



MARKETING THE RAILWAY PRODUCT IN THE ASIA AND PACIFIC REGION

*Guidelines for development of a marketing culture, systems
and practices in the railway systems of the region*



UNITED NATIONS

1. PREFACE

Railway organizations worldwide have traditionally evolved as vertically integrated transport operating enterprises under public ownership and control. To the extent that they have been sheltered from competition by government regulatory controls, they have been able to grow to dominant positions in the domestic transportation activity of many countries, both within and outside of the Asia-Pacific region.

However, over the post-Second World War era, and especially over the past two decades, rail dominance of domestic transport has been challenged by the dynamic growth of road networks and of commercial motor vehicle fleets. This growth has been assisted by the often rapid dismantling of government regulatory controls, as well as by the commitment of a major and increasing share of public infrastructure development funds to the development of highway networks, without a commensurate increase in direct road user charges to offset these public outlays.

Now, more than ever before in their long history, railways are facing two major threats to their long term survival: the progressive withdrawal of the government funding which has been necessary in the past to sustain railway infrastructure and services, and the relentless increase in competition from other transport modes, especially from road transport which has been assisted by the abovementioned factors.

The first of these threats, the withdrawal of government funding assistance, must and should be combatted by more effective lobbying of governments by railway managements. The second threat, however, can only partly be countered by more effective lobbying.

Public support of road transport at the expense of rail transport development has usually been justified on the basis of the greater flexibility of the road transport mode. Competition from this source cannot therefore be expected to reduce in intensity for the foreseeable future, and will only be effectively counteracted if rail can offer a standard of service which at the same time satisfies the needs of customers and is superior to that on offer from its competitors. Clearly this provides rail with a substantial challenge. It will require a major change in the outlook of railway managements and in the *culture* of railway organizations. Henceforth, the activities of railway managements will have to be directed at: identifying, understanding and responding to the needs of their existing and potential customers; identifying and understanding the cost causation and profit potential associated with individual traffics or market segments; and bringing about the organizational change which will ensure that railways will satisfy new commercial goals.

These guidelines are intended to assist the railway organizations of the region to set up the systems and procedures necessary for them to be able to function as commercially vibrant, market-led organizations. However, the mere setting up of systems and procedures will not of itself ensure success. Success will only follow if the right attitudes are developed and promoted throughout the organization, starting at the very top with the Chief Executive and extending down to the lowest operative staff levels. *All* units of the organization must become and remain **customer aware**, and their activities must be harmonized and coordinated with the satisfaction of customers as the fundamental objective.

The following chapters contain: a definition of marketing; an explanation of the specific importance of marketing to railways; an appraisal of the place of marketing in the railway organization and of the relationship of marketing to railway corporate planning processes; specifications for the railway marketing plan, railway marketing management organization and functions and the marketing information system; and a description of railway traffic costing concepts and principles as they relate to marketing.

2. WHAT IS MARKETING?

2.1 Definition

Business education literature abounds in definitions, but few, if any, of the more popular definitions of **marketing** offer any practical insight into what the concept might mean in the business environments to which it is to be applied. One such popular definition of marketing is that advanced by Philip Kotler, a well known authority on the subject. His definition is that marketing is:

A social and managerial process by which individuals and groups obtain what they want and need through creating, offering, and exchanging products of value with others¹

This is a very broad definition, intended to apply to all commercial activities found in an economy, regardless of their nature and differences. Nevertheless, the very existence of such differences is likely to require fundamentally different approaches to all management functions, including marketing.

Railways are a service industry, hence the railway employees responsible for delivery of service are conspicuous to users and indeed are directly accountable to users for service quality. In this sense, they differ for example from manufacturing industries, where those responsible for creation of the product are usually not visible to consumers and where there is a clear distinction between production and marketing activities. For railways, as with most service industries, the production and marketing of the product (which in this case is actually a service, or services) are practically inseparable. Inevitably, a much higher proportion of the workforce in service industries will be engaged in what might be termed “marketing related activities”, than will be the case in manufacturing industries. The marketing management function in railway organizations is therefore likely to have a primary role of leading the planning, mobilization and application of the organization’s resources - human, physical and financial - for the achievement of corporate goals.

Nevertheless, marketing in the railway environment will have the same essential focus on the twin key issues of **customer satisfaction** and **profitability** as has marketing in any other environment. Thus, the main aim of marketing in any environment will be to reconcile the needs of customers for a minimum quality and quantity of product or service with the need for the producer or service provider for profit. This does **not** mean, however, that it will be in the best interests of the organization to satisfy the needs of **all** customers, all of the time.

¹ P Kotler, *Marketing Management, Analysis, Planning, Implementation and Control*, 8th ed.(Prentice Hall, 1994), p.6.

There will inevitably be some customers whose business will not be profitable for the organization. The role of marketing in such circumstances will be to determine and implement measures to improve the net worth of that business to the organization, and failing this, to implement a plan for withdrawal from the business. It should be noted that such an approach contrasts with the still popular misconception that marketing is all about sales maximization. While a sales maximizing strategy usually leads to increased revenue, it could also mean reduced profit for the organization. Thus, marketing is not always about sales maximization; it is, however, ***always*** about profit maximization, or loss minimization, as the case may be.

Taking into account the special characteristics of railways, “***marketing***” in a railway environment can be defined as:

A method and process for planning, mobilizing and applying the resources of the railway in order to satisfy customer demand and to realize a profit for the railway

2.2 The “Marketing Mix”, or the Seven P’s

There is still a popular misconception that the term “marketing” is interchangeable with “sales” and “advertising”. That is only partly true. In fact, marketing includes the full range of activities needed to achieve voluntary and ***profitable*** exchanges of products or services between two parties.

These activities are aimed at changing one or more of four variables known as the ***Marketing Mix***, with the intention of improving the organization’s profitability. These variables, also known as the ***Seven P’s***, are Product, Price, Promotion, Place, People, Processes and Physical Evidence. It is useful to describe each of these variables in terms of their meaning in a *railway marketing* environment.

2.2.1 Product

For railways, this is the service offered to customers, both existing and prospective. However, the term also implies some notion of the ***attributes*** of a service - its basic design, or its essential features; its presentation, or how it is packaged; its associated support level (which is usually related to the capacity of the organization to deliver an acceptable standard of support for the product, or service); and its branding, or its association with a particular image or identity.

The core products of railway organizations are ***transportation services***, but increasingly railway organizations are diversifying their activities in fields which are not wholly related to their core business, such as commercial property, or real estate, development. The product descriptions covered here are, however, related to the core business of railways, since it is these core businesses which in the past have suffered most

from the absence of systematic marketing techniques and which in the future stand to benefit most from their application.

For a railway passenger service, the design and presentation characteristics of the product are generally: the route covered; the service frequency; the achieved transit time (or interval between departure and arrival); the carriage seating standard and configuration; the decor, cleanliness and riding comfort of the rolling stock; the nature and standard of meals provided enroute; the comfort, cleanliness and convenience of station or terminal facilities; and the convenience of connections with other rail services or with other transport modes.

For a railway freight service, the design and presentation characteristics of the product are generally: the route covered; the service frequency; the operational reliability of the service (e.g. adherence to scheduled transit time, etc); the security provided for consignments (e.g. against pilferage and damage); the convenience and efficiency of loading/unloading facilities at rail freight terminals; and the availability of a convenient delivery service to the final destination (i.e. door-door delivery service).

2.2.2 Price

This denotes the published or negotiated value of the exchange transaction for a product or service. It should be noted that price must represent value to both parties - to the producer or service provider in terms of the profit margin yielded and to customers in terms of the value for money derived from consumption of the commodity or service.

For a railway passenger service, the price of the service, or the fare, paid by passengers is usually graduated by distance - the longer the distance travelled, the lower the charge per kilometre - although often the charges are broadbanded within intervals of distance, e.g. one charge for 0-30 km; another (lesser) charge for 31-70 km, and so on. In addition, fare rates usually vary with the standard of service used - for example, a first class seat might cost more than double a third class seat, while a deluxe sleeping berth might cost fifty per cent more than a deluxe seat, etc.

In some cases, governments control the maximum level of fares charged for different categories of service, while railway organizations have the ability to discount fares below these maximae, in order to generate more business or to modify demand in some way, e.g. by transferring demand from heavy to light traffic periods. Discounts may be provided for: ticket bulk purchases (e.g. weekly, monthly, yearly tickets); off-peak travel (time of day or seasonal); group travel and tours; student/old age pensioner/other pensioner travel. In a small number of cases, railway organizations have the ability both to adjust the maximum level of passenger fares and to offer discounts off these fares.

For a railway freight service, the price or tariff to be paid by customers for the transport of their consignments is usually expressed as a rate per tonne-km, although freight tariffs can also include charges for other services rendered by the railway, such as the loading/unloading of freight consignments, in which case the charging unit will be different, e.g. tonnes loaded or unloaded. In common with passenger charges, unit freight rates usually decline with the increase of distance, but as in the case of passenger charges may also be broadbanded within distance intervals.

Unlike passenger tariffs, which are almost without exception published charges, freight charges may be either published or negotiated rates. If they are published rates, they will generally appear in the railway organization's standard schedule of charges, and will be available to all customers. If they are the result of a process of commercial negotiations between the railway organization and individual customers, or groups of customers, they will generally be incorporated in long term haulage contracts between the two parties, and will not generally be disclosed to other parties. By definition, negotiated rates will be available only to the contracting customers, subject to their agreeing to meet certain other contractual conditions.

Freight tariffs are less likely to be subject to control by government than passenger tariffs, yet government imposed ceilings on published freight tariffs are not uncommon throughout the region. In most cases, railway organizations have the ability to offer discounts off the level of freight tariffs in order to expand business, and in a majority of cases they also have the ability to increase the level of freight tariffs in order to recover cost increases.

2.2.3 Promotion

This is the result of all activities aimed at enhancing customer awareness of, and stimulating demand for, products or services. Typically, these activities include: advertising in all of its forms (point-of-sale, direct mailing, print media and broadcast media); sales force representation; and PR (public relations).

In the context of railway marketing, promotional techniques are becoming more widely used for passenger business, but are as yet relatively little used in the case of freight business.

Of the different forms of promotion, *sales representation* has been the most widely used in railway business. However, railway sales forces have mainly had a passive or reactive, rather than a proactive, role, servicing existing customers rather than seeking out and securing new customers, order taking rather than order generating. Furthermore, these sales forces have not been organized in a way which would assist them to actively promote railway services and secure new business.

Only a relatively few railway organizations have encouraged *market segment specialization* by their sales personnel, with the result that most railway sales forces have not been able to develop the specialized knowledge of individual market segments needed to be able to effectively sell railway services to these segments. The lack of specialization is particularly evident in passenger marketing cells, where all too often sales force activity has no specific focus of any sort. Indeed in many railway systems of the region, there is no passenger sales force at all and selling activity is confined to ticketing or reservations offices, which in reality have an "order taking" function.

There is now clearly an urgent need to focus railway sales force activity on individual market segments and at the same time to ensure that this activity is fully co-ordinated with other forms of promotional activity, such as advertising.

The reticence of railway managements in the recent past to commit to the development of co-ordinated promotional campaigns for their core transportation business is partly explained by budget limitations and some degree of scepticism that promotion can be effective in increasing the volume of this business. Increasing competition (particularly from road passenger and freight transport operators), will however dictate a change in this attitude. Railway managements can be expected in future to allocate an increasing proportion of their operating budgets to promotion. At the same time, they can be expected to employ more sophisticated techniques (such as on-board passenger sample surveys) to measure the effectiveness and reach of their promotional campaigns, in order to maximize the value of future campaigns.

2.2.4 Place

“Place” means not just the locations of producer facilities, but the locations of all points of sale at which customers may have access to the product or service. In the case of railways, these will include not only passenger stations and freight terminals, but corporate/regional/divisional headquarters, centralized railway reservations offices, hotels, travel agents, and freight forwarders’ offices and terminals.

In the wider sense, “place” will mean channels of distribution for the product. Outside of the railway organization itself, the most effective channels of distribution for the railway “product” are likely to be travel agents in the case of rail passenger services and freight forwarders, in the case of rail freight services. The main advantage of using external channels of distribution is that business volume can be maximized through a relatively small number of direct customers, who act as wholesalers, on-selling space on trains to a much larger group of final consumers, accepting the credit and business risk and arranging storage and feeder transport (to/from railheads), where required. By directing a greater proportion of their business through such “wholesalers”, railway managements can often achieve significant reductions in their operating costs, with commensurate improvements in the overall corporate financial result.

2.2.5 People

It almost goes without saying that people are a railway organization’s most important resource. So it is that a railway’s people resources will be vitally important to the realization of its marketing goals. It will not matter how advanced and sophisticated are a railway organization’s management systems if the railway’s existing and potential customers do not feel that railway staff are listening and responding to their needs.

What is required, therefore, is *total customer awareness* from the very top to the lowest levels of staff in the railway organization. Inevitably, this in turn will require that a customer awareness culture be instilled throughout the railway organization by its senior management, who in most cases must first make the mental transition themselves, or be prepared to be swept aside by personnel who already have.

2.2.6 Processes

Railway processes, especially operational processes, have evolved over the 170-year history of the development of the railway as a common transport mode. In many instances these processes have changed in response to the development of competing transport modes, especially road transport. An example of change spurred on by the increasing availability of door to door services provided by road transport has been the demise of the collection and re-marshalling of casual wagons from private sidings and its replacement by the operation of block trains between intermodal terminals.

What is important is that the processes must be compatible with serving the needs of railway customers. If a customer requires regular and frequent despatch of his loading on scheduled fast freight trains, then a railway's policy of operating infrequent, slower and longer trains will obviously be incompatible with these needs and the railway must be prepared to change its process accordingly. The process in effect is an integral part of the railway's delivery of its product (i.e. service) and will have a crucial role in determining whether in the end the product will satisfy customers.

2.2.7 Physical Evidence

Physical Evidence refers to the physical evidence available to customers in the layout and presentation of railway facilities that their needs are actually being met. The design, layout and signage of passenger stations, for example, must be such as to convey the impression to travellers that the railway really wants their business. This it will do by ensuring that platforms, concourses, ticket/reservations offices, waiting rooms, toilets, baggage lockers, bus interchange and transfer facilities, etc, will be comfortable and convenient for *all* categories of travellers to use. These facilities also have a critical influence on customer acceptance of the railway product.

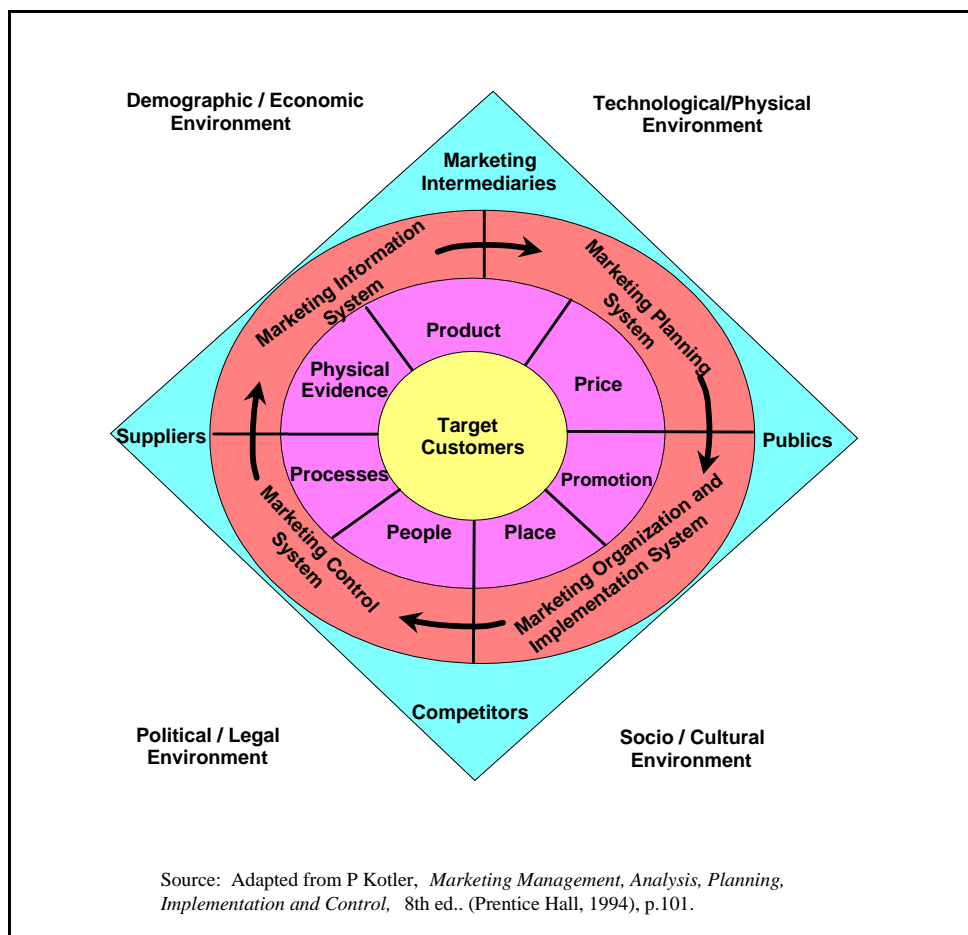
2.3 An Overview of the Marketing Management Process in a Railway Environment

Marketing seeks to improve corporate profitability by modifying the Marketing Mix, consisting of the four variables, the **Seven P's**, just described, in order to satisfy customer wants and needs. Clearly, units of the organization other than the Marketing or Commercial department will also have an important "Marketing" role. In the case of railways, those departments with a primary role in service delivery - mainly the Operations, Mechanical Engineering and Civil Engineering Departments - can crucially affect the quality and other characteristics of the Seven P's, and hence will have an important influence on the marketability of the railway product. However, it is the Marketing or Commercial Department which must take primary responsibility for translating the needs of customers into service requirements which it must then communicate to the service providers, and for ensuring that the delivery of services satisfies customer needs.

Figure 2-1 illustrates the main factors influencing the process of Marketing Management in any commercial organization. The single most important factor is the wants and needs of the organization's target customers, and hence these are shown at the

epicentre of the diagram. The wants and needs of the target customers determine the specifications of the marketing mix, which is embodied in the Marketing Management System (comprising systems of Marketing Planning, Organization/Implementation and Control), as illustrated in the third innermost ring of the diagram. However, Marketing Management in developing a strategy to satisfy the needs of its target market must also adapt to a *microenvironment*, as shown at the corners of the rectangle in the diagram, consisting of marketing intermediaries (or distribution channels), suppliers, competitors and publics (including stakeholders²). It must further adapt to a *macroenvironment*, shown at the outer extremities of the diagram, consisting of demographic and economic forces, political and legal forces, technological/physical forces, and social and cultural forces. Thus, Marketing Management must take into account all of the actors and forces in the marketing environment in developing its strategy to serve the target market. This applies as much in the case of a large global corporation as it does in the case of a small domestic business, and within this range certainly applies to railway organizations.

Figure 2-1 Influences on Marketing Management



² *Stakeholders* are parties who are not customers of the organization, but are in some way affected by its activities. In the case of railways, stakeholders might conceivably be taxpayers, environmental pressure groups, or even local residents, with properties adjoining railway lines, who might be affected in some way by railway operations.

3. **WHY DO RAILWAYS NEED MARKETING?**

It is an undeniable fact that railways worldwide are facing unprecedented competition from other transport modes, particularly from road transport. More than ever before, railways are being exposed to market forces and associated competitive pressures which threaten their long term survival. Their capacity to respond effectively to these forces depends mainly on their ability to transform themselves from the non-profit making agencies of government, which they have historically been, into vibrant, profit driven and market oriented commercial enterprises.

This transformation requires, among other things, a fundamental shift in the driving philosophy of railway organizations and their adoption of a marketing culture, systems and practices is a vital part of this process. ***It also requires a major change in the attitude and expectations of governments with respect to the future role of their railway organizations.*** There is a basic contradiction between requiring railways, on the one hand, to become commercial organizations, and on the other to continue, without explicit subsidy, the provision of loss making “welfare significant” services.

Among the more compelling reasons for the adoption of a market-led philosophy by railway organizations is the requirement, now increasingly being imposed on them by their owning governments, to reverse the declining trend in their net financial results. Closely linked with this requirement is the need for railway organizations to be able to respond effectively to competition which could, if allowed to go unchecked, drive down their net financial results to levels which would be politically unsustainable and might therefore lead to their demise. In this context, this section outlines the recent experience of some railway organizations of the ESCAP region.

3.1 **Reversal of Poor Financial Performance**

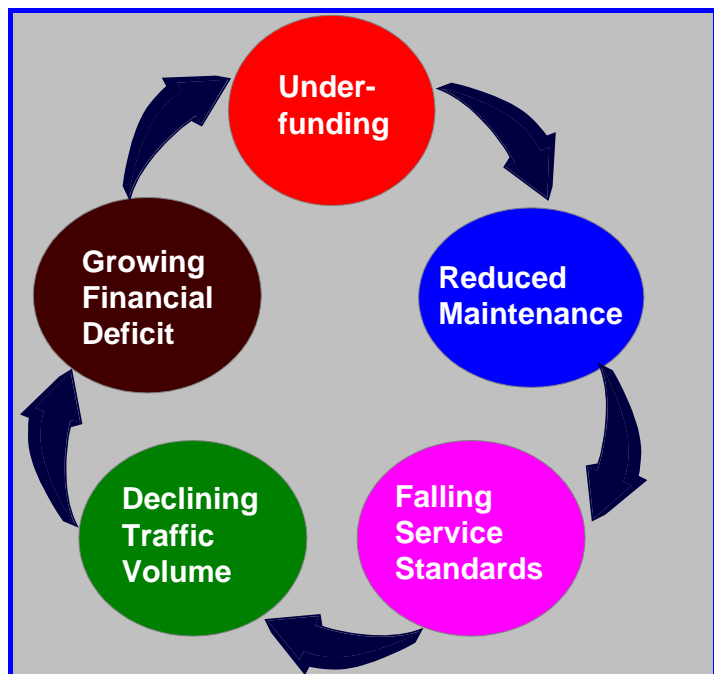
Very few of the region’s railway organizations currently generate sufficient revenue from their core transportation businesses to cover their operating expenses, and practically none of the region’s railway organizations generates a sufficient gross operating margin above the level of its operating expenses to provide for the renewal of its assets. Yet the governments of the region now demonstrate a tendency towards withdrawal of financial support for railways.

(a) *General Statement of the Problem*

The dilemma faced by most of the railway organizations of the region, and of the world for that matter, is best understood by reference to what might be termed “*the vicious circle of railway underfunding*”. Figure 3-1 illustrates how this vicious circle works.

A widening negative gap between operating costs and revenues such as that experienced by a majority of the region’s railway systems can lead (and often has led) to a situation in which governments reduce the level of funding available to their rail systems for the maintenance of their track infrastructure and vehicle fleets at a level compatible with the provision of a safe, efficient, reliable and competitive transport service. This in turn leads to a deterioration in the condition of track, bridges, signalling systems, and of locomotive and

Figure 3-1 The Vicious Circle of Railway Underfunding



rollingstock fleets, resulting in high rates of equipment failure and the imposition of increasingly stringent speed restrictions on track and bridges, in order to arrest the decline in physical standards. The market response to falling standards of service is a withdrawal of business and reduced traffic volume, leading successively to: *declining revenue; further widening of the financial deficit; and further reductions in the railway budget.* In this way, the *vicious circle* is completed.

The problem of the non-availability of funds to support an acceptable level of maintenance (which might be perceived to be the root cause of the vicious circle) is often compounded by *capital starvation*, particularly of funds for railway capacity expansion

projects, the majority of which may be economically justified by comparison with alternative investment in less environmentally friendly transport modes.

(b) The Problem as Experienced by Railways of the Region

A recent review by ESCAP of the profitability of some 16 railway systems of the Asia-Pacific region, out of a total of some 30, indicated that only five of these systems generated sufficient revenue to cover their operating costs, and one of these five was able to achieve an operating surplus only after the inclusion of profits made on its real estate transactions.³

Here the following definitions apply:

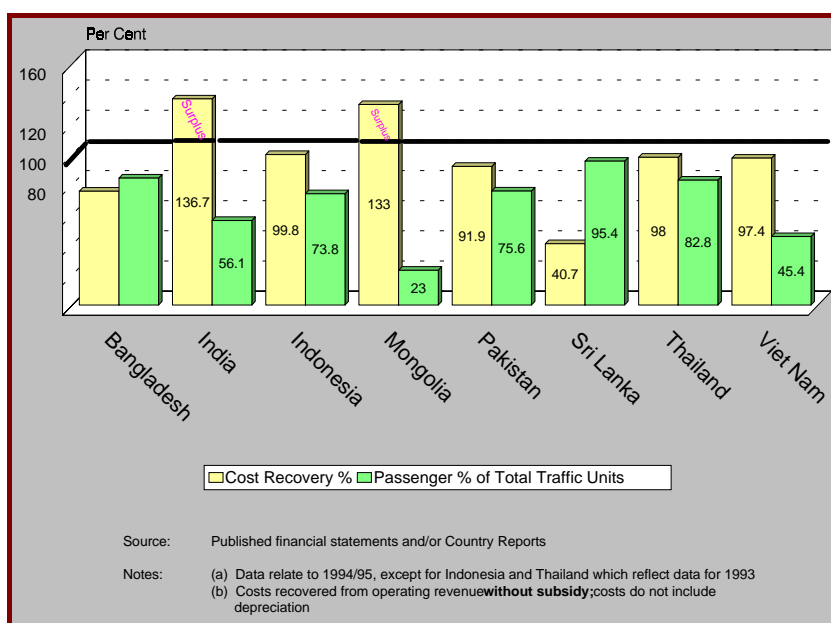
- ◆ **Revenue** is gross receipts of income from railway operations, including the core transportation business as well as other business, such as commercial property development. It excludes income from other sources, such as interest on investments or sale of redundant assets, as well as any subsidies paid to compensate the railway for the provision of unprofitable services.
- ◆ **Operating costs** are the working expenses of the railway, net of depreciation allowances and interest paid on loans. Typically, working expenses are

³ ESCAP, *Review of Developments in Transport, Communications and Tourism in the ESCAP Region, 1995* (ST/ESCAP/1620)

incurred in the payment of wages and salaries and in purchases of fuel and consumable materials for operation and maintenance of railway assets.

Of a total of 12 railway organizations visited during the course of ESCAP missions and/or supplying Country Papers for the Railway Marketing study, detailed financial results were available for eight - Bangladesh, India, Indonesia, Mongolia, Pakistan, Sri Lanka, Thailand and Viet Nam (a ninth railway organization, the Malaysian railway, supplying data only in index format). Figure 3-2 shows, for these eight railway organizations, the percentage recovery of operating costs from revenue against the proportion of total traffic units (passenger km plus freight net tonne km) attributable to passenger traffic. Such a comparison was made in order to demonstrate a link between a railway organization's profitability and the share of passenger traffic in its total traffic task. In general, the cost recovery ratio will be low when the passenger traffic share is high, and vice versa, owing to the fact that passenger fares are usually strictly controlled or capped by governments, whereas freight tariffs are not.

Figure 3-2 Profitability and Passenger Share of Total Traffic, Selected Railways of the ESCAP Region



Of the eight railway organizations for which financial data were reviewed, only two, India and Mongolia, achieved an operating surplus (excess of revenue over operating costs), yet in both cases it can be, and is, argued that this achieved surplus is insufficient to provide for an adequate rate of asset renewal.

In the case of India, while the surplus of revenue over operating costs is nearly 40 per cent, the government requires the payment of a dividend out of net revenue. In 1994/95 (the year to which the reviewed data relate), payment of this dividend, amounting to the equivalent of US\$ 490 million, reduced the surplus to only 25 per cent above the level of operating costs, which was insufficient to sustain investments in the capacity expansion projects needed to maintain Indian Railways' market share.

In the case of Mongolia, the addition of depreciation allowances to operating costs would result in a reduction in the surplus of revenue over operating costs from 33 per cent to only 0.5 per cent, and even then there is insufficient provision to permit replacement of life expired assets at an acceptable rate.

The remaining six railway organizations do not generate sufficient revenue to cover even their working expenses and hence are wholly reliant on government financial support for asset renewal.

Data supplied by the Malaysian Railway in index format suggest that the level of cost recovery for that system stands at 107 per cent after an allowance for depreciation and at 120 per cent without. However, after removal of income and costs for non-core business (mainly commercial property), it may be inferred from the data supplied that cost recovery would stand at only 96 per cent after an allowance for depreciation and at 109.6 per cent without - suggesting that the profitability of the railway is heavily dependent on its non-core business.⁴

The inverse relationship between level of cost recovery and the share of passenger traffic in the total traffic task is borne out in the case of 6 of the 8 railways reviewed, India and Viet Nam providing the two exceptions.

In the case of India, while passenger traffic accounts for more than half the total rail traffic units, the revenue generated by the railway exceeds the level of operating costs by almost 40 per cent. In fact, the results for India obscure the reality that there is a substantial cross subsidy between freight and passenger traffic, which is addressed in the feature box (box I).

In the case of Viet Nam, the reverse applies, in that passenger traffic comprises less than half of the total traffic units, yet overall cost recovery stands at slightly less than 100 per cent.

The results for Viet Nam reflect poor profit performance in both the passenger and freight traffic sectors. This has been a result of the recent transformation of the national economy from central control to market direction and the consequent exposure of the railway to virulent price and service competition (especially from road transport), where previously it had been shielded from such competition. Thus far, the railway has been unable to respond effectively to this competition, in either of the core transportation sectors. As evidence of this, annual rail passenger kilometres have declined by more than 60 per cent, while annual rail freight tonne kilometres have remained practically constant, since 1987. The railway has been unable to shed costs at a rate compatible with the loss of traffic, and this coupled with an inability either to increase its transportation charges owing to competitive pressures, has resulted in a deterioration in its cost recovery performance over this period.

(c) *How can application of marketing techniques improve railway profitability?*

An answer to this question lies in the fact that individual railway traffics or traffic segments are ***not*** uniform in terms of their contribution or potential contribution to full cost recovery. That this is so is well illustrated by the experience of India (box I).

⁴ Country Report for Malaysia, p.14.

Box 1 Divergent Financial Returns and Cross-Subsidies between Traffic Segments in India

Financial contributions (i.e. revenue less attributable costs) are calculated annually for 7 passenger traffic segments and nearly 250 freight commodities carried by the Indian Railways. Contribution data for 1993/94 indicate very clearly the widely divergent profitability of individual traffic segments.

In that year, the operating surplus of the railway (revenue less working expenses) amounted to Rs 47.11 billion. By contrast, the aggregated financial contributions of the top 7 rail freight commodities (in terms of revenue) was estimated at Rs 41.43 billion and the aggregated contributions of all passenger segments at Rs - 12.73 billion. Thus, the contribution generated by the top 7 commodities was sufficient after deduction of the negative contribution on passenger traffic, to provide a substantial proportion (61 %) of the overall operating surplus for the railway. The fact that it did not account for 100% of this surplus would suggest that there are substantial profit contributors amongst the remaining freight commodities transported by the railway, although it is likely that not all commodities would generate a positive contribution.

While the passenger traffic sector overall generated sufficient revenue to cover **only 77.5%** of its attributable cost, three passenger traffic segments achieved at least full cost recovery. These were the Air-conditioned Class, Air-conditioned Sleeper and Air-conditioned Chair Car segments, with cost recovery percentages of 121.3%, 148.3%, and 105.6%, respectively. The worst contributor was the Ordinary Second Class segment which is strictly fare controlled and for which collected revenue recovered only 44.8% of attributable cost.

In the case of the top 7 freight commodities, cost recovery overall was **164.5%**. For individual commodities, it ranged from 321.6%, for Iron and Steel, to 111.2%, for Food Grains (the latter being subject to tariff regulation in some areas).

The Government of India has not as yet accepted the concept of CSO funding of loss-making traffic segments, for which, owing to government policy, an improved level of cost recovery cannot be achieved. Hence, there is considerable pressure to improve the profit performance of those traffic segments - mostly bulk freight commodities - which can be expected to provide a cross subsidy for the loss-making segments. Several marketing strategies have been devised and implemented to achieve this goal, the most significant being the introduction of incentive pricing to reduce empty backhaulage of wagons.

Source: Country Report for India

Some traffics - for example principally, but not exclusively, those freight traffics capable of being handled in point to point block train loads over comparatively long distances at high frequency - offer a relatively high level of cost recovery, while others due to lack of volume and numerous other factors, such as an inability to yield profitable fares or freight tariffs, are substantial loss contributors.

The success of the railway in being able to lift the level of overall cost recovery, within the constraints imposed on revenue generation by government policy, thus depends on its ability to:

- (i) *Actively market* those individual traffics or traffic segments which can be identified as profit contributors;

- (ii) *Enhance operational efficiency* in the case of individual traffics or traffic segments which have the potential to offer improved financial returns;
- (iii) *De-market* those traffics or traffic segments which can be identified as chronic loss contributors, and *from which it is possible for the railway system to withdraw*;
- (iv) *Quarantine and seek direct compensation for* those traffics or traffic segments which can be identified as chronic loss contributors, but from which, owing to government policy, *it is not possible for the railway system to withdraw*

The conventional view that marketing is concerned with growth, rather than with contraction, has to be overturned if marketing techniques are to succeed in improving corporate profitability. Marketing is, after all, nothing more than a systematic management tool aimed at identifying and manipulating the factors which will contribute most to profit growth. This may be achieved as much through a process of strategic contraction, as through the promotion of growth. However, it has to be emphasized that strategic withdrawal from individual loss-making traffics should be contemplated only if the revenue generated by those traffics is insufficient to cover their direct operating or incremental costs and then only after all possibilities for coordination with other modes for their handling have been fully explored.

In the railway environment, de-marketing strategies have been applied in order to achieve a withdrawal from unprofitable freight traffic segments, such as short-haul less-than-carload freight traffic. India and (to some extent) Malaysia have applied punitive freight rates to discourage this business. In the case of longer haul LCL traffic, the second strategy (improvement of operational efficiency) has been applied by providing freight rate incentives to LCL customers in order to encourage them to containerize their freight consignments. *[Such strategies, however, should be applied with caution and with due regard to the needs and business interests of customers. In chapter 7 (section 7.3) , where logistics management is discussed, an example is given of the application of a containerization strategy which had wholly undesirable consequences for the railway organization seeking to apply it, simply because it had embarked on the strategy without considering the needs and circumstances of customers].*

Finally, the marketing concept also embraces the quarantining, or isolation, of services or activities which are inherently unprofitable, but the continuing provision of which is required by governments to satisfy policy goals, such as poverty alleviation or regional development. Such unprofitable activities may be related to particular market segments, as is the case with third class or economy passenger services upon which many governments of the region impose fare ceilings or caps, or they may be related to operation of particular parts of the network such as branchlines, or finally they may be related to a requirement to provide for employee welfare or for the retention of employees who would otherwise be declared as surplus.

One solution to this problem which is gaining popularity throughout the region and elsewhere is the identification and explicit funding of these services as *Community*, or *Public, Service Obligations (CSOs or PSOs)*. Effectively, implementation of this solution would mean that a railway system would be required to forecast and agree with the government prior to the commencement of each financial year, a level of explicit subsidy to be paid by

the government to eliminate losses which might otherwise be incurred on services identified as CSOs or PSOs. This amount would then be paid to the railway as a specific revenue supplement.

An important prerequisite for the operation of a CSO contract is the availability of discrete and at least annually updated cost estimates for each declared CSO activity. Apart from providing a basis for explicit subsidization of unprofitable components of railway business, isolation of the costs of CSO activities has the advantage of revealing the financial performance of potentially profitable components, allowing a more focussed approach to developing strategies for improvement of this performance.

The policy of cross-subsidization of unprofitable traffics by the financial surpluses of profitable traffics (as practised by several of the region's railways) will not generally allow the strengths of the latter to be fully developed or exploited, and indeed may well arouse customer resistance and result in loss of traffic.

For these reasons, explicit subsidization of unprofitable but necessary activities, via an appropriate funding mechanism, such as CSO or PSO funding, may well be crucial for the long term survival of railways. However, as is shown in Box II, only three of the 12 regional railway systems participating in the ESCAP Marketing Survey have so far implemented a CSO funding system.

Box II Compensation for Unprofitable Services

Railway	Adoption of CSO Funding?	Remarks
Bangladesh	Yes	Applies to all passenger services, below cost carriage of certain freight commodities, operation of uneconomic branchlines and employee welfare
India	No	Government requires cross-subsidization between profitable and unprofitable services
Indonesia	No	
Islamic Republic of Iran	No	
Kazakhstan	No	
Malaysia	Yes	Limited to East Coast long distance passenger services. Development of non-core business expected to cross-subsidize core transportation business (eg. Property income to finance rollingstock fleet modernization)
Mongolia	No	
Pakistan	Yes	Applies to most passenger services and carriage of freight on behalf of Government
Sri Lanka	No	
Thailand	No	Under consideration
Uzbekistan	No	
Viet Nam	No	

Source: Country Reports and ESCAP Survey Missions

3.2 Responding to Increasing Competition

The fact that railways, worldwide, are being exposed to an increasing intensity of competition from other transport modes, notably from road transport, reinforces the need for railway organizations to implement systematic marketing techniques. Over at least the past two decades and possibly over a longer timeframe, this intensified competition has succeeded in reducing the market share of rail in all traffic segments, but most notably in the freight traffic segments. Coupled with reducing real levels of financial support for maintenance of rail systems, this intensifying competition has had the effect of further depressing railway profitability.

An essential function of marketing management is to gather and to act on intelligence about the activities and the pricing strategies of competitors. In this way, it can help to lessen the adverse impacts of competition on railway profitability. Not the least important aspect of marketing management's role in this context is its ability to provide railway corporate management with adequate market intelligence to be able to effectively lobby governments in order to achieve a more equitable basis of competition within the transport sector.

It can be fairly claimed that the main emphasis in the development of national transport policies within the region and elsewhere over recent years has been the removal of the economic regulation of transport, often referred to as *transport deregulation or liberalization*. This has produced some beneficial effects in terms of encouraging greater levels of competition within the sector, but at the same time the focus on deregulation has obscured from the view of the transport policy makers of the region the urgent necessity of achieving an adequate level of cost recovery from commercial road transport operators.

That there is an under-recovery of the costs attributable to the use of the public road system by road transport operators, especially operators of heavy commercial vehicles, is well documented in World Bank reports and elsewhere. However, the wider effects of current road cost recovery policies are not generally well understood. Perhaps their most damaging effect is that they set an artificial ceiling on the level of railway rates and charges, by facilitating predatory competition on the part of road transport operators who in many countries of the region are assisted by artificially low cost structures and an absence of commercial regulation. The consequence of these policies is that taxpayers *could* face a double burden - in the form of a greater net commitment of public funds for road maintenance (where there is insufficient cross-subsidization from charges on other categories of road users), plus a greater commitment of public funds to cover the railway financial deficit which would be significantly larger than it would have been, had there been equitable competition.

The detrimental impacts of government road cost recovery policies must in the first instance be addressed by direct action by railway management to lobby governments to change their policies. Implementation of a systematic marketing approach will not of itself allow railways to successfully combat these adverse impacts, but it will at least lead to a better understanding of the problem and provide a sound basis on which railway managements can lobby governments for its resolution.

In addition, these adverse impacts can be minimized by the application of marketing strategies in particular traffic, or market, segments in which customers carefully

trade off service factors against price in making choices about mode of transportation. The cheapest service will not always be selected, if other customer requirements, such as those associated with frequency, transit reliability and consignment security (in the case of freight traffic) are not also satisfied. Different market segments will typically place different weights on price and service factors, and railways will be in the best position to be able to exploit these differences if they apply marketing techniques which will first allow customer needs to be accurately identified and then answered with tailor-made price and service strategies.

Application of customer oriented marketing strategies will require not only that railways develop a detailed knowledge of their customers, but also that they routinely gather and assess intelligence on their competitors. The type of information which should be collected is outlined in chapter 9.

3.3 Is Privatization a Necessary Pre-requisite to Effective Railway Marketing?

In a word, the answer to this question is *No*. There seems to be a popular misconception that only the private sector can successfully implement marketing systems, policies and strategies - a misconception which may stem from the belief that public sector enterprises have no incentive to operate in a profit maximizing way. Such a belief is quickly being overturned by the modern tendency of governments, including some in the ESCAP region, to require their railway systems to achieve full cost recovery and to engage their senior management personnel under fixed term, incentive based contracts in order to ensure this result.

Indeed, it may be argued that the methods and form of privatization will determine whether privatized railways will have any incentive at all to embrace marketing systems, policies and strategies. If privatization merely results in the transformation of a public monopoly into a private one, then it is unlikely that marketing will assume top priority among the management strategies adopted by the newly privatized railway. In addition, privatization *could* result in a paradox whereby the profit maximizing strategies of a privatized railway actually work against effective marketing of its services. The recent experience of railway privatization in the United Kingdom of Great Britain and Northern Ireland abounds in examples of such paradoxes, owing to the constraints imposed on the new private railway operators by the form of privatization employed.

One such example is that of South Western Trains, one of the 25 passenger rail operating companies recently set up to operate services under a franchise agreement with the United Kingdom government, as part of its railway privatization programme. As is the case with the majority of passenger franchises let, the franchise term for South West Trains is only 7 years, meaning that the company is under great pressure from its shareholders to achieve profitability early in the term of its franchise. Since its franchise agreement does not give it full commercial pricing freedom, the company must achieve its profit objectives by reducing the level of its controllable costs, the majority of which are *labour costs*. With this objective in mind, the company in February 1997 made some 70 of its train drivers redundant, with the result that it could not operate the full timetable required of it by the Office of Rail Franchising and it was obliged to cancel no fewer than 39 trains per day, most of them commuter trains operating during off-peak times. Although it subsequently attempted to restore the faith of its travelling public by offering a *fare holiday*, the damage

had been done, simply because the company could not offer the type of product customers (passengers) wanted, which was a frequent rail service *throughout* the day, not just at peak times.

By contrast, there are numerous examples of publicly owned railway companies employing very effective marketing strategies to achieve profit or market share maximizing objectives. In France, the government owned railway organization (S.N.C.F.) has been able to win from the airlines a dominant share of the long distance domestic travel market for its high speed TGV services. This it has been able to do not solely by offering a superior product, which provided users with highly competitive transit times, but also by packaging its product competitively, in terms of scheduling, pricing and passenger comfort/convenience. In Australia, while employment in the government owned railways dropped by more than 50 per cent (to 57,700 persons) between 1980 and 1995, the volume of freight carried by these railways increased by 69 per cent, despite intensified competition from road transport during this period. While much of this increase may be attributed to the growth in bulk traffic, it also reflects increasing rail penetration of the East Coast inter-capital container haulage market, which the government owned National Rail Corporation serves with fast overnight intermodal services, running at near passenger speeds and priced competitively to attract traffic from the interstate highways.

While railway privatization strategies as a means of eliminating railway financial deficits are currently in vogue throughout the region and elsewhere, it is important to note that privatization may not always provide appropriate solution to this problem, particularly when governments remain committed to the continuation of unprofitable services, as a social responsibility. It is important also that the issues of managerial efficiency and ownership of railways should not be confused. Railways can be, and are being, commercialized under public ownership, and the adoption of a marketing culture is an essential part of this process.

4. THE PLACE OF MARKETING IN THE RAILWAY ORGANIZATION

The position of the marketing unit in the railway organization chart and the structure of the marketing unit itself are important considerations, since they indicate very clearly the significance attached to the role of Marketing within the corporate organization and largely determine the effectiveness of the marketing function in achieving corporate goals.

Of course, more than a few of the region's railway organizations do not incorporate a Marketing unit in any form. It is important, therefore, that when they do develop a Marketing capability, careful consideration should be given to the structure of their Marketing unit, the reporting relationships within this unit, and the reporting relationships between this Marketing unit and the senior corporate management positions in the overall organization.

The structure and form of organization adopted desirably should permit:

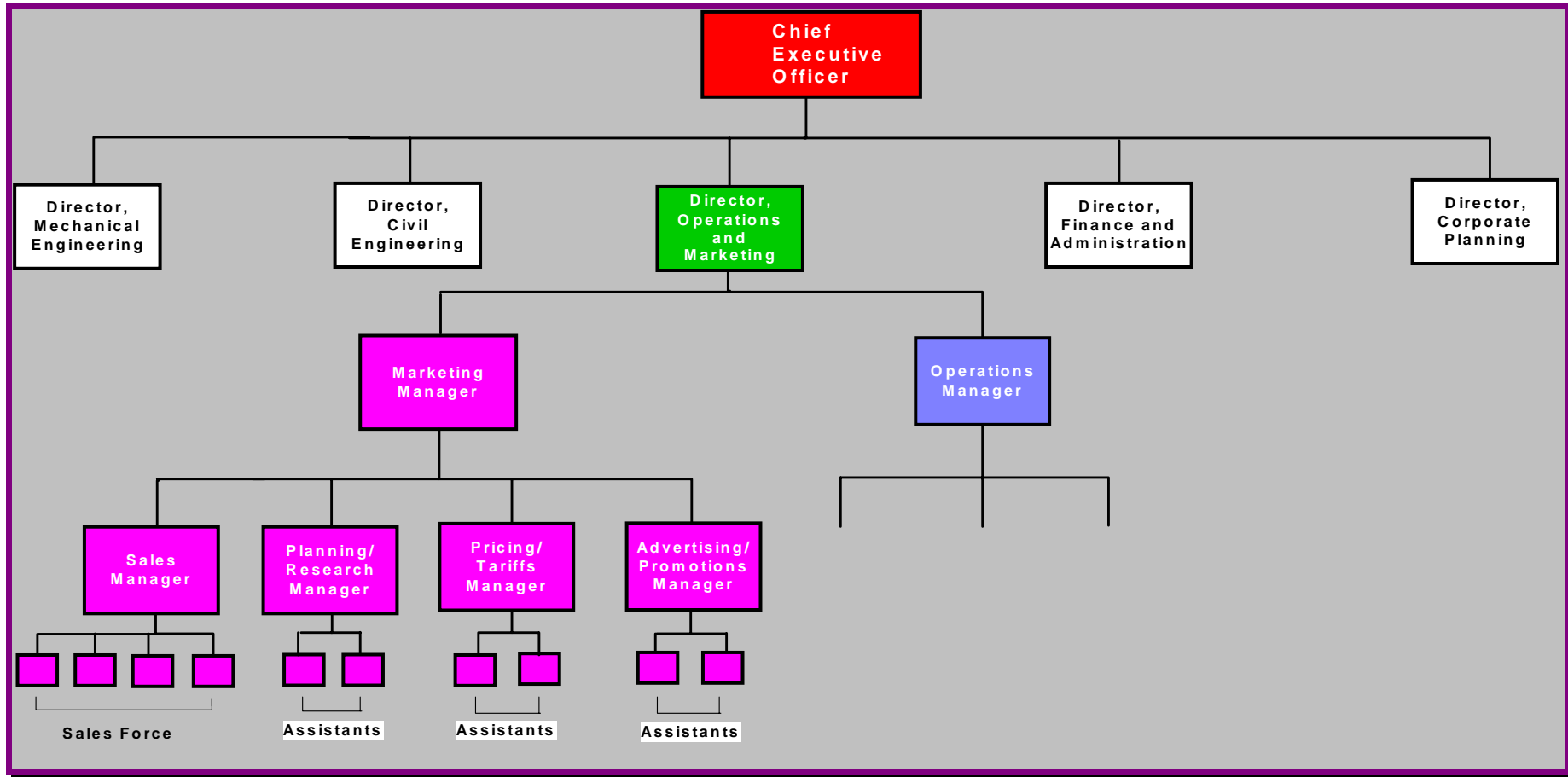
- (i) Close and frequent communications between the Chief Executive Officer and the head of the Marketing unit, with both persons accepting a leading role in promoting a customer oriented marketing culture throughout the organization. (This is likely to require that the *reporting line* from the Chief Executive Officer to the head of the Marketing unit be as short as possible);
- (ii) Effective co-ordination of railway commercial and operational activities, perhaps suggesting that both functions should be integrated in an organizational sense;
- (iii) Integration of all elements of the marketing mix under a single management function, suggesting that responsibility for sales, market research and planning, pricing, advertising and promotion, and physical distribution, should be centralized within the marketing unit.

4.1 The Position of Marketing Within the Corporate Structure

There are numerous models which can provide guidance for the organization of the marketing function within the overall corporate structure of railway organizations. However, three organizational models appear to have so far to have found favour within the region. They are:

- ◆ Marketing as a functional department
- ◆ Marketing as a service department
- ◆ Marketing as a strategic business unit

The first of these models, the *functional department model*, is the most commonly applied form of organization for railways and is illustrated in figure 4-1. This form of organization has been adopted by a majority of the region's railways which have introduced a marketing/commercial function. It was also used extensively in Australia before a majority of



the government owned railway systems in that country adopted a strategic business unit approach. The distinct advantage of this model is that integrates the railway marketing and operations functions under the management of a single senior corporate manager, who reports directly to the Chief Executive Officer. Of all the organizational models available, this type of arrangement is most likely to ensure that the activities of staff primarily responsible for *maintaining an interface with railway customers* and of staff primarily responsible for *service delivery* are effectively harmonized and co-ordinated. Amongst other things, this form of organization should facilitate (but cannot of itself ensure) effective and frequent communication between the personnel involved in each of these two functions.

The second-listed form of organization, *Marketing as a service department*, involves a more passive role for Marketing in the corporate organization. Generally, this model integrates Marketing with the Corporate Planning function, under a single senior corporate manager reporting directly to the Chief Executive Officer. While this has the advantage of integrating the lead planning role of marketing within the corporate planning structure, it could threaten the close contact which should exist between marketing staff and railway customers, thereby reducing the marketing plan to an “academic” exercise, devoid of customer inputs. It should be noted also that, almost by definition, a Corporate Planning unit within any organization has a co-ordinating function - it must assemble planning inputs from all other units in the organization. Arguably, such a unit would be no less effective in discharging this role if Marketing were to be organizationally independent of it, in the sense that Marketing would be just like any other unit of the organization, contributing planning inputs under the co-ordination of the central Corporate Planning unit.

The last listed form of organization, *Marketing as a strategic business unit*, represents an extension of the concept of a product or brand-based organization, as featured in many Marketing textbooks and as applied mostly in the field of consumer product marketing in many western developed countries. From a railway perspective, it involves structuring an organization around key units of its business, which for the most part are capable of being managed separately. These units may be groups of core business services, such as *Passenger* and *Freight* services, or diversified activities, such as *Real Estate* or *Commercial Property Development*.

In the railway sector, however, few business segments are discrete in an operational sense and hence most consume shared resources such as track, signalling and motive power. Nevertheless, there are very often advantages in managing as separate units those businesses for which a large proportion of the resources consumed are specific to those businesses. For example, the costs associated with passenger stations and related facilities, as well as those associated with the passenger rollingstock fleet constitute a relatively large share of the total costs of operating passenger services, and specialized management of these resources is possible and desirable. Similar observations may be made about freight traffic, in respect of the management of marshalling yards, freight terminals, freight rollingstock and other freight dedicated resources.

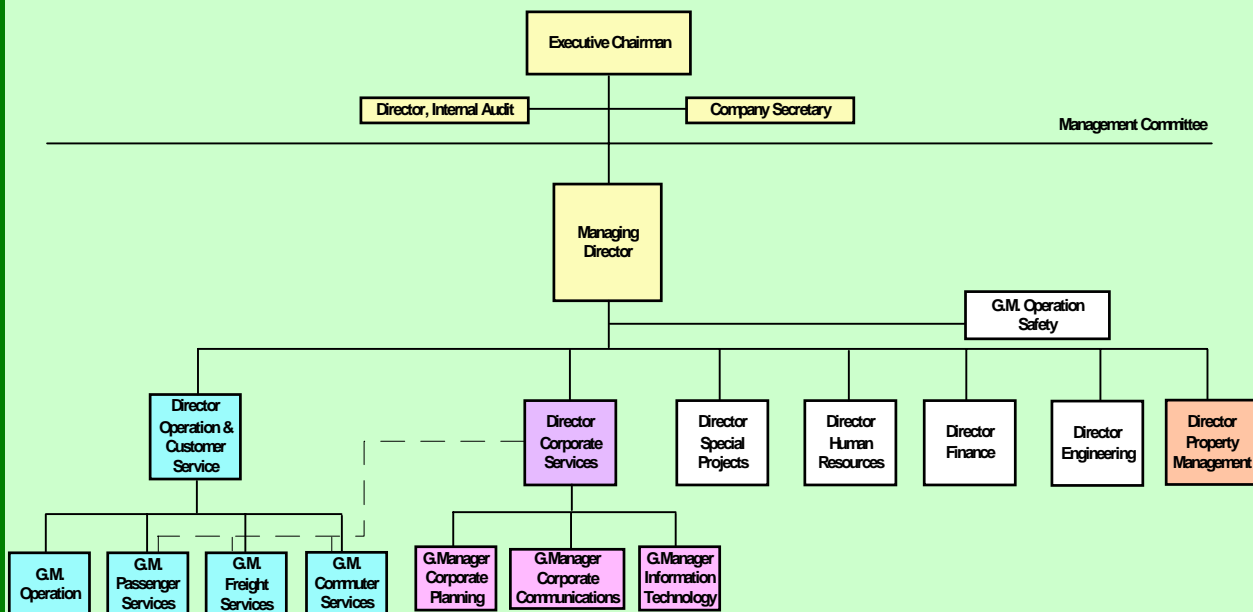
In addition, the passenger and freight elements of railway business invariably require dedicated pricing policies, sales efforts and promotional campaigns. For this and the abovementioned reasons, better management of passenger, freight and other specialized elements of railway business (e.g. parcels, real estate) can possibly be achieved by separating them into *Strategic Business Units*, each with its own marketing and operational management components.

Of course it is possible to opt for various combinations of each of these three organizational forms. One railway which has adopted a hybrid form of organization is the Malayan Railway (KTM Berhad). The organizational structure of this railway combines features of the third listed form of organization (business units) with features of the second listed type of organization (marketing as a service department), as is described in box III.

Box III

Organization Structure of KTM Berhad

In 1992, the Malayan Railway or Keretapi Tanah Melayu (KTM) was separated from direct government budgetary control and restructured as a business enterprise under government ownership. The new corporatized organization, designated KTM Berhad, was built around an entirely new organization structure, which included *Strategic Business Units*, or SBU's, but also embodied some features of an organization with a Marketing cell functioning as service department. The shape of the new organization is represented in the following diagram:



There are four SBU's, of which three - Passenger Services, Freight Services and Commuter Services have a reporting line to the Director, Operation and Customer Service who is also responsible for the Operations or Traffic function. The fourth SBU, Property, has a reporting line to the Director, Property Management. The three core business SBU's integrate marketing functions with some operating functions which are specific to their business (e.g.. the Freight SBU has responsibility for wagon distribution, the Passenger SBU has responsibility for ticketing, etc). Responsibility for advertising and promotion is, however, exercised by the Corporate Services Division, which is also responsible for coordinating the preparation of the 5 year Corporate and annual Business Plans (with planning inputs from the SBU's which must prepare their own annual marketing plans). For this reason, the SBU's have a "dotted" reporting line to the Director, Corporate Services.

Source: Country Report for Malaysia

The geographical size of the railway system will clearly have a strong influence on the type of organization structure which is adopted. If it is considered desirable to integrate the marketing and operations functions, large regionalized railways need to have an organization structure which is duplicated at headquarters and regional level. For example, in the Indian Railways both functions are within the responsibility of the Board Member for Traffic at Headquarters level and he has assisting him an Additional Member (Traffic) and an Additional Member (Commercial), each with their own departmental organizations. This structure is duplicated in each of the nine zonal, or regional, railways, with an Operations Manager (responsible for operating functions) and a Commercial Manager (responsible for marketing functions), both having their own departmental organizations and reporting directly to the General Manager of the zonal railway, but with an informal reporting line to their respective counterparts at headquarters. Only by organizational duplication of this type can effective, and vital, coordination of operations and marketing functions be assured right down to the level of the smallest field unit in such a large organization.

However, there are, both within and outside the region, examples of large railway systems which have opted for complete separation of management responsibility for the marketing and operations functions. One such is the National Rail Corporation Ltd of Australia which transports all interstate rail freight. It has a Corporate Headquarters located in Sydney, a Marketing Headquarters located in Melbourne, and an Operations Headquarters located in Adelaide (which is some 778 km by rail from Melbourne). The heads of the Marketing and Operations Divisions report directly to the Managing Director, based in Sydney. In this organization, only the operations and engineering functions are regionalized. To a large extent, the geographical environment in which the NRC operates, with a major concentration of railway customers in the east of the country, has dictated its organizational form but the separation of the units responsible for customer service from those responsible for customer liaison will mean that there will be additional pressure on the Managing Director (the Chief Executive Officer) to ensure that service delivery meets customer expectations.

4.2 Structure of the Marketing Unit

The structure of a typical Railway Marketing Department is also shown in figure 4-1. This structure is relevant to any of the organizational arrangements discussed in the foregoing section. Thus, it would be as applicable to a Marketing unit structured as a functional or service department as it would be to a Marketing unit structured as part of a Strategic Business Unit.

It is important that the Marketing unit should have responsibility for all seven elements of the Marketing mix. The unit will normally have four sections, each under a section manager, with responsibility for Sales, Planning/Market Research, Pricing and Advertising/Promotion. If justified by the workload, it may also be desirable to have a fifth department to provide advice to customers in logistics and materials handling matters (including the layout of rail loading/unloading facilities). Alternatively, responsibility for this function can rest with the Sales section.

5. **THE LEADING ROLE OF MARKETING IN RAILWAY CORPORATE PLANNING**

Not all of the region's railways have so far implemented a corporate plan, but an increasing number are embracing a corporate planning philosophy. A well structured, practical corporate plan will ensure that an organization's resources and activities are always directed to the achievement of its own goals on the one hand and those of governments (and by inference taxpayers) on the other. Marketing can and must play a leading role in the corporate planning process by translating customer requirements into railway requirements for human physical and financial resources and management actions. The Railway Marketing Unit will also have a key role, along with top level management in developing the spirit of marketing in other departments of the railway, notably the Civil Engineering, Mechanical Engineering and Operations departments. It is therefore essential that the marketing system should be an integral part of the railway corporate planning structure, which embodies a mixture of "top down" and "bottom up" planning philosophy.

5.1 **Corporate Plan Linkages**

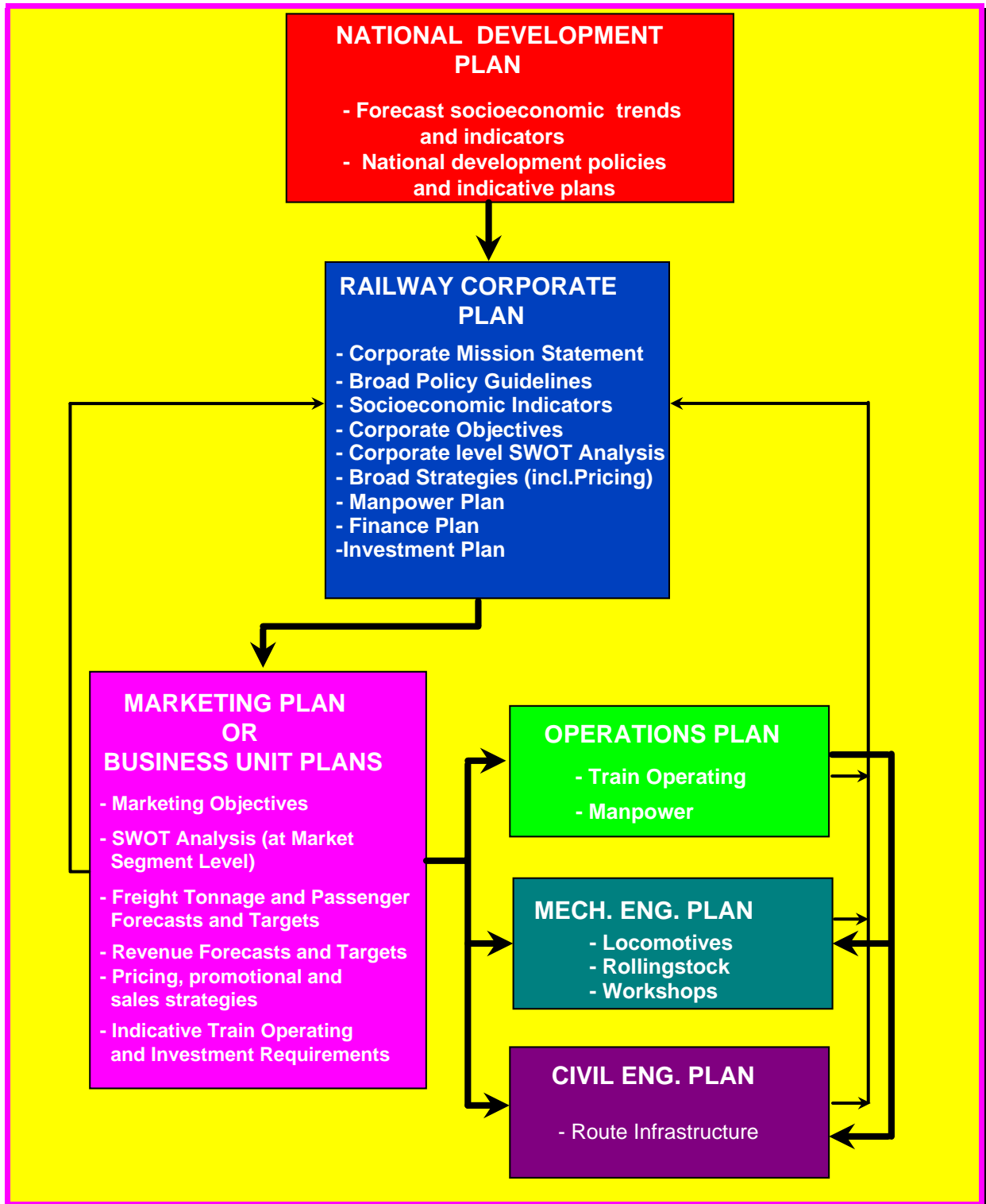
In essence, a corporate plan will link together the plans of the functional departments of a railway within a cohesive framework which will also integrate planning inputs from external sources, such as the National Economic Development or other government plans. One possible approach to a railway corporate planning process is illustrated in figure 5-1. In this process, interlinked plans are prepared at four levels - at the macroeconomic level in the case of the National Economic Development Plan, and at the corporate, marketing or business unit and functional department levels in the case of the railway organization.

The process begins with the **National Economic Development Plan** which will usually be a product of specialist government planning agencies or of Ministries of Finance. National plans are generally prepared for at least a five year time frame. They will usually signal the government's expectations with respect to the cost recovery goals of the railway and in some cases will specify in broad terms the commitment of investment funds to the railway. In addition they will provide government targets for the main macroeconomic indicators (including the general inflation rate and public expenditure limits), as well as a statement of regional development priorities. It is the last element which is of considerable significance to railways, since development priorities will provide some indication of the likely regional distribution of public funding for development. In some cases, National Plans will specify in detail the major infrastructure projects, such as new ports and associated land transport infrastructure, to be promoted as part of a government's regional development policy.

At the next level, the **Railway Corporate Plan** responds to policy guidelines contained in the National Economic Development Plan and provides guidelines in the form of corporate objectives, goals and strategies for the preparation of marketing or business unit plans.

Next in the planning hierarchy below the level of the Corporate Plan, **Marketing or Business Unit** plans have the function of developing pricing, sales and promotional strategies aimed at satisfying customer needs and maximizing revenue for the railway organization. Most importantly, they have the key function of *translating the needs of the marketplace into requirements for railway service and resources in the form of manpower, route infrastructure, locomotives and rollingstock.*

Figure 5-1 The Railway Corporate Planning Process



Service requirements identified in the marketing or business unit plans are then converted into manpower deployment and train operating plans at the level of the Traffic or Operations Department and are incorporated in the **Operations Plan**. The train operating plan in turn provides the basis on which maintenance and investment plans may be prepared by the Mechanical Engineering Department covering requirements for locomotives, rollingstock and workshops facilities and by the Civil Engineering Department covering track, structures and signalling requirements. These requirements are incorporated in the **Mechanical Engineering Plan** and the **Civil Engineering Plan**, respectively.

**Box IV The Corporate Planning Process
in the Indonesian Railway (PERUMKA)**

Since 1991, the Indonesian Railway Company (PERUMKA) has operated in the form of a public corporation in which 100% of the equity is owned by the Indonesian Government.

Ownership of the main infrastructure (track, structures, signalling, telecommunications, and buildings) is vested in the government and ownership of traction, rollingstock and other equipment in PERUMKA. The government makes a direct contribution to the cost of maintaining infrastructure and to the capital cost of passenger rollingstock for economy or third class services which are subject to fare regulation by the government.

The specific form of the financial relationship existing between the government and PERUMKA is embodied in the Railway Corporate Plan, prepared since 1992. An important function of this plan is to project the year by year government funding commitment to PERUMKA..

The PERUMKA Corporate Plan is a five year rolling plan which is revised annually. It takes direction, in the form of forecast socio-economic trends and indicators, national development policies and indicative plans, and broad regulatory policy guidelines, from the National Development Plan, which has a five-year timeframe and is also revised every five years. The Corporate Plan includes: an overall corporate mission statement and corporate objectives; an analysis of past traffic trends and financial performance over a five year period; a corporate-level SWOT analysis; traffic volume and financial (revenue and expenditure) targets for the next five years; corporate-level strategies (including pricing); a manpower plan; a financial plan; and an investment plan. The process is a mixture of "top-down" and "bottom-up" planning, with the Corporate Plan providing guidelines for the development of detailed supporting plans at the functional department level, and the latter feeding back into the key indicators of the Corporate Plan. The Marketing Plans prepared for the freight and passenger businesses by PERUMKA's Operation and Marketing Directorate have a pivotal role in providing base information for the other functional department plans.

The formal process of developing the Corporate Plan is handled by a "cross-functional team" comprising the heads of the functional divisions. The process begins in July of each year and the Corporate Plan is finalized in September, before the presentation of the National Budget.

Source: ESCAP mission to Indonesia, June 1996

Necessarily, there is feedback from the functional department plans to the corporate plan, in order to provide a basis for the preparation of manpower, finance and investment plans at the corporate level. Similarly there is feedback from the Marketing or Business Unit plans to the corporate plan in terms of traffic and revenue forecasts which provide the basis for the

Finance Plan.

Some of the region's railway systems, notably those of South-east Asia, have already implemented a corporate planning structure and system. One such railway system which has made considerable progress with implementation of a corporate planning system is that of Indonesia, as may be seen in Box IV.

In most cases where a corporate planning system has been introduced, it works as shown in figure 5-1, although the planning timeframe and cycle often varies from railway to railway. Usually, the Corporate Plan covers a five-year rolling timeframe, in line with that of the National Economic Development Plans, but lower order plans can sometimes cover an annual timeframe. Similarly, the Corporate Plan is usually revised at intervals less frequent than annually, whereas the lower order plans are usually revised on an annual basis.

Ideally, a corporate plan should also provide a framework for the preparation of annual revenue and expenditure budgets for railways, with the targets of the first year of the corporate plan timeframe providing the budget base.

5.2 Corporate Plan Elements

Important elements of a corporate plan providing guidelines for the marketing and functional department plans are:

◆ ***The Corporate Mission Statement***

This indicates the organization's overall purpose and direction. It answers basic questions such as: "*Why does this organization exist?*" and "*What business should it be in?*" It is necessarily expressed in broad terms, but should not be so broadly phrased as to lack focus. Statements such as "We want to provide the highest quality service at the cheapest fares" will not be particularly helpful to management seeking practical guidelines in order to be able to make difficult decisions. Kotler suggests that the mission statement should define the major *competitive scopes* within which the organization will operate.⁵ These include : the *industry scope* or range of industries in which the organization will consider operating; the *products and applications scope*, or the range of products (services) and applications in which the organization will participate; the *competencies scope*, or the range of technological and other core competencies that the organization will master and apply; the *market segment scope*, or the type of markets or customers the organization will serve; the *vertical scope*, or the extent of vertical integration to be allowed in the organization's activities; and finally, the *geographical scope*, or the range of regions (or countries) in which the organization will operate. Kotler also suggests that the corporate mission statement should stress the *policies* which the organization wishes to apply in

5

P Kotler, *Marketing Management, Analysis, Planning, Implementation and Control*, 8th ed. (Prentice Hall, 1994), pp. 67-68.

dealing with customers, suppliers, distributors, competitors and other important groups. Above all, he considers that the mission statement should provide a *vision* and a *direction* for the organization for the next 10-20 years.

The Corporate Mission Statement adopted by Chiltern Railways, one of 25 train operating companies recently established for franchise operation of the passenger train services of the former British Railways, is instructive:

- *Our aim is to be the best passenger railway in the United Kingdom*
- *All day, every day, we aim to offer a reliable, welcoming and value for money service*
- *Our business will prosper because customers use us repeatedly and recommend the service to others*⁶

This mission statement is backed up with more specific statements of the Chiltern Railways' corporate aims, such as : *Our aim is to make serious inroads into the 95 per cent of the population not using the railways: we are competing with the M40 motorway, not the West Coast main line.*

◆ **Corporate Objectives**

While the Corporate Mission Statement should define the broad purpose and direction of the organization in the longer term, the Corporate Objectives will have a more specific focus. They should indicate the specific targets, both physical and financial, to be achieved by the organization within the tenure of the corporate plan. For example, they could incorporate cost recovery objectives, such as “*Reduction of the operating deficit to \$ W million, by year X*” or productivity improvement objectives, such as “*Increase gross tonnes per annum per employee to Y, by year Z*”. They will provide a clear target at which the strategies and plans of all components of the organization will be aimed during the timeframe of the corporate plan.

◆ **Corporate Level SWOT Analysis**

“SWOT” means “Strengths, Weaknesses, Opportunities and Threats”. At the corporate level, a SWOT Analysis should provide an realistic assessment of the strengths, weaknesses, opportunities and threats working for or against the organization in its quest to achieve its corporate objectives. SWOT factors may be assessed in relation both to the organization's external and internal environments. For an external SWOT analysis, the organization would need to assess the likely influence of factors external to the organization which might present opportunities or threats for the organization. An example of an external

⁶ *Modern Railways*, February 1997, p.82.

opportunity might be the imposition by the government of increased road user charges on commercial road transport operators, since this might have the effect of improving the competitiveness of rail in relation to road transport operators. Conversely, an increase in allowable axle loads for trucks might be an externally imposed threat for rail, since it would reduce its competitiveness with road transport. Internal SWOT analyses on the other hand are intended to identify the SWOT factors of the organization, *in relation to those of its major competitors*. They are intended to identify any positive or negative characteristics of the organization which must either be exploited or corrected to enable the organization to achieve its stated corporate objectives. An example of an internal weakness might be the railway's inability to price flexibly in order to obtain additional traffic (when this would be a major strength for the competition). Conversely, an example of an internal strength might be the railway's ability to guarantee the security of freight consignments against damage or pilferage, when its competitors might not be able provide such guarantees.

◆ **Corporate Strategies**

Broad corporate strategies must be devised in order to ensure achievement of the corporate objectives. The important point about corporate strategies is that they must **directly** address specific corporate objectives. Thus, for example if the relevant objective is to reduce the incidence of in-service locomotive failures, the corresponding strategy might be to re-deploy fitters or diesel maintainers to outstations, where they can carry out routine preventative maintenance. Similarly, an objective to improve wagon turnrounds might be addressed by a strategy to increase block train running by offering rate incentives to selected major customers to accumulate loading for block train operation.

◆ **Manpower Plan**

The Manpower plan component of the corporate plan is intended to identify the overall manpower requirement for the railway organization in terms of numbers of employees required by grade/skill category and by location. These manpower requirements should be derived directly from the functional department plans and have their basis in the marketing or business unit plan.

◆ **Finance Plan**

The Finance Plan establishes a basis for managing the organization's cash flow during the tenure of the corporate plan. It incorporates revenue and expenditure forecasts derived directly from the functional department and marketing/business unit plans. Where relevant, it will also set out the forecast requirement for PSO/CSO supplements to revenue during the tenure of the corporate plan.

◆ **Investment Plan**

The Investment Plan details the organization's requirement for investment in new capital assets during the tenure of the corporate plan. The physical requirement

of rollingstock and locomotives, extra track capacity or new line construction, and terminal infrastructure is identified and costed in the plan. Again, these requirements are sourced from the assessment of a train operating plan which has its origins in the appraisal of customer needs in the Marketing plan.

**Box V Sample Corporate Mission Statement,
Corporate Objectives and Corporate Strategies**

1. Corporate Mission Statement

The mission of the XX Railway Company is to provide railway passenger and freight services of a quality and frequency matched to customer requirements throughout the territory of YY, and at fare and freight rate levels which will allow the services to be fully self sustaining

2. Corporate Objectives and related Corporate Strategies

Corporate Objective

Related Corporate Strategy(ies)

Achieve full cost recovery on commercial freight traffics by 2000

De-market LCL traffic through punitive pricing, offer pricing incentives for movement in block train loads, reschedule trains to avoid en-route remarshalling, and shed redundant shunting staff

Achieve full cost recovery on commercial passenger traffics by 2001

Increase fares by X% on all premium passenger services, upgrade coach interiors, introduce new corporate colour scheme and logo on coach exteriors, and introduce new look uniforms for on-train staff

Reduce staffing levels (by Y%) and working expenses (by Z%) of railway workshops by 2001

Implement outsourcing of all consumable locomotive components (such as rewired armatures) and introduce early retirement scheme for displaced personnel

Improve running performance of long distance passenger trains arriving at AA station to 95% of on-time arrivals by 2000

Introduce computerized approach track and platform allocation system and implement efficiency based incentive pay scheme for train control and station staff throughout the network

Box V provides examples of a Corporate Mission Statement, a set of Corporate Objectives and related Corporate Strategies. These elements of the Corporate Plan are distinguishable from those of Marketing or functional department plans in terms of their focus. The former focus on the railway organization as a whole, while the latter focus on individual market segments, services and locations. However, it is important to note that the former are directly derived from, and represent a summation of, the latter.

6. THE RAILWAY MARKETING PLAN

Apart from its importance as the primary source of input of customer related data as well as of traffic and revenue forecasts to the Corporate Plan, the Marketing Plan has a vital role as the vehicle for expression of: the organization's commercial objectives; the strategies for realization of these objectives; and the actions (with assigned responsibilities) necessary to implement the strategies. Necessarily, the focus of the Marketing Plan is at the level of individual traffic, or market, segments, and indeed an important element of the Marketing Plan is the definition of these segments. Realization of objectives set for individual segments will collectively result in achievement of the overall corporate objectives as identified in the Corporate Plan. A essential requirement of any Marketing Plan is that it must be both **practical** and **actionable**.

6.1 Market Segmentation

A good Marketing Plan must contain techniques for segmenting the market.

Markets consist of buyers and buyers are **not** homogeneous in terms of their demographic profiles, wants, purchasing power, geographical location, buying attitudes, and buying practices. Therefore it is unlikely that a broad marketing strategy applied across the entire spectrum of a railway's customers will succeed, because the needs of some (or probably most) customers will not be met in this process.

By contrast, separate marketing strategies focussed on individual customer groups, each consisting of customers with similar characteristics and needs, are more likely to succeed. These customer groups are called *market segments* and the process of identifying and separating these groups for the purposes of developing marketing plans and strategies and of managing sales force activities is called *market segmentation*.

Any, or all, of the six above-listed characteristics may be used to segment a market. In the case of railways, however, a two-tier process is likely to be involved.

First, the railway's customers will be segmented into *broad market or business groups*, such as:

- ◆ *Commuters*⁷
- ◆ *Medium-Long Distance Passengers*⁸
- ◆ *Freight Customers*
- ◆ *Parcels and Express Freight Customers*

⁷ This term is normally used to describe passengers who use railway services to travel between their homes in the suburbs of a city and their places of employment in the city centre. Typically, such journeys cover distances of no more than 100 km.

⁸ Generally used to denote passengers using rail to travel over distances of greater than 100 km, often between major cities.

- ◆ *Commercial Property Lessors*
- ◆ *Others (e.g. advertisers using railway property)*

Next, these broad groups will be divided into market segments.

For *Commuter* traffic, it is unlikely that there will be any need for further subdivision of the market, although in the case of a few of the region's railways (notably that of Indonesia), premium or first class commuter services are provided with the aim of capturing higher income business travellers, who might otherwise use private automobiles.

For *Medium-Long Distance Passenger* traffic, segments based on demographic/income characteristics may be appropriate. Again, some of the region's railways have focussed on business travellers⁹, while some (e.g. the Indian railways) have very successfully targetted group tour travellers and in conjunction with tour and hospitality agencies have developed specialized services to cater for the needs of this segment. Many of the region's railways have an obligation to provide "welfare significant" services, such as economy class services catering to the needs of low and lower middle income passengers and linking villages with key provincial centres, key provincial centres with other key provincial centres, and key provincial centres with the capital.

Within the higher income, business or tourist segments thus identified in the Medium-Long Distance Passenger market, there may be a further subdivision into service-based segments (e.g. air-conditioned sitting car services and air-conditioned sleeping car services).

For *Freight* customers, the subdivision into market segments is likely to be based on a combination of commodity type and handling mode (bulk, breakbulk and container). Almost all of the region's railways now identify container traffic as a segment in its own right. Other segments are mainly commodity-based. For example, in addition to containers, the Thai and Malaysian railways identify about 14-15 commodity based segments and the Indian Railways 10 or 11 commodity based segments. Each freight segment generally has its own requirements in terms of loading/transport cycle, wagon type, handling method and tariff (price). The commodity segments actually identified will be of particular significance to the railway seeking to segment its markets.

While there appears to be no obvious basis for the segmentation of parcels and express freight traffic, it is likely that this market may be subdivided on the basis of time-sensitivity (e.g. overnight delivery, second day delivery, etc.).

The Commercial Property Leasing market will desirably be segmented in terms of end use, e.g. Warehousing, Retail Trade, Office accomodation, Hotel accomodation, etc., and possibly also in terms of lease tenure (short, medium and long term).

⁹ Such as the Indonesian Railways with their *Parahyungan* and *Argogede* executive services between Jakarta and Bandung, and the Indian Railways with their *Shatabdi* and *Rajdhani* premium services between significant business centres and between the capital and significant business centres, respectively.

6.2 Purpose, Structure and Content of the Railway Marketing Plan

The formal *Marketing Plan* is one of the most important outputs of the marketing process. As indicated previously, it is desirable, if not essential, that the Marketing Plan should be developed as an integral part of a Railway Corporate Plan, and that it should identify marketing objectives and strategies which will support the achievement of the corporate objectives, as outlined in the Corporate Plan. However, unlike the Corporate Plan which will not normally be revised every year, the Marketing Plan should be revised annually, although it should also cover a longer planning timeframe (e.g. five years).

The purpose of the plan will be to: review past sales and profit performance; assess the potential of the railway for improved performance and traffic growth, relative to competitors; define or re-define (as necessary) marketing objectives; specify sales, pricing and promotional strategies to achieve growth projected in the plan; develop a programme of action to put the plan into effect; and establish methods and systems to monitor performance against the plan.

Box VI provides a possible approach to formulation of a Railway Marketing Plan. The structure and content of the plan, as illustrated in this box, reflect its purpose as stated above. The following paragraphs expand on the contents of the plan under the individual headings contained in the box.

6.2.1 *Executive Summary*

This is almost self-explanatory. It should provide top level corporate management with the ability to gain a quick appreciation of the salient features of the plan and of its key strategies and recommendations.

6.2.2 *Past Performance Review*

This review should reveal the performance of the railway over the past five years in relation to each identified market segment. Performance elements reviewed should include:

- ◆ *The total market volume*, or the total transportation volume, in each segment. For example, for Commuter Traffic, this might be the total number of commuter passenger journeys per year and the total commuter passenger kilometres per year, by all modes, within the defined commuter catchment area
- ◆ *The railway system volume and percentage share of the total market volume*, in each segment. In the case of the Commuter Traffic example, this would be the number of commuter rail passenger journeys per year, the total commuter rail passenger kilometres per year and the rail percentage share of the total commuter journeys and commuter passenger kilometres (for all modes), within the defined commuter catchment area
- ◆ *The revenue earned, the financial contribution* (revenue less long run marginal costs) *derived from that revenue, and the contribution rate* (e.g. contribution per passenger, passenger km, freight tonne or tonne km) , for each segment. In the Commuter Traffic case, this would be the total fare revenue per year generated by rail commuter

traffic within the defined commuter catchment area and the financial contribution attributable to that traffic (i.e. fare revenue less attributable long run marginal costs)

Box VI Structure and Content of the Railway Marketing Plan

SECTION	CONTENT
1. Executive summary	Brief overview of the proposed plan for quick vetting by top management
2. Past Performance Review	For each market segment, 5 year historical trend in market volume (traffic), railway system volume, and railway system revenue and financial contribution
3. SWOT Analysis	For each market segment, analysis of strengths, weaknesses, opportunities and threats facing the railway system as compared with its competitors
4. Marketing Objectives	For each defined market segment, definition (or re-definition) of marketing objectives
5. Marketing Strategies	For each market segment, statement of sales, pricing and promotional strategies aimed at achieving the plan's objectives
6. Action Programmes	Answers to questions: What will be done? Who will do it? When will it be done? How much will it cost?
7. Projected Sales and Profit	For each market segment, projection of traffic volume, revenue and financial contribution resulting from plan implementation
8. Resource Requirements	For each market segment, identification of requirements for terminals, track and signalling, motive power, passenger and freight rollingstock, and operational labour
9. Marketing Audit	Specification of method and systems for auditing performance against plan

Adapted from P Kotler, "Marketing Management, Analysis, Planning, Implementation and Control", 8th ed. (Prentice Hall 1994), p.104.

What is important in such a performance review is the **trend** in the various indicators. For example, has the rail market share in a particular segment increased, remained static, or reduced over the period reviewed? What has been the trend in financial contribution for a particular segment, relative to the trend in rail market share? [A rising trend in market share can often correspond with a falling trend in financial contribution rate, if the railway is forced by competition to trade off margin for volume by dropping its charges].

The performance review must provide a suitable foundation for the formulation of the marketing objectives and strategies.

6.2.3 SWOT Analysis

An analysis of the strengths, weaknesses, opportunities and threats confronting the railway *and its major competitors* in each market segment is an important element of the Marketing Plan. The purpose of this analysis, generally termed a *SWOT Analysis*, is to provide as objective an assessment as possible of the competitive status of the railway *in each market segment*. Factors normally considered in the SWOT Analysis include: the current and projected market shares of the railway and its major competitors; the relative financial strengths of the railway and its major competitors; the price and service sensitivity of demand and the relative abilities of the railway and its competitors to respond to customer price and service requirements; the technological strengths and weaknesses of the railway and its major competitors; and the opportunities presented for product/service diversification. Box VII illustrates an approach to completing a SWOT Analysis at the level of an individual market segment.

In common with the Past Performance Review, the SWOT Analysis must establish an adequate foundation for the formulation of Marketing Objectives and Strategies. For example, the *opportunities* identified in the case of individual market segments should provide an indication of the sort of objectives and strategies which are likely to be most appropriate for those segments.

It has to be noted that a detailed knowledge of competitors will be essential for the preparation of a good SWOT Analysis.

Box VII SWOT Analysis for a Rail Market Segment			
Market Segment: Containers			
SWOT Factor	Railway (Market Share: 15%)	Principal Competitors (Combined Market Share: 75%)	
		Road Transport Company A	Road Transport Company B
Strengths			
Financial Backing		Strong. is a subsidiary of diversified trading company X, with annual turnover and profit in 1995 of.....	Strong. Annual turnover and profit in 1995 of
Marketplace Linkages	Availability of abundant low cost land near up country stations provides possibility for ICD development	Control of warehousing activities provides ready access to freight forwarding joint venture business	Is subsidiary of shipping line Y and can control "in house" container transport business
Service Reliability		Delivery schedules met for 90% of consignments in 1995	Delivery schedules met for 95% of consignments in 1995

Transport Cost		Container haulage charges 20% lower than rail in '95	Container haulage charges 15% lower than rail in '95
Consignment Security	Damage to only 0.5% of consignments and no claims for pilferage in '95		
Weaknesses	<i>Note: In general, there will be an inverse relationship between the weaknesses of rail and the strengths of its competitors (i.e. the weaknesses of rail will be the strengths of its competitors and vice versa)</i>		
Opportunities	Strong possibility for rail to capture 90% of container traffic in thecorridor, by introducing block container trains operating near passenger speeds under contract rates and conditions	Involvement in warehousing offers opportunity for ICD investment and operation at locations, with consequent ability to secure "footloose" third party container haulage business	
Threats-	Likely increase in allowable gross weights of road vehicles and possible introduction of double road trailers will threaten dominant rail share of container movement in the corridor		

6.2.4 Marketing Objectives

As with the other elements of the Marketing Plan, the *Marketing Objectives* must be market segment related.

It is also essential that these objectives be:

- ◆ *practical and realistic* - i.e. capable of being achieved within the likely resource limitations facing the railway
- ◆ *linked to overall Corporate Objectives*; and **most** importantly
- ◆ *relevant and responsive to the actual needs of customers*

Marketing objectives must reflect the principal thrusts of the Corporate Plan. Two

examples of the formulation of marketing objectives in support of overall corporate goals are provided in the contrasting approaches of the Malaysian and Thai railways to the development of their respective landbanks.

The Malaysian railway (KTMB) has identified the commercial development of its landbank as a significant business opportunity, and indeed has established a strategic business unit, the Property SBU, for the purpose of exploiting this opportunity. For KTMB, property revenue already accounts for 21 per cent of operating income, and is growing significantly faster than revenue from any other source. In fact, property is expected to surpass the core transportation business as a source of revenue for KTMB, and accordingly marketing objectives and strategies are being developed by the Property SBU to target specific segments of the commercial property market.¹⁰

The Thai Railway (SRT), on the other hand, recently adopted a policy of developing its landbank for the main purpose of supporting its core transportation activities.¹¹ While it has within its organization structure a unit specializing in property management (*the Property Management and Development Bureau*), this unit has the authority to lease land to commercial property developers only after the needs of the railway's transportation businesses have been met. Revenue from property leasing currently accounts for only 8 per cent of the SRT's total operating income, but notwithstanding a focus on internal needs, is nevertheless expected to grow by 50 per cent over the two year period to 1998.

The need for marketing objectives and related strategies to focus directly on customer needs is well demonstrated by a recent case in Australia, as reflected in box VIII.

¹⁰ *Country Report for Malaysia*, October 1996

¹¹ *Bangkok Post*, Property Section, 22 November 1996

Box VIII Making Marketing Objectives Relevant to Customer Needs

In 1992, the National Rail Corporation was formed as a limited liability company to take over the operation of all interstate rail freight traffic from the four state government owned and one federal government owned rail systems in Australia. The government rail systems held 100 % of the shares in the new company and contributed the manpower and physical resources (including locomotives, wagons and terminal infrastructure) needed for its operation.

Among other things, the enabling legislation which created the NRC gave the organization commercial freedom to select from all interstate train operating activities those segments of the market in which it wanted to continue to participate and those from which it wanted to withdraw. Exercising this freedom, the NRC made a decision to progressively withdraw from the transportation of general freight in covered vans, or boxcars. This was to be achieved by setting tariffs at punitive levels in order encourage a shift of this traffic out of boxcars and into containers, which were perceived by the NRC to offer better profit potential for the future, as well as by reducing the operating priorities for van traffic.

One significant factor which this decision overlooked was that there was a demonstrated continuing (and growing) demand for transcontinental van services from national freight forwarding companies which owned rail connected warehouses in Melbourne and Perth. These companies had over the years developed efficient services based around the use of vans for directly conveying on behalf of LCL customers palletised cargo between rail sidings at either end of the transcontinental journey. A move into containers did not suit these companies or their customers, given their use of rail connected warehouses and given that the width of ISO containers is sufficient to accommodate 1.9 pallets, or in practical terms only one pallet. The outcome was that at least one forwarding company was able, with the support of the government rail systems, to introduce its own dedicated transcontinental trains on a limited weekly frequency. The company claims that it is not satisfying all of the demand on offer.

This case demonstrates very clearly that railways need to have a good understanding of their customers' business before committing themselves to marketing objectives and strategies which could deprive them of profitable business in future. In this case, the market challenged the conventional wisdom that containers offer an acceptable answer to the transport needs of **all** general freight customers and conveyed a message to the railway that customer needs had to be fully understood.

Source: Network Quarterly (Australian Railway Association Magazine), October-November 1995

6.2.5 Marketing Strategies

As with Marketing Objectives, the strategies devised to achieve these objectives must be practical, actionable (realistically capable of implementation) and, above all, relevant and responsive to customer needs. They must also relate directly to marketing objectives identified for each market segment.

Marketing strategies include actions taken to modify elements of the marketing mix - product, price, place and promotion - in order to achieve marketing objectives.

The Indian Railways provides an example of one of the region's railway systems which has defined clear objectives for each of its market segments and has then

successfully applied strategies to achieve these objectives. The main problem faced by the Indian Railways is a serious shortage of route capacity. Far from having insufficient traffic on its trunk routes, the Indian Railways suffers an excess of traffic in relation to the capacity of these routes. Operating priority on these routes is given to passenger trains, and freight trains incur major delays and frequent cancellations as a result. Since bulk traffics account for 94 per cent of the freight tonnage carried by Indian Railways, empty running has also become endemic.

In an effort to fill empty bulk trains with revenue earning traffic, thereby also reducing the number of freight trains and the pressure imposed on limited route capacity, the Indian Railways has successfully applied price and service incentives for backhaul traffic. One example is the backloading of autocarrier wagons with imported tractors. Cars manufactured for export at the Maruti plant near New Delhi are despatched in trainloads of autocarrier wagons. The wagon blocks deployed in this traffic had hitherto been returned empty, but commercial incentives offered by the railway have succeeded in securing backloading in the form of imported tractors arriving at Bombay port for distribution to the northern areas of India. The traffic in the backhaul direction is marginally costed and runs to tight schedules in order to maintain despatch reliability for the automobile traffic ex Delhi.

Other backloading opportunities are under current investigation by the Indian Railways, including the backloading of empty coal wagons with limestone traffic from Rajasthan in the northwest to steel plants in the Delhi area and the movement of fertilizer in wagons used in the reverse direction for the movement of coal.

6.2.6 Action Programmes

Another important element of the Marketing Plan is the statement of actions needed to put the plan into effect and the assignment of responsibilities for these actions. This feature of the Marketing Plan recognizes the vital role of Marketing in leading and co-ordinating all of the railway activities aimed at delivery of railway services to satisfy customer needs. Thus, actions will be required of all functional departments, but especially the Operations, Mechanical Engineering and Civil Engineering departments, to support achievement of the organization's commercial objectives. For example, if high standards of locomotive availability are necessary in order support frequent high volume traffics, then the Marketing Plan will require actions on the part of the Chief Mechanical Engineer and his staff to assure the necessary level of availability.

6.2.7 Traffic, Revenue and Profit Projections

Forecasts of traffic volume, revenue and financial contribution are important outputs of a Marketing Plan (and important inputs to the Corporate Plan). They are market segment-related and are usually prepared as annual totals over a five year timescale. In most organizations, their preparation will be the responsibility of the Marketing Planning Manager and his staff.

While sophisticated mathematical models may be employed to generate traffic

forecasts, experience has shown that these techniques rarely produce reliable results. Better results have usually been obtained when the traffic forecasts prepared by railways have been based on information received from customers in the case of freight traffic and on a combination of government demographic studies and market surveys in the case of passenger traffic. In the case of freight traffic, there is no better substitute for the production and/or distribution plans of customers (or potential customers) as a basis for traffic forecasts, but access to this information depends upon the establishment of a strong working relationship between a railway's customers and its salesforce .

Preparation of revenue forecasts is a comparatively uncomplicated task. It requires making assumptions about the inflation of passenger fares and freight rates and applying the projected rates to the physical traffic forecasts.

Forecasts of market segment financial contributions are vital inputs for the forecasts of the corporate profit and loss position in the Corporate Plan. Their preparation depends upon the availability of suitable up-to-date estimates of traffic costs, by market segment. (Chapter 8 addresses the issues associated with the production and interpretation of these cost estimates).

6.2.8 Determination of Railway Resource Requirements

The key role of the Marketing Plan in providing information on customer requirements as a basis for determining the railway's needs of human and physical resources was emphasized in chapter 5.

This is not to suggest, however, that the Marketing Plan will be capable of identifying all of these needs. For example, the number and type of locomotives required in a railway system's fleet must be determined as part of a specialized locomotive fleet planning process which will incorporate information on train sizes, train scheduling, maintenance scheduling and running performance characteristics, in addition to traffic forecasts by route. Marketing inputs will nevertheless be vital for the preparation of functional department plans on a consistent foundation of traffic forecasts which reflect actual customer needs. In addition, the Marketing Plan must be capable of directly transferring to these functional department plans details of customer needs for specialized resources, such as specialized wagons or specialized equipment for the loading and discharge of wagons.

6.2.9 Marketing Audit

The measure of the worth of a plan, especially a Marketing Plan, is not its quality in terms of content and presentation but rather the extent to which its objectives were achieved and whether it materially contributed to the achievement of overall corporate goals. A plan cannot be satisfactorily implemented unless the action programmes it incorporates are actually put into effect. Therefore it is essential that the implementation of the plan be monitored or audited against its stated objectives.

The Marketing Plan must contain details of the methods and systems to be employed

in carrying out this audit. Factors to be audited include not only revenue achieved against plan, but physical performance factors such as operating punctuality in the case of passenger trains or percentage of wagon orders satisfied in the case of freight traffic. Responsibility for auditing performance against plan should rest with a multidisciplinary (or inter-departmental) committee within the railway, since achievement of Marketing Objectives (as observed previously) will depend upon the actions of personnel from every functional department, not merely of Marketing personnel.

The auditing process must be assisted by the availability of a comprehensive and up-to-date Marketing Information system. The desirable features of such a system are covered in chapter 9.

7. **MARKETING MANAGEMENT FUNCTIONS**

Selling, pricing, providing advice to customers in the area of logistics and materials handling, and promoting the railway product are the main “doing” elements of Marketing in a railway context. It is important that these activities should operate in harmony with one another, in order to achieve maximum impact in the marketplace. The responsibility for ensuring that these activities complement one another is that of the head of the Marketing unit.

7.1 **The Sales Function**

A railway organization which is customer-focussed will have a team of representatives, a *sales force*, whose primary (and crucial) role is to maintain continual liaison with customers. In conjunction with operating personnel at the field level (freight and passenger terminals, local stations), this sales force provides the main point of contact between the railway and its customers and as such can make or break the railway system’s image in the eyes of its clientele.

Selling, or the generation of new business for the railway, is just one of the functions of the sales force. Other major salesforce functions include:

- ◆ *Customer Servicing*, or representing the needs of existing customers to those units of the railway organization (e.g.. Operations) which are responsible for service delivery
- ◆ *Sales Reporting*, or reporting on business, physical volume (passenger/passenger km or tonnes/tonne km trends within assigned sales territories or market segments
- ◆ *Market Intelligence*, or the collection of information on the tariffs, services and activities of competitors

The sales force will be most productive if its individual members are permitted to specialize in particular market segments. In the freight business, this specialization might involve the coal, bulk cement and bulk ore segments being serviced by one sales representative, the container and intermodal segments by another sales representative and so on. Similarly in the passenger business, one sales representative might service the group tours segment, another the business travel segment, and so on. Such specialization will enable sales personnel to become familiar with the specific needs and problems of particular groups of customers and to effectively represent their interests of these customers in dealing with those units of the railway organization which are primarily responsible for service delivery.

In its most advanced form, a railway sales force will have a detailed knowledge of the corporate, production and distribution plans of its principal customers, and will be able to use this knowledge in order to develop jointly with these customers a *price/service package*¹² which

¹² For railway freight traffic, a price/service package might include all activities associated with door to door delivery of consignments at a competitive tariff rate. For railway passenger traffic, a price/service package might include comprehensive travel arrangements (hotels, sightseeing, rail and local transport) for an all-inclusive charge per passenger.

could effectively tie the business of the latter to rail over long periods of time. Top flight railway sales representatives will develop almost as much knowledge about their customers' businesses as the customers themselves.

The primary task of the sales force will be to visit customers on a regular call cycle, e.g.. once or twice per month, 3-4 times per year, twice per year, etc. The frequency at which customers are visited will depend upon the actual or potential size of their business to the railway.

Full development of the sales function will involve setting sales budgets or targets, in both physical and financial terms, coupled with incentive rates of pay, for individual sales representatives. Under this arrangement, sales representatives would participate in target setting, but once the targets have been agreed, would be bound to meet them, in order to qualify for incentive pay.

7.2 The Pricing Function

The setting and structuring of passenger fares and freight tariffs is one of the most important functions of the Railway Marketing unit. It will normally be the direct responsibility of the head of the Marketing unit, who will be assisted by a Rates, or Tariff Administration, Manager and associated staff. However, decisions about the pricing of very major traffics will often be taken at the highest levels of management in the railway organization.

Different conditions apply to the pricing of passenger and freight traffic. Passengers normally travel at *published* fare rates (i.e. published in the sense that the fare rates are officially gazetted in the railway system's Book of Fares, which may or may not be revised annually). Passenger fares, especially at the lower end of the scale, are often subject to the scrutiny and approval of governments (and in some cases parliaments). Considerably more flexibility, however, usually applies to the pricing of freight traffic. To the extent that the railway has the commercial freedom to vary its charges, the same approach to price setting will apply to both passenger and freight traffic.

The railway pricing function is likely to have to undergo a significant change as a consequence of the emergence in the region of the concept of *open track access* (which has already been widely accepted in Europe, North America and Australia). Subject to contractual conditions being met, open track access allows usage of railway infrastructure by private sector operators who provide and operate their own locomotives and rollingstock. The concept is potentially applicable both to passenger and freight services, but initially is more likely to be applied to freight services which have the potential to offer attractive financial returns for private investors and operators. If the concept gains momentum throughout the region it could fundamentally change the traditional role of railway organizations. Rather than being comprehensive service providers, railway organizations would instead become infrastructure providers and would levy charges on private operators for their usage of that infrