the railway company. In order to avoid this dangerous scenario, it is vital for the passenger activity, especially, to improve its financial viability.

CHAPTER 4 PHASED IMPROVEMENT PLAN

This improvement plan is constructed so that the Bulgarian Railways will be able to survive in the market economy system and to contribute to the development and prosperity of the national economy. To this end, both efficiency and quality of service have to be raised to the levels prevailing in the neighboring countries and Europe.

In order to raise efficiency, it is vital to build a highly competitive transport market structure. The competition should comprise several aspects, including the one within a transport mode (railway transport), cross mode competition (railway and road), and international.

The first and the last requirements will be satisfied if the nation liberalizes the usage of the railway infra structure to the non BDZ operators, both domestic and international ones (open access). A charging system to the train operatotors will also have to be developed. The internationalization also requires the network integration with the neighboring nations and European countries.

Cross mode competition is expected to become keener when the national economy starts to develop and the national road network, particularly the motor way network, develops. Here a cautious policy has to be adopted in order not to create unfair competition environment between the modes. If the road infra structure is to be maintained and developed by the national government, the railway infra structure has to be maintained and developed by the national government. A new charging system also will have to be introduced to the road users, if the access charge is introduced to the railway system.

In order to create fair competition between the railway and road transports, another factor has to be taken into consideration. It is very important to note that the equality between the two modes will only be restored after taking into account the higher external costs of the road transport. The government is advised to avoid the higher, though hidden, transport and social costs caused by the unfair competition in favor of the road transport.

In order to carry out the railway transport in the most efficient manner, functions have to be separated and will have to be run independently. At least the separation has to be implemented between the infra structure and train operation. The team also advises the

separation between the operations which targets highly different market segments. Thus the train operation is advised to be separated into freight and passenger units both of which are run independently on the commercial basis. The more precise agreement has to be agreed between the company and the government on the passenger compensation if the passenger operation is to be run inn such a manner.

All the aforementioned measures will not be implemented solely by the railway company, rather coordinated planning and actions between the company and the government are necessary. However, the company also is required to prepare for the keener competition both within the railway and from the road transports.

The team agrees with the findings of all the management research projects on the company. Over capacity has been found in human resource, railway network and obsolete assets. The capacity level has to be adjusted to the prevailing and forecast level of railway demand in order to achieve higher productivity and efficiency.

On the other hand, the improvement in safety and quality of transport service will require much higher level of investment. This will be partly satisfied by the deeper financial commitment by the government, but the company also will have to improve its own financial capability through various measures. Aside from the commitment by the government and restructuring measures, the company is better advised to employ more aggressive pricing policies, particularly to restore financial viability of the passenger service.

The company and the government will have to prioritize the targeted markets in investing into the future of the railway transport. The team advises, in this regard to develop seamless combined transport for the freight operation and inter-city transport for the passenger business. The former has a vital importance for the development of the railway freight transport in the future, and a precise development plan has to be worked out as early as possible. The latter will be made possible with improving train speed in some of the main lines.

It is desirable if all the proposed measures are implemented immediately and simultaneously. However, legal, social and financial obstacles are expected to prevent such desired implementation of the improvement proposals. On some aspects, such an early implementation may create unnecessary disturbance in some of the parties

concerned. Also, consensus may have already formed on the importance of some measures, but is not feasible to be implemented in the early stage due to financial constraint. Thus the study team has built a **phased improvement plan of the railway management(Table 4-1).**

The period until 2020 is broadly divided into three phases mostly according to the economic development. The first phase is the period of continued economic stagnation until the year 2000, followed by the second phase of initial economic recovery between 2001 and 2005. The final phase is defined as the take off period which is continued from the year 2006 to the end of the research period. Measures will be proposed which are supposed to become possible in each phase.

Table 4-1 Phased management Improvement Plan

	Immediate	Medium Term	Long Term
RRP, FRP	Full Implementation		
National Transport Policy	Bi- and Multi-lateral Agreement for cross border transport Establishing Principles	Expanded Open Access Integration with CEEC Access Charge (Road User Charge) One Stop Shop	Full Open Access Network Integration
Organizational Reform	Preparation for Accounting Separation	Accounting and Organizational Separation	Institutional Separation
Pricing Policy	Freight Tariff Rise	Passenger Fare Rise	Cautious Policy
Maintenance and Investment	RRP Investment	Intensive Maintenance Seamless Combined Transport	Future Oriented Investment

4.1 IMMEDIATE MEASURES (1998 TO 2000)

Because of the prevailing financial constraint and still not sufficient understanding of the market economy system, not many measures will be possible to be implemented in

the immediate future. Rather, it is vital to construct a solid ground in any sense for the forthcoming development and challenges.

4.1.1 Full Implementation of RRP and FRP

The importance of **Full Implementation of RRP and FRP** has to be stressed for this period as it is supposed to lay the basis for the future development. Although the deadline for the plans have been set at 1998, there may be some delays on some of the proposed measures in the plans. However, it is very important to accomplish virtually all the important measures as early as possible.

Among the **RRP** measures, the investment projects have to be accomplished in the initial stage. This is particularly important as the investment project has stressed to restore the railway safety by replacing and upgrading some of the assets. Although a bulk of the fund for the project will be financed by the international financial institutions, some part has been agreed to be shared by the company and the government. The domestic contributors are required to pay as much as possible effort to enable the project to be implemented as early as possible.

On the other hand, the company is urged to restore financial viability also as early as possible because there are some cost increasing factors, including depreciation and interest charges resulted from the **RRP** investment project. Particularly utmost effort has to be paid to accomplish the measures to restructure the business, including the railway industry, less intensive lines and human resources.

4.1.2 National Transport Policy

For any developing nation it is vital to build a national development plan, and the same is true to the development of the transport system. Otherwise, there could arise a chaotic situation caused by uneven competition among the transport modes. The team understands that the new government has tried hard to work out such a long term development plan of the national transport system. However it appears that some of the important measures have not been discussed into detail, and a comprehensive plan including these aspects has to be established. The short term and medium term development plans, and the plan for each mode will have to be developed in accordance with the grand design.

(1) Transport Network

As one of the most important advantage of the country is its geographical location, which will rather easily create international traffic once the economic take off process starts in the neighboring nations. Thus the country is better advised to develop the national transport network to coordinate with the neighboring and European countries. In this sense the European corridor plan may give them some possible direction of the network development in the future.

However, as it is impossible to develop all the routes going through Bulgaria, the government has to prioritize the investment project. The authorities are required to define the most promising and the profitable routes. The team believes that the both the East-West and the North-South corridors have vital importance to the nation's development.

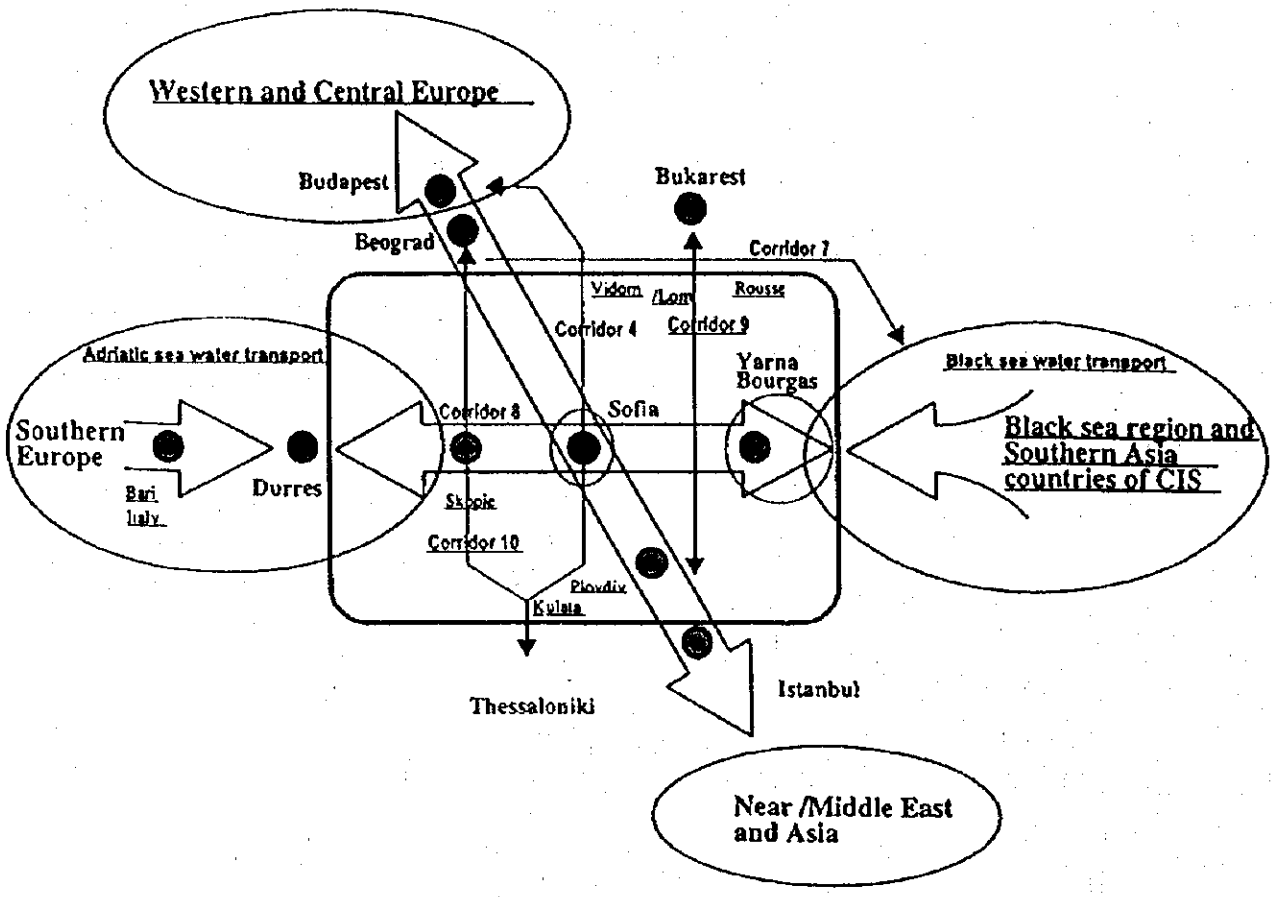

Figure 4.1.2-1 International Corridor Development (Reproduction of Figure 2.3.2-1 in Volume 2)

(2) Competition Policy

Aside from the policy on the national transport network, the government is required to build a policy framework on transport competition by modes and within the same mode. At this moment the authorities have been trying to work out hard in order to build a legal framework. The government has already drafted out several transport related laws, including the draft railway law, which they are planning to finalize the enactment process within this century. Among these draft laws, the railway law has stipulated the introduction of open access into the country.

This government effort deserves high appreciation as the laws comply with EU directives and regulations and will play important role in promoting competition in the country. However, it is also vital to establish a principle to create equal competitive ground for different modes. This is particularly important for road and railway transports as they are directly competing on the same or similar routes.

The team believes that the implementation of the competition measures will not become possible within the immediate future. Rather it takes time for the company and the government to prepare for the implementation of these measures. However it is important to establish **detailed principles of the policy frameworks to be adopted in the future.** The principles should include promotion of internal competition (within the railway operation), promotion of competition between the railway and road transports, and creating equal competitive grounds for every competitor.

1) Competition within the Railway Transport

The planned introduction of **open access** will create competition within the railway transport system. In this sense the government has rightly drafted out the railway law. However, further studies are necessary to really implement the law by determining the **access charges and separation between infra structure and operation.** The EU Directive stipulates a minimum requirement of accounting separation, but the team has concluded that **institutional separation** has to be set as the ultimate goal in the proposal.

2) Competition with the Road Transport

It is expected that the competition with the road transport will become keener in the future as the economy will start to pick up, and national road network will be developed. The team is of the view that the railway transport will have to give way to the road transport starting from 2010s.

However, the government is better advised to create equal ground for the road and railway transports for fair competition. If the railway customers are charged through access charges, the road users will have to be charged accordingly **(road user charge)**.

In setting the charge levels for the usage of land transport infra structures, the government will have to take into account the hidden costs or **external costs between the different modes**. It is commonly understood that the railway transport is much less costly once such factors are taken into consideration, and should be treated favorably compared with the road transport if the charging systems are established for both the road and the railway transports.

In creating equal ground for competing modes, the government is proposed to share the cost burden of **maintaining and investing the railway infra structure** as is the case for the road infra structure. The team believes that here lies another necessity for the currently unified railway company to separate into infra structure and railway operators.

(3) Accounting Separation

Again the team stresses that the aforementioned proposals to the government do not form a part of the list of immediate implementation. Rather, the team has proposed to build a concrete ideas immediately which will be implemented in the later stage.

However, the government and the railway company is proposed to prepare for the future implementation of the proposed measures. For the company itself, it is proposed to build a solid management accounting system **(accounting separation)** as early as possible. This is required not only for the purpose of becoming a full member of EU, but also for preparing some of the measures to be implemented in the later stages.

Once the grand design is set in the direction of institutional separation and introduction

of open access, accounting separation will serve the key function of creating basis of asset allocation to each unit, government compensation and subsidy, and revealing profitability of each unit. Management accounting will also serve to set a basis of access charge for infra structure.

As the accounting separation has such important functions, the railway company is advised to accelerate in establishing the accounting system as early as possible. Also the result will have to be agreed with the related government authorities.

(4) Pricing Policy

It is vital for the company to comply with the measures proposed to the company and the government in order to improve its financial situation. One of the important measures to this end is the pricing policy. It should be born in mind that the past major obstacle in the passenger fare setting, price control, was lifted, and the company is now free in adjusting the passenger fares.

As almost all the study papers suggested to the company, the company should take more aggressive measures in setting the tariffs and fares. Particularly important is to raise passenger fare in excess of general price rises in order to adjust the railway pricing system more balanced between the passenger and the freight transports. This adjustment will also serve to mitigate the cross subsidy financial structure from the freight side to passenger side.

However, such aggressive measure may be difficult to be pursued in the immediate future, as substantial fare rises may threaten the competitiveness of the railway passenger service. Also the shortfall of the government compensation from the state government has to be corrected as the international financial institutions have advised. Such consideration has led the team to conclude that the cross subsidy system will have to continue in the short term, and the financial crisis drawing nearer is better be solved through the still enhanced profitability of the freight sector. Thus the team proposes to raise **freight tariff by as much as 15% in the immediate future**, in the year 1998. On the other hand, it is important still for the **passenger fare to continue to rise gradually and cautiously** in order not to give way to the competing modes substantially.

4.2 MEDIUM TERM MEASURES (2001 TO 2005)

In this period, as the financial constraint is expected to continue, basically the company is advised to take cautious approach particularly on the financial side. However the economic recovery, though weak, may bring some opportunities to the railway business. The government and the company should develop some measures to exploit the business opportunities in the earlier stage. The team expects some mitigation in the financial situation will enable the company to take such measures.

4.2.1 Transport Policy

In this stage, the team proposes to implement almost all the policy measures recommended in the previous section, including open access, access charge, road user charge and integration with the neighboring and European countries. However, the team advises to take cautious approach in implementing the measures as the users and the related parties may not have been accustomed to the newly introduced system and still prevailing financial constraint throughout the economy is expected to make the full and final implementation virtually impossible.

(1) Expanded Open Access

The Bulgarian Railway system has already taken some measures of opening its infra structure to non BDZ operators on the basis of bi- and multi-lateral agreements, particularly with the Balkan countries. In this stage, somewhat more liberal approach will be taken to expand the open access system of the railway infra structure.

Adoption of the Freeway concept (opening the existing railway network) appears appropriate in this stage.

(2) Railway Integration with European Countries

The first step of the railway integration will have to be taken in this stage. However, the development of railway infra structure needs to be invested a huge amount of budget which will still difficult to be obtained in this stage either for the company or for the state government. Therefore it is better advised that the minimum requirement of the infra structure is achieved in this period.

(3) One Stop Shop (OSS)

The Freeway system will become more efficiently operated if international coordination is agreed. OSS is the system of international coordination for train path allocation, charging and billing and also monitoring and controlling performance of freeways. The train operators will become able to carry out the transport business more effectively by utilizing this international coordination system. The system is expected to be formed around the middle of the second phase.

(4) Access Charge

The introduction of open access will necessitate establishment of access charge for the train operators. Thus by the time of the introduction of open access, principles of charging system will have to be developed. The principle will have to include the equal ground with the competing road transport. The team proposes that the system has to be developed in compliance with international standard, and will have to be constructed on the basis of the most efficient infra structure management.

(4) Road User Charge

For the purpose of securing equality between the railway and the road transports, another charging system will have to be introduced simultaneously with the access charge. It is important in this aspect to take into account the external costs of the railway and the road transports. If the comparison between the two modes proves favorable for the railway operation, as are the cases for the other countries, the road user charge should be set higher than the railway access charge.

4.2.2 Seamless Combined Transport

The team believes that the direction of future transport development will gradually be taking shape during the period. As the economy is expected to recover, though at a slower pace, the potential foreign investors may show some interest in the country, and some signs of the forthcoming industrialization will be presented by the movement. The railway company, in conjunction with the state government, should try to exploit the business opportunities.

The team believes that the most promising transport field which is promising for the company is the seamless combined transport. This is not only from the observation from the European countries, but also the possibility will arise from the pattern of forthcoming industrialization which is expected to be led by the assembly type manufacturers. This industrialization will bring a shift of freight transport from bulk transport to more combined among various modes. The company and the government will have to try as hard as possible in promoting this future transport field form early stage. (Refer to Figure 4.2-1 on the next page.)

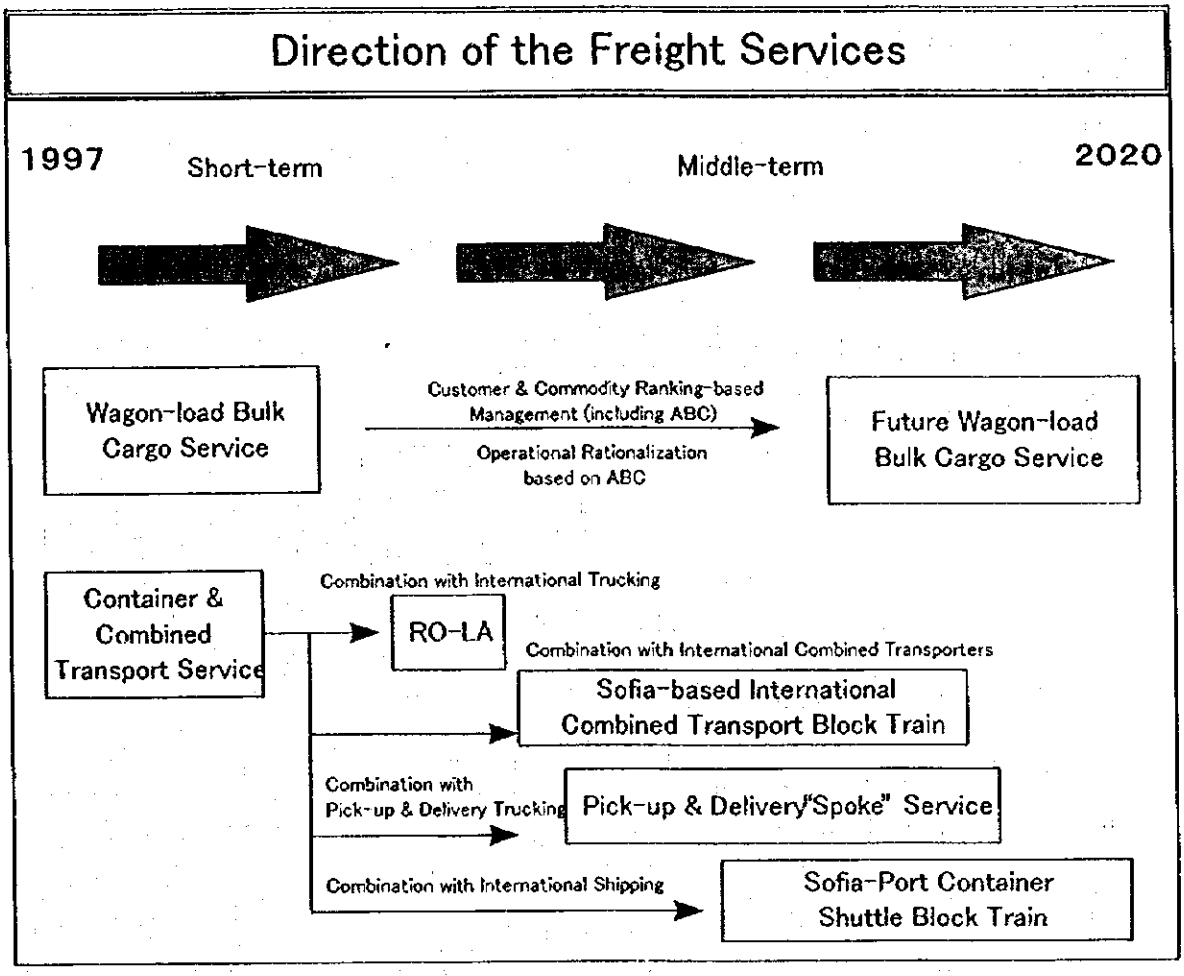

Figure 4.2-1 Direction of the Freight Service (Reproduced from Figure 7.3-9 in Volume 2)

However, the company and the government are still expected to suffer from financial constraint and self finance may still be difficult in developing the necessary facilities for promoting the important transport method even in this stage. The team advises the company to seek for every possible measure in financing the facility construction. It is expected that the somewhat better economic situation may be able to attract some foreign investors in equity participation, and **BOT or some other method of financing the project may become possible.**

4.2.3 Organizational Reform

The existing organization appears not well corresponding with the needs arising from the market economy. The more market oriented internal system has to be formed in order to maintain the strength of the company and even to exploit the opportunities.

(1) Accounting Separation

The management accounting system which was developed in the first phase will be introduced into the integrated accounting system of the company. The introduction of the **Management Information System (which includes Financial Management System)** is expected to carry out the task more efficiently.

It is advisable that the company prepares for the future organizational development within the period. An establishment of internal charging system between the infra structure and operational divisions will be experimented to prepare for the future introduction of access charge.

(2) Organizational Separation

The internal organization of the company will have to change to the more market oriented one from the existing function oriented structure. Divisions will be formed according to the market segments, namely the **passenger division, freight division and infra structure division.**

Although the company will maintain the status of unified national company carrying out railway transport business, each division will be handed over the rights and responsibilities, including improving profitability etc. To this end, each division has to be granted a high level of autonomy in carrying out their own business.

(3) Freight Marketing Policy

The existing marketing structure of the freight service has not directed toward the market and customer oriented one fully utilizing the information technology. The team proposes, in this regard, to change the marketing organization into the more market oriented equipped with the developed information system .The planned introduction of the **FIS (Freight Information System)** which forms a part of the MIS is expected to enable the company to adopt more scientific approach in the freight marketing. On the other hand, the marketing organization within the freight unit will also have to be developed from the existing cross section structure to the more market oriented one, as is suggested in the Figures 4.2-2 and 4.2-3.

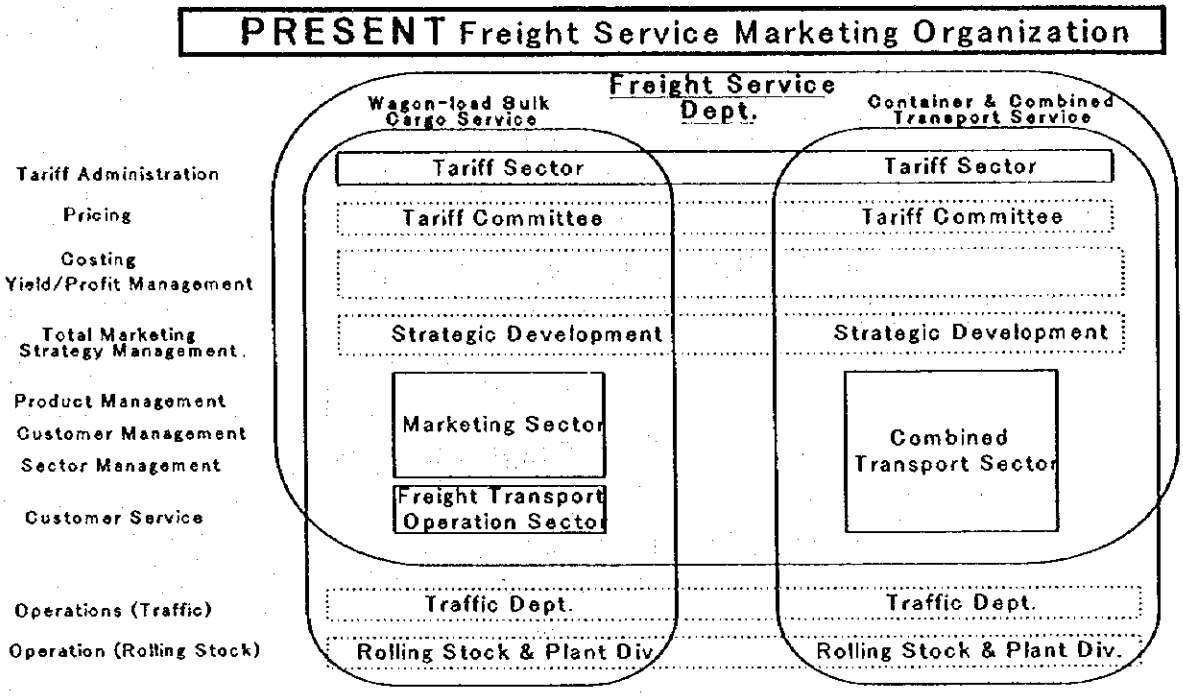

Figure 4.2-2 Present Freight Service Marketing Organization (Reproduced from Figure 7.3-17 in Volume 2)

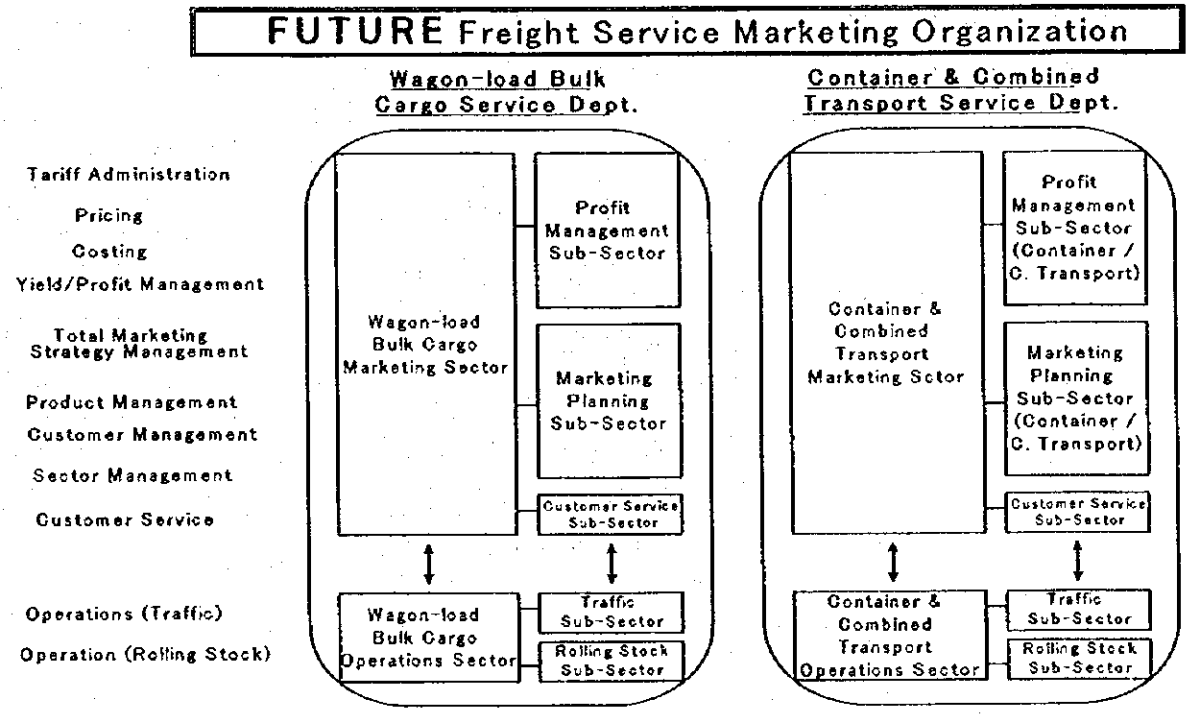

Figure 4.2-3 Future Freight Service Marketing Organization (Reproduced from Figure 7.3-18 in Volume 2)

4.2.4 Pricing Policy

As this is the period when economic development is expected to start, some change in the customers' behavior may arise. The economic development will accelerate the process of urbanization in the circumstance of the continued decrease in the absolute number of population, while the people's affordability will improve. Thus the passenger division may be able to set the strategic transport target of developing more the inter-city passenger transport.

The company may also become able to change its very cautious passenger fare policy to more service oriented policy. The passenger business will become able to sell better services at somewhat higher prices in this stage because of the expected higher affordability of the people. The team's price policy expert advises **higher passenger fare rises for consecutive 3 years between 2003 and 2005 at a rate of around 10% for each year.**

On the other hand, the freight division is advised to change the tariff policy to the more cautious one to prepare for the forthcoming keener competition both within the railway transport and from the road transport. Thus the way will have to be paved in order to achieve the more balanced profitability between the two railway operators, and minimizing the cross subsidy structure.

4.2.5 Infra Structure Maintenance and Investment

This is the period when the RRP period is over, and financial viability is to be restored as the heavy financial burden will be shouldered by the company. Particular attention has to be paid to the cash flow situation as the repayment scheme of the loans extended by the international financial institutions will start and increase year by year. Thus it could be difficult to focus upon a major fresh investment project aside from the facilities for the seamless combined transport.

Rather the company, or the infra structure division and the state government will have to focus upon the lagging maintenance and repairing activities during the period. This is a vital factor for the railway competitiveness in order to maintain or even improve the levels of services and safety.

4.2.6 Financing

However, the team's financial forecast points to the possibility that the financial improvement in this period may not be enough to finance the maintenance and the replacement activity. Thus the team proposes that some external finance should be allowed to the company in order to maintain and improve the quality of assets. The team's simulation suggests that the repayment of the loan will be rather easily done from the improving revenue in the later years of the stage and the next stage.

Another proposal by the team on the financial aspect is to reach an agreement between the government and the company on the repayment of the past debt of the company to the government. As the past debt incurs penalized interests (base rate + 10%), the company's interest burden has grown quite substantially. For the future financial development of the railway business, the company should be allowed to service the debt during the period. The team believes that the company's financial situation will become somewhat better compared with the former phase, which is expected to create some room for the past debt service. It is advised that such past debt service is better completed before the institutional separation takes place.

4.3 LONG TERM MEASURES (2006 TO 2020)

In the final stage of the management improvement plan , the economic development is forecast to start, rather than the mere economic recovery. Industrialization in true sense will start to change the economic and industrial structures. People's affordability will improve further, while transported products will increase.

However, also expected is the much keener competition from the other modes and from the other train operators. The company is advised to prepare for such development of threatening factors much before. Also the government is advised to implement all the transport measures in this period.

4.3.1 Transport Policy

The team believes that some of the measures will be affected by the timing of the nation's becoming a full member of EU. For the hypothetical assumption, the team has set the timing at around 2007 and some measures will be implemented toward this year.

Another important assumption is set at the timing of the completion of national road network. For the purpose of examining the effect of this factor upon the railway transport, the team has set the timing in the 2010s.

(1) Full Open Access

The team believes that the final stage is the best earliest timing of the full implementation of open access into the national transport system. The economic development led by export industries will have to necessitate the country to take more liberal measures on international transport for the sake of building the more efficient international transport system. Of course the national strategy of becoming a full member of EU is taken into consideration. The team proposes the exact timing of the introduction at a slightly earlier than the nation's obtaining the membership.

After the implementation of this measure, any train operator, both Bulgarian and non Bulgarian, is able to carry out the train operation business in the country, if the operator is licensed by any one of the EU member states.

(2) Network Policy

The team proposes that most of the important railway network will be completed in the earlier years of the period, probably around the year 2010. The team's idea is to develop the Pan-European Transport C-4, C-8 and C-9. The earlier development of the network linking the nation with the European countries will definitely serve the country to be integrated with them and support the economic development process.

4.3.2 Institutional Reform

(1) Institutional Separation

The final phase of the improvement plan will be highlighted by the institutional separation of the unified railway company. It is advised that the former divisions with higher level of autonomy formed in the second stage will be transformed into independent legal entities. Eventually **passenger operation company, freight operation company and infra structure manager will be created around the year 2007.**

The related laws will have to be amended in order to allow the unified national company to be separated into several independent units, and the independent train operators will become totally free from any state intervention.

Each operating entity will have to become fully independent from the state administration. They will have to set their own business plans including the annual plans and development plans. Here clear separation in the financial structure has to be established between the passenger company and freight company. The passenger company will no longer be allowed to count on the financial assistance from the freight operation. Rather it has to seek for the financial measures, while the freight company should be allowed to use the profit and excess fund for promoting its own business.

The structure among them is proposed that the infra structure manager will stay in the hand of the public sector, while the two operators will become independent: The ultimate shape of the structure is expected the operators becoming privately held, but will be held by a holding company during the period of transition. It could be possible that the operators are held fully by the infra structure manager in the initial stage of institutional separation.

(2) Arrangement with the State Government

In case of implementing institutional separation, the company (or the companies) will have to enter various agreements with the government.

1) Passenger Compensation

A detailed compensation policy has to be established and agreed between the passenger operator and the national government. First of all, the criteria of compensation has to be established, and then precise method of calculation has to be agreed upon.

This is a very vital factor for the passenger company to survive in the very competitive environment, as the team's financial forecast points to the possibility that the passenger operation alone will be difficult to reach the break even point until the end of the forecast horizon without the compensation from the state government.
Both parties are required to well recognize that the PSO is provided by the company to the government, and not to the real customers. Thus this payment from the government to the passenger operator should not be regarded as a kind of subsidy.

2) Infra Structure Maintenance and Investment

Once the transport policy is developed in the way that the infra structure of railway system belongs to the state government, basic strategy to maintain and improve the railway network belongs to the government responsibility. Not only because this is the norm widely accepted in the European countries, but also because of the necessity to promote fair competition between the road and railway transports, the state government is advised to shoulder solely the maintenance and investment financial burdens of maintaining and investing in the infra structure. The increasing tax revenue will be combined with the newly created railway open access and road user charges to finance the maintenance and investment costs. However, it is still possible that the state budget will suffer from shortage of tax revenue even in this stage. If this is the case, more realistic approach might be taken that different charging systems will become tentatively in force in order to charge the freight company more than the passenger company.

This financial system has to be implemented immediately after the institutional separation takes place. However, in the initial stage of the phase, as the government may still suffer from shortage of budget allocated for this purpose, somewhat heavier access charge might be imposed on the freight operator in order to mitigate the financial burden on the state budget.

(3) Privatization

If the institutional separation is implemented around the year 2007, privatization of freight company or passenger company or both will become possible toward the end of the forecast horizon. In fact privatization is the ultimate target of the institutional reform under the market economy system as full independence of the operators' management will be secured.

The team advises that the freight company should be privatized first as the business's financial strength is the key factor for a success of any privatization projects. Although the keener competition with the road transport and other railway operators are expected in this stage, the freight company will be able to maintain profitability and financial health. The timing of the privatization of the freight company is advised to fall toward the end of the third stage, as the affordability of the people will become sufficient for the purchase of the company's shares.

On the other hand, the passenger company may lag behind the freight counterpart in terms of privatization as the company's financial situation will only be restored to the break even point even after taking into consideration the sufficient compensation from the government. Although the financial necessity for privatization is higher in the case of passenger company as the company will have to invest more heavily than the freight company, the market will prefer the more profitable freight company first. Thus the company advises that the privatization of the passenger company will be implemented beyond the period covered by this management improvement plan.

4.3.3 Pricing Policy

Now in the final phase that keener competition is already in force and financial viability has been restored somewhat even in the case of passenger company, the two operators are advised to take more cautious approach in setting tariff/fare. Particularly in the case of freight company which has been over charging the customers for long in order to cross subsidize the passenger transport, he will have to face much severer competition. Thus for the freight company a flat price policy or even price reductions might be desirable particularly after the institutional separation, which will delink the financial connection between the two operators.

On the other hand, the team believes that there still is left some room for the passenger company to continue to employ price policy, though at a slower rate of annual increase.

What is more important in the pricing policy in the long run is to recognize the importance of the policy in marketing strategy. At this moment, the pricing policy applies uniform rate in accordance with the distance. However, the future policy has to be more flexible for both freight and passenger businesses, and should differ between the seasons, between the routes, etc.

4.3.4 Maintenance and Investment Projects

Good quality of train operation in terms of safety and on-time performance is the most significant element for management of railway industry. The team believes that the deferred maintenance for the last decade should be reinstated on a top priority, and that will serve the preparedness of efficient integration of BDZ system into the European railway system. Upon implementation of maintenance/renewal of facilities, the upgrading and strengthening of them should be taken into consideration.

Major maintenance investments include the following.

Renewal or major overhaul of rolling stock,
Replacement of turnout points and their interlocking devices, including replacement with those for higher speed as necessary,
Replacement of ballast,
Replacement of contact grids, etc.

As for investment projects in the early stage, the seamless combined transport system is to be implemented for the readiness of integration into European railway system.

In the final stage, the economic development will create opportunities and necessities for the company to invest in some strategic projects for the sake of improving competitiveness against the competing railway operators and competing modes.

(1) Line 8 (Double Track)

In order to increase the line capacity and speed of the Line 8, some single tracked sections will have to be double tracked.

(2) Higher Speed

In the final phase of the management improvement project, the passenger company is advised to try to achieve higher speed at 160 km/h between Sofia - Plovdiv. The investment project includes the separation of road and railway at some crossings, purchasing pendulum cars, replacement of existing turnout with turnouts for higher speed operation and improvement of electrical facilities.

(3) Developing Elevated Crossing

In order to separate road and railway at crossings on the Lines 1, 2, 3 and 8, the level crossings will have to be changed into elevated crossings.

(4) Electrification

The project aims at the electrification of 143 km between Kurmovo and Svilengrad of Line 1 from the viewpoint of increasing international traffic capacity as well as cutting down the operation costs.

(5) Tunneling

Construction of 2 tunnels between Sofia and Plovdiv is proposed to raise the train speed by avoiding steep curves and gradient in the mountainous regions. However, if the project proves too costly, the implementation may be postponed beyond 2020.

4.4 POSSIBILITY OF EARLIER IMPLEMENTATION

4.4.1 Preconditions of the Standard Plan

The phased management improvement plan roughly consists of four aspects listed below.

- promoting and enhancing fair competition (open access, access charge and road user charge)
- organizational reform (separation and privatization)
- financial improvement (government's financial commitment and restructuring)
- technical improvement (intensive maintenance works and some strategic investment)

Theoretically, all the measures are better implemented immediately and simultaneously for the company and nation as a whole to benefit from the new economic regime. However, several obstacles still exist and are expected to survive against the smooth implementation of the management improvement measures under the assumed conditions.

The team believes that two factors are important for the smooth introduction and implementation of the recommended measures. The factors include regaining political/social stability and economic recovery.

(1) Political/Social Stability

Regaining political/social stability forms an important basis for an economy to recover from a deep recession. This stability will help revive confidence among the people and entrepreneur toward the nation and the economy, which will then help revitalize investment and consumption activities.

Political/social stability also is expected to have some direct implication on the long term management improvement plan. As the plan includes building an overall national transport planning, its implementation will only become possible with the coordinated planning and actions between the company and the government. Fair competition policy including financial commitment to the railway infra structure by the government and even the organizational reform need to have concerted actions between them. Thus regaining political/social stability is supposed to become an important part of several preconditions.

(2) Economic Recovery

Economic recovery is obviously vital for the management improvement plan to be implemented smoothly as it will create better business performance and enable the company to cope with various management problems more easily. This factor is also expected to serve stabilization in political/economic situation of the country.

Direct implication of the economic recovery for the improvement plan is that it will create greater income among the people and enhance affordability for transportation among the people. Economic improvement will also create greater tax and other government revenue and enable the government to allocate more budget for railway transport maintenance and improvement. The better business environment for the railway company itself will eventually promote more healthier financial climate for the company. The better economic climate will enable the company to accelerate restructuring measures.

(3) Gradualism

As the standard assumption of the management improvement plan is the gradual improvement of the socio-economic frameworks of the nation toward the year 2005, the team has recommended the company and the government to adopt gradual and step by step approach. Consideration was also paid to non socio-economic factors, allowing some time for preparation for the management accounting system, introduction of the Management Information System and so forth.

4.4.2 Earlier Implementation Conceivable

However, if the socio-economic condition starts to improve immediately at a more rapid pace than the standard assumption, the company and the government might be able to or even be necessitated to implement the recommended measures earlier. Earlier and faster than assumed socio-economic improvement might affect the timing of obtaining the full membership of EU. Even without the EU factor, the substantial improvement will serve to create better environment for the company and the government to take more drastic measures than the standard plan.

The better economic condition will result in a substantial improvement in the business performance of the railway business. However even in this case, management improvement measures are necessary for various reasons including the relationship with EU. Also consideration has to be paid to the future keener competition both within the railway and with the road transport. Furthermore, no matter how substantial the financial improvement may become, the regained financial strength is expected to fall short of the huge financial requirement of infra structure.

Thus even in this case, the railway business will have to rely heavily on the financial commitment by the government. The government, on the other hand, will be able to allocate more budget expenditure for the railway infra structure because of the better than assumed tax and other revenue. But the increase in the government revenue may not be sufficient to fully shoulder the financial requirement for the railway business alone. Thus the government might be required to find other financial sources to finance the huge infra structure maintenance and investment costs.

One possible scenario here is the earlier and simultaneous introduction of the access and

road user charges. On the other hand, access charge has to be introduced together with the implementation of open access system. Open access further requires the earlier implementation of the institutional separation. Thus, the better socio-economic scenario might enable the company and the government to implement almost all the recommended measures earlier than the standard plan. The team believes that this is of course the better scenario of the management improvement of BDZ and help the government obtain EU full membership at earlier than assumed timing.

4.4.3 Restructuring to be Accelerated

However, even in this case, the company is required to pay utmost effort to restructure and modernize itself. Or even the company may be required to accelerate some of the recommended measures.

First of all, the company has to establish the management accounting system as early as possible in order to accurately reveal the profitability and financial necessity of each business segment. This is supposed to be the urgent requirement if all the important measures are implemented much earlier than the recommendation.

The restructuring measures will also have to be accelerated in order to enable the government to make full financial commitment for the infra structure. It is considered that the government should make financial contribution to the extent of true financial requirement of infra structure. In another word, the government should not compensate for the loss caused by still surviving inefficiency and excess production resources. Although it may be difficult for the company to reach the most efficient infra structure management immediately, the company has to try as much as possible to restructure itself if earlier implementation of the measures is to materialize.

CHAPTER 5 MEASURES TO BE CONTINUED THROUGHOUT THE PERIOD

5.1 HUMAN RESOURCE POLICY

As human resource is one of the most important asset of the railway company, the development of staff capability is vital to improve competitiveness through various measures of the railway activity. On the other hand, the level of staff number has to be reduced in order to achieve higher productivity.

5.1.1 Productivity and Staff Number

As is suggested in a number of reports conducted by international consultants, the team shares the view that the company's staffing level is still too high by international standard, leading to an inferior productivity. This is still the case after a couple of years of efforts to restructure the company according to RRP and other proposals.

The team proposes that the company will have to continue the staff reduction efforts even after the RRP and FRP deadline of the end of 1998, though through not aggressive measures. The staff reductions appear vital particularly when keener competition materializes with the introduction of open access and development of national road network. On the other hand, the team has set the annual reduction targets within the natural decrease, by minimizing the replacement of the retired people.

The team advises that staff reduction until 2020 will create substantial impact on the company's financial improvement as the level of employees will be able to be reduced to some 23,000 people by 2020 through the said measures. If such magnitude of reduction is achieved, the level of productivity will improve substantially, and international productivity ranking will be raised from the existing near bottom to the middle level.

5.1.2 Personal Grading and Pay System

The company is also advised to change the existing personal policy. At this moment, the company has too many personal rankings and divergence within a rank appears too small. This means a virtual lack of personal assessment system, and the system does not serve to stimulate the staff.

This obsolete personal system does not work to modernize the railway organization under the new market economy system as the company is obliged to achieve higher productivity and better service simultaneously. As the new economic system requires a smaller number of employees performing higher level of obligation, the pay system has to be built in order to motivate the employees based upon more accurate and serious personal assessment system.

5.1.3 Training Program

Under the emerging situation, the company is advised to establish a system of professional training program throughout the business field. The training program should also cover the administrative functions, such as human resource, as the market economy regime requires much higher level of professionality in each department and section. This is a vital factor for the railway activity as the human resource is one of the most important production element of the service.

5.2 MARKETING

Another important factor for the company to perform business in a truly commercial manner is the development of marketing effort. This is particularly the case for the freight operation which has long enjoyed a virtual monopoly in transporting bulk material and products consumed and produced mainly by state owned enterprises under long term contracts. Under the centrally planned economy system, this artificial transport allocation system worked quite well and the company did not have to pay attention to attract customers.

However, the company has to rebuild the freight strategy now, as such allocation system will not be able to survive and the existing over charging to cross subsidize the passenger business will become more and more threatening the price competitiveness of the freight business. Once a competitor emerges who does not have to share the financial burden of the passenger transport, it is highly possible that the company's freight tariff levels are too high.

One more factor also has to be considered that the forthcoming pattern of industrialization will be led by the assembly type of manufacturers, rather than the

existing heavy and chemical industries. Thus the past bulk transport will have to give way to another type of transport method, which can be more efficiently conduct the transport business of various assembly parts and products. The team believes the requirement will be met by developing the seamless combined transport system which is still underdeveloped in the nation.

In the new transport era, the freight business has to contact more and more smaller customers who have different request to the transport modes. The freight business has to make frequent contacts with them and build a flexible approach to attract the potential customers. The customer promotion strategy may include more flexible pricing policy.

5.3 LOW TRAFFIC DENSITY LINES

As was mentioned earlier, the team believes that the forthcoming industrialization and accompanying economic development will bring stronger trend of urbanization than before. A combination of this trend and absolute decrease in population will create forces to more intense inter-city passenger traffic and much less traffic for the already less intensively used lines. Thus the financial situation of these lines are expected to worsen further when industrialization will start.

The team has become more and more skeptical about the importance of most of these lines to be regularly operated. It is understandable that the line treatment is so complicated that the problem can not be solved in a day, as the lines are mostly constructed by laws. However, the cost recovery ratio of such lines has been already been at as low as around 25%, a level which can not be justified for commercial operation. In the future, most of such lines are expected to create less revenue, and passenger operation for such lines appears to waste of important production resources.

The team proposes a reduction of train operations on such low traffic density lines for the short and medium term, but in the long run either full closure or full compensation by the authorities will have to be agreed.

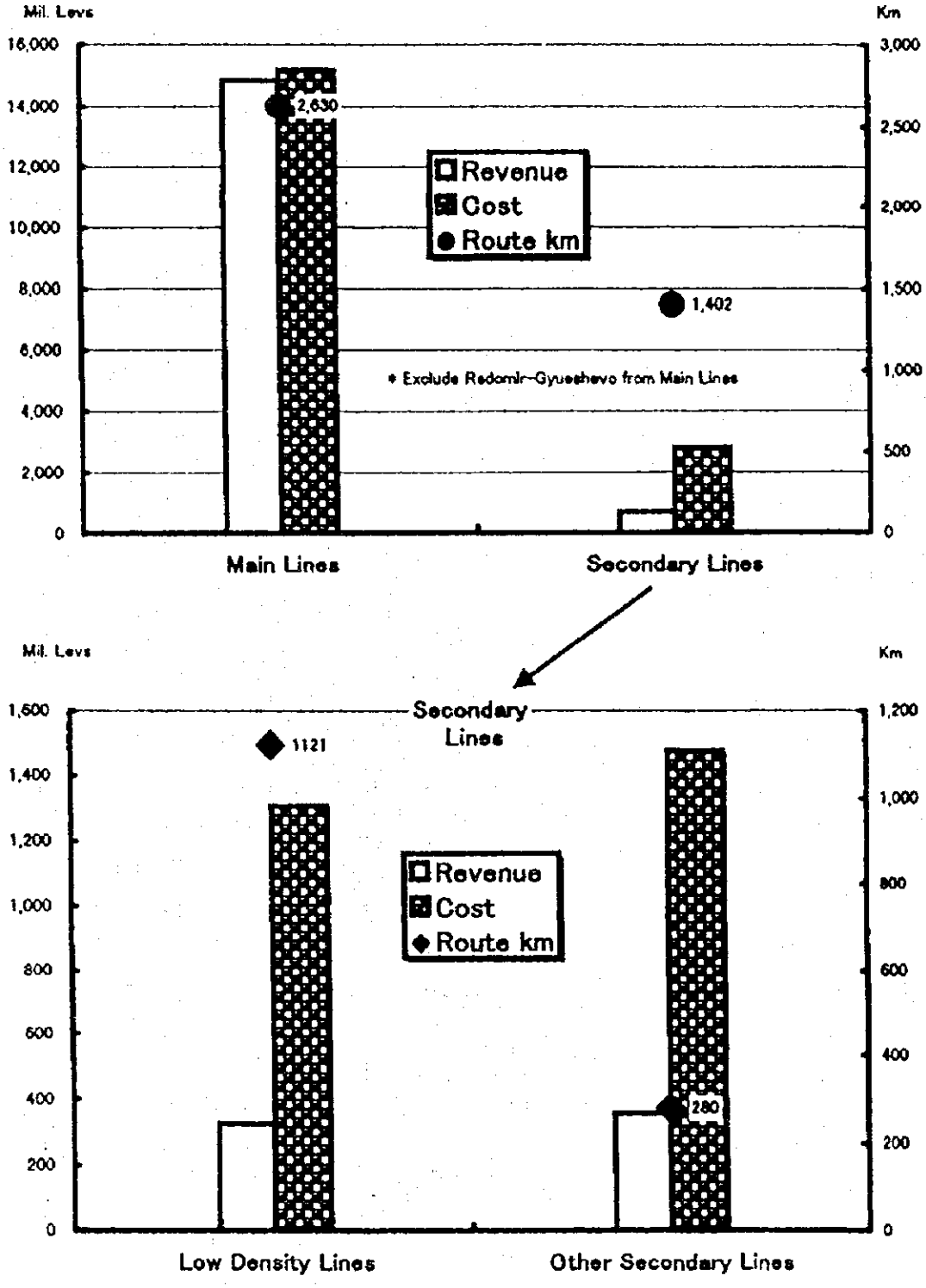

Figure 5.3-1 Positioning of Secondary and Low Density Lines (Reproduction from Figure 7.6-1 in Volume 2)

CHAPTER 6 FINANCIAL FORECAST

The company can not clearly survive if the cost increase factors in the near future are taken into consideration. The RRP investment project alone is expected to form cost increase pressure by around 44 billion Leva for depreciation, and more than 10 billion Leva for interest charge. Also some other cost items will have to increase due to the investment and construction activities.

On the other hand, the company's annual turnover will stand at around 300 billion Leva, and only the possible result is that the deficit will grow at a rapid pace if nothing is done. More importantly, the company will have to suffer from cash shortage in the near future when the planned repayment of the past debt to the National Insurance Institute (for suspended social security contribution) and loans extended by the international financial institutions. The result will be the further accumulation of external debts if possible, and eventually the shareholder's account will fall into deficit, a situation which will make the company virtually impossible to receive fresh loans from financial institutions.

Thus the team has conducted a financial forecast taking into account the financial improvement measures. The team assumes a flat rate of 1700 Leva /Dollar in foreign exchange, and the forecast result is presented in constant Leva. The RRP investment is assumed to complete as planned, and the repayment schedule will proceed with the financial plan established by the company. The base interest rate is assumed at 5.7% annually, and penalized rate is assumed to be base rate plus 10%.

Price forecast is presented by the team's expert, who proposed an immediate sharp increase in the freight tariff and gradual annual increases thereafter both in real terms. On the passenger fare side, it was proposed that the fare policy will be built on the cautious basis for some years to come, with only a few percent of annual increase. When the timing is ripe, however, rather aggressive fare policy will become possible. The team advises annual fare increase of 10% for consecutive 3years between 2003 and 2005. Again gradual increases are proposed in order not to erode competitiveness substantially. The demand forecast was also contributed by the team's expert taking into account the economic environment and price proposals. The demand forecast also took into consideration the keener competition beyond the year 2015.

Financial Forecast BDZ as a unified company

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Net Sales	257,700	313,700	317,200	320,800	324,700	328,600	337,000	346,200	356,400	376,400	392,800	410,500
(Passenger)	39,800	49,300	51,700	54,200	56,800	59,600	66,700	74,700	83,700	81,200	78,900	76,600
(Freight)	188,000	234,900	236,000	237,100	238,200	239,300	240,500	241,600	242,700	264,900	283,500	303,300
Subsidy	35,000	43,000	43,000	43,000	43,800	44,500	45,300	46,100	47,000	43,300	44,900	46,500
(Passenger)	25,000	25,000	25,000	25,000	25,800	26,500	27,300	26,100	29,000	30,400	32,000	33,600
(Infra Structure)	10,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	12,900	12,900	12,900
Total Revenue	322,900	401,700	395,200	388,800	388,800	398,200	407,300	428,400	439,400	462,200	487,700	516,100
Operating Cost	322,200	397,800	401,200	392,300	391,300	391,900	389,200	393,000	392,000	410,700	429,900	461,800
(Labour Cost)	145,800	157,600	148,000	146,100	144,100	142,200	140,000	138,300	136,300	135,500	134,600	133,700
(Depreciation)	2,300	26,000	46,000	46,000	46,000	47,500	49,000	50,400	51,800	53,100	55,500	59,900
(Fuel, Electricity)	74,600	73,700	76,700	76,700	77,700	78,700	79,700	80,700	80,400	80,200	79,700	79,400
Operating Profit	700	3,900	-6,000	-3,500	-2,500	6,300	18,100	35,400	47,400	51,500	57,800	54,300
Financial Cost	1,100	9,700	17,300	19,900	20,500	21,400	22,300	22,700	22,000	20,600	20,500	20,200
Pre Tax Profit	-400	-5,800	-23,300	-23,400	-23,000	-15,100	-4,200	12,700	25,400	30,900	37,300	34,100

BDZ as a unified company

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net Sales	429,700	450,500	448,700	446,900	445,200	443,600	442,000	432,500	423,200	414,300	405,600	397,200
(Passenger)	74,400	72,200	73,700	75,200	76,700	78,200	79,800	80,100	80,500	80,900	81,300	81,700
(Freight)	324,500	347,300	343,800	340,400	336,900	333,600	330,200	320,300	310,700	301,400	292,400	283,600
Subsidy	48,100	49,900	74,000	76,000	78,000	80,200	82,400	84,800	87,200	89,900	92,600	95,500
(Passenger)	35,200	37,000	38,800	40,800	42,800	45,000	47,200	49,600	52,000	54,700	57,400	60,300
(Infra Structure)	12,900	12,900	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200
Total Revenue	547,600	582,600	619,700	637,400	658,300	683,100	712,500	667,700	630,900	604,100	598,200	592,700
Operating Cost	493,600	531,400	574,100	623,100	680,300	746,900	823,400	723,300	643,500	571,800	568,300	564,600
(Labour Cost)	132,100	132,000	130,600	129,300	127,900	126,600	125,200	122,500	119,800	117,100	114,300	111,600
(Depreciation)	64,200	68,200	72,100	75,400	79,000	82,500	84,900	87,700	91,000	94,100	95,300	96,000
(Fuel, Electricity)	79,200	78,800	78,800	78,800	78,800	78,800	78,800	76,900	74,900	73,100	71,200	69,500
Operating Profit	54,000	51,200	45,600	14,300	-22,000	-63,800	-110,900	-55,600	-12,600	32,300	29,900	28,100
Financial Cost	19,800	19,500	19,700	20,300	19,400	24,300	36,800	51,700	67,200	78,300	86,000	95,300
Pre Tax Profit	34,200	31,700	25,900	-6,000	-41,400	-88,100	-147,700	-107,300	-79,800	-46,000	-56,100	-67,200

Financial Forecast
(Passenger)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Net Sales	39,800	49,300	51,700	54,200	56,800	59,600	66,700	74,700	83,700	81,300	78,900	76,600
Compensation	25,000	25,000	25,000	25,000	25,800	26,500	27,300	28,100	29,000	30,400	32,000	33,600
Total Revenue	67,400	77,300	79,700	82,200	85,600	89,100	97,000	105,900	115,700	114,700	113,900	113,000
Operating Cost	98,400	118,500	118,600	117,100	117,400	118,700	123,100	123,900	124,000	123,100	122,900	122,600
(Labour Cost)	45,000	48,900	45,900	45,300	44,700	44,100	43,400	42,800	41,400	41,200	40,900	40,600
(Depreciation)	500	5,300	9,400	9,400	9,400	10,400	11,400	12,300	13,200	14,000	15,500	16,900
(Fuel, Electricity)	23,700	27,200	27,700	28,200	28,700	29,300	29,800	30,300	30,900	29,400	28,000	26,600
(Other)	29,200	37,100	35,600	34,200	34,600	34,900	33,500	33,500	33,500	33,500	33,500	33,500
(Access Charge)	0	0	0	0	0	0	5,000	5,000	5,000	5,000	5,000	5,000
Operating Profit	-31,000	-41,200	-38,900	-34,900	-31,800	-29,600	-26,100	-18,000	-8,300	-8,400	-9,000	-9,600
Financial Cost	1,600	4,300	7,700	8,800	9,100	9,500	9,800	10,000	9,700	9,100	8,600	8,700
Pre Tax Profit	-32,600	-45,500	-46,600	-43,700	-40,900	-39,100	-35,900	-28,000	-18,000	-17,500	-17,600	-18,300

(Freight)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Net Sales	188,000	234,900	236,000	237,100	238,200	239,300	240,500	241,600	242,700	264,900	283,500	303,300
Compensation	0	0	0	0	0	0	0	0	0	0	0	0
Total Revenue	191,900	238,800	239,900	241,000	242,100	243,200	244,400	245,500	246,600	268,800	287,400	307,200
Operating Cost	113,300	135,600	137,500	134,800	133,500	132,200	156,100	154,900	153,700	159,700	166,000	172,900
(Labour Cost)	49,200	54,300	53,600	52,900	52,200	51,500	50,900	50,200	49,600	49,300	49,000	48,700
(Depreciation)	600	6,300	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,500	11,900
(Fuel, Electricity)	34,600	38,400	37,800	37,300	36,700	36,100	35,600	35,100	34,500	37,000	39,600	42,300
(Other)	28,900	36,600	35,000	33,500	33,500	33,500	33,500	33,500	33,500	33,500	40,900	45,000
(Access Charge)							25,000	25,000	25,000	25,000	25,000	25,000
Operating Profit	78,600	103,200	102,400	106,200	108,600	111,000	88,300	90,600	92,900	109,100	121,400	134,300
Financial Cost	4,600	4,600	8,000	9,100	9,400	9,800	10,300	10,400	10,100	9,400	9,000	9,100
Pre Tax Profit	74,000	98,600	94,400	97,100	99,200	101,200	78,000	80,200	82,800	99,700	112,400	125,200

(Infra Structure)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Access Charge	0	0	0	0	0	0	30,000	30,000	30,000	30,000	30,000	30,000
Compensation	10,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	12,900	12,900	12,900
Total Revenue	10,000	18,000	18,000	18,000	18,000	18,000	48,000	48,000	48,000	42,900	42,900	42,900
Operating Cost	62,400	81,000	86,800	85,500	85,600	85,700	85,800	85,900	86,000	84,300	90,000	96,000
(Labour Cost)	36,200	34,400	32,300	31,900	31,500	31,100	30,700	30,300	29,900	29,700	29,500	29,400
(Depreciation)	1,100	12,400	21,900	21,900	21,900	22,400	22,900	23,400	23,900	24,400	24,900	27,500
(Fuel, Electricity)	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
(Other)	23,300	32,400	30,800	29,900	30,400	30,400	30,400	30,400	30,400	28,400	33,800	37,300
Operating Profit	-52,400	-63,000	-68,800	-67,500	-67,600	-67,700	-37,800	-37,900	-38,000	-41,400	-47,100	-53,100
Financial Cost	0	0	0	0	0	0	0	0	0	0	0	0
Pre Tax Profit	-52,400	-63,000	-68,800	-67,500	-67,600	-67,700	-37,800	-37,900	-38,000	-41,400	-47,100	-53,100

Financial Forecast
(Passenger)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net Sales	74,400	72,200	73,700	75,200	76,700	78,200	79,800	80,100	80,500	80,900	81,300	81,700
Compensation	35,200	37,000	38,800	40,800	42,800	45,000	47,200	49,600	52,000	54,700	57,400	60,300
Total Revenue	112,600	112,200	115,500	118,900	122,500	126,200	130,000	132,700	135,600	138,500	141,700	144,900
Operating Cost	122,300	123,300	125,600	127,000	128,400	129,800	132,000	132,300	133,200	133,900	132,800	131,400
(Labour Cost)	40,100	40,100	39,700	39,300	38,900	38,500	38,100	37,300	36,500	35,700	34,800	34,000
(Depreciation)	18,300	19,600	20,800	21,100	21,400	21,700	22,800	24,300	26,300	28,200	28,200	28,200
(Fuel, Electricity)	25,400	24,100	24,600	25,100	25,600	26,100	26,600	26,200	25,900	25,500	25,100	24,700
(Other)	33,500	34,500	35,500	36,500	37,500	38,500	39,500	39,500	39,500	39,500	39,500	39,500
(Access Charge)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Operating Profit	-9,700	-11,100	-10,100	-8,100	-5,900	-3,600	-2,000	400	2,400	4,600	9,100	13,500
Financial Cost	8,800	9,100	9,400	10,200	11,000	11,400	13,300	14,400	16,800	19,500	22,700	26,300
Pre Tax Profit	-18,500	-20,200	-19,500	-18,300	-16,900	-15,000	-15,300	-14,000	-14,400	-14,900	-13,600	-12,800

(Freight)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net Sales	324,500	347,300	343,800	340,400	336,900	333,600	330,200	320,300	310,700	301,400	292,400	283,600
Compensation	0	0	0	0	0	0	0	0	0	0	0	0
Total Revenue	328,400	347,700	347,700	344,300	340,800	337,500	334,100	324,200	314,600	305,300	296,300	287,500
Operating Cost	190,300	188,500	190,800	193,400	196,200	196,800	201,800	175,000	173,300	171,600	170,000	168,400
(Labour Cost)	48,400	48,100	47,600	47,100	46,700	46,200	45,700	44,700	43,800	42,900	42,100	41,200
(Depreciation)	12,300	12,600	12,900	14,300	14,300	14,900	15,500	16,100	16,700	17,200	17,700	18,200
(Fuel, Electricity)	45,300	46,500	48,000	47,500	47,000	46,500	46,100	44,700	43,400	42,100	40,800	39,600
(Other)	49,000	54,300	57,300	59,500	63,200	66,200	69,500	44,500	44,400	44,400	44,400	44,400
(Access Charge)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Operating Profit	148,100	159,200	156,900	150,900	144,600	138,700	132,300	149,200	141,300	133,700	126,300	119,100
Financial Cost	9,200	9,500	9,800	10,600	11,500	11,900	13,900	15,100	17,600	20,400	23,700	27,500
Pre Tax Profit	138,900	149,700	147,100	140,300	133,100	126,800	118,400	134,100	123,700	113,300	102,600	91,600

(Infra Structure)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Access Charge	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Compensation	12,900	12,900	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200
Total Revenue	42,900	42,900	65,200	65,200	65,200	65,200	65,200	65,200	65,200	65,200	65,200	65,200
Operating Cost	102,200	108,800	132,800	135,100	137,400	137,900	138,300	138,400	138,500	138,600	138,200	137,700
(Labour Cost)	29,200	29,000	28,700	28,400	28,100	27,900	27,600	27,000	26,400	25,800	25,200	24,700
(Depreciation)	30,000	32,400	34,800	37,100	39,700	42,300	43,000	43,700	44,400	45,100	45,800	46,000
(Fuel, Electricity)	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
(Other)	41,200	45,600	67,500	67,800	67,800	65,900	65,900	65,900	65,900	65,900	65,400	65,200
Operating Profit	-59,300	-65,900	-67,600	-69,900	-72,200	-72,700	-73,100	-73,200	-73,300	-73,400	-73,000	-72,500
Financial Cost	0	0	0	0	0	0	0	0	0	0	0	0
Pre Tax Profit	-59,300	-65,900	-67,600	-69,900	-72,200	-72,700	-73,100	-73,200	-73,300	-73,400	-73,000	-72,500

The agreement with the government is assumed to be made that the passenger compensation will fluctuate according with the real economic growth rate, while the government financial commitment will be determined by the maintenance cost and investment before the institutional separation, and full cost (full cost less access charge) and investment.

Upon these price proposals and demand forecast, and also the tentative financial forecast, the team's human resource expert created a personnel and payment plan. The proposal comprises two major elements, a continued reduction in staff number throughout the planned period, and a pay scheme that a part of productivity gain will be reflected in the pay level.

Also it was assumed that the infra structure and other asset maintenance and replacement will be conducted as proposed by the team's experts. In the third phase of the improvement plan, fresh investment projects are taken into consideration.

6.1 SHORT AND MEDIUM TERM FORECAST

Under the aforementioned frameworks, the unified railway company may be able to reach around break even point in as early as 2001 at the operational level. However, because of the sharp increase in the interest payment, the improvement at pre tax level will become only possible around 2004. The continued restructuring measures, coupled with the tariff/fare adjustments, particularly the immediate freight tariff rise and passenger fare rises between 2003 and 2005, are expected to contribute the financial improvement.

However, in the short run, the profitability will hardly be restored because of the rapid cost increase caused by the RRP investment projects. Aside from te continued effort of business restructuring, the company should carefully plan the cash flow situation during the period.

Another important factor appears the financial viability of the passenger sector. A vital factor for the unified company in terms of financial strength is the restoration of financial health of the passenger sector. The team's proposal of rather aggressive passenger fare policy is reflected in the overall financial situation after the year 2003.

Thus as long as the company takes the form of a one unified company, financial improvement of the passenger sector plays an important role.

Although the development of combined seamless transport system is proposed around the year 2003, the development project is assumed to be implemented jointly with foreign interests in the form of BOT (Build, Operate and Transfer) and no substantial cost increase is forecast from the implementation of the project.

Another important factor appears the financial viability of the passenger sector. A vital factor for the unified company in terms of financial strength is the restoration of financial health of the passenger sector. The team's proposal of rather aggressive passenger fare policy is reflected in the overall financial situation after the year 2003. Thus as long as the company takes the form of a one unified company, financial improvement of the passenger sector plays an important role.

The open access and access charging system are assumed to start from 2003. During the initial stage before institutional separation takes place, the system will virtually function as internal transfer. Here, the charge is assumed to be based upon SRAC of infra-structure cost, and flat rates of 25 billion Leva for freight and 5billion Leva for passenger are applied.

6.2 LONG TERM FORECAST

In the long run, however, the company may find it difficult to survive in the very competitive environment if the existing institutional framework continues. The financial forecast illustrates that another turnaround will be resulted in the profitability from the keener competition and increasing interest burden. This is also the case even if the restructuring measures have become effective. It may be possible in theory that maintenance and fresh investment projects will be suspended in order to restore financial viability, but these tightening measures appear dangerous as they may weaken the railway's competitiveness.

Thus the financial forecast suggests the necessity that institutional separation is implemented and rights and obligations of each business unit and the government are clearly established. Of particular importance in this regard is to establish the principle

of full financial commitment to the infra structure by the government for maintenance and development. It is proposed that the government will bear all the maintenance cost, investment and fresh development investment of railway infra structure. If the agreement is reached, the freight company will be able to maintain profitability, and passenger company is expected to restore profitability in the year 2016 at the operational level.

If such a situation emerges, the freight company will be able to utilize the cash flow for its business development, such as further business development projects like combined seamless transport and Freight Information System. The passenger company may still suffer from negative results at the final level. In this case, it is advisable to reduce the financial burden before the institutional separation by arranging repayment of the past debt other than the social security contribution.

6.3 GOVERNMENT COMMITMENT

The heavy commitment by the government has to be pursued in order to compensate for the much less commitment in the past. The prevailing under maintenance situation is of course attributable to the financial constraint of the railway business, but is to some extent a result of the under commitment by the government.

It has to be stressed that the most important railway strategy in the immediate future should be the maintenance activity which has far lagged behind during the past couple of years. The table shows the required amount of maintenance cost and investment. Intensive maintenance and replacement activities are advised by the team's experts right after the RRP investment project. This will enable the substantial decrease in investment after the tear 2011. On the other hand, the increased maintenance cost beyond 2011 is a result of the strategic investment starting from the beginning of the final stage.

Table6.3-1 Railway Infra Structure Maintenance

(Annual Average, Million Leva)

	2001-2005	2006-2010	2011-2015	2016-2020
Cost	18,020.0	12,920.0	35,190.0	35,190.0
Deficit Finance	0.0	56,300.0	71,100.0	73,100.0
Investment	39,551.7	39,551.7	9,121.7	9,121.7
Total	57,571.7	108,771.7	115,411.7	117,411.7

Note) Deficit Finance in 2006-2010 is the annual average of 2007-2010.

Table Railway Infra Structure Development Project

Table Railway Infra Structure Development Project

(Annual Average, Million Leva)

	2005	2006	2007	2008	2009	2010	2011
Double Track	72,420	72,420	72,420	72,420	72,420	72,420	72,420
Elevated crossing (Line-1)							3,060
Safety and others							
Elevated crossing						7,650	7,650
Electrification							
Total	72,420	72,420	72,420	72,420	72,420	80,070	83,130

	2012	2013	2014	2015	2016	2017	2018
Double Track							
Elevated crossing (Line-1)	3,060	3,060					
Safety and others	1,700	1,700	1,700	1,700	1,700		
Elevated crossing	7,650	7,650	7,650	7,650	7,650	7,650	7,650
Electrification	8,500	10,200	14,110	14,110	14,110		
Total	20,910	22,410	23,460	23,460	23,460	7,650	7,650

	2019	2020					
Double Track							
Elevated crossing (Line-1)							
Safety and others							
Elevated crossing	7,650	8160					
Electrification							
Total	7,650	8,160					

In addition to the maintenance cost, the government will be obliged to commit to the development finance of the railway infra structure. The team believes that still much has to be done in this regard to improve the quality of railway transport service. The more frequent railway traffic in the future will necessitate the railway transport to be carried out more efficiently, particularly along the main lines. Thus the relatively cheaper ways of achieving this target are advised, including the double track, the conversion of level crossings to elevated crossings and electrification of some sections of strategic lines.

In the initial stage until 2004, the intensive maintenance activity will require the

government to commit more heavily than in 1990s. The maintenance cost in this period is estimated at some 57billion Leva, compared with the total of infra structure maintenance subsidy and capital investment at 16 billion in 1997. Although the economy is expected to recover from the existing recession and some increase in tax revenue will become possible in this stage, the increased government affordability may not be enough to cover all the financial burden to maintain the asset quality of the railway infra structure. This is why the introduction of railway access charge is required to be implemented in the earlier stage.

The financial arrangement is also made in order to allocate a part of the newly introduced road user charge to the railway infra structure maintenance and development to compensate for the possible shortfall of the government financial commitment.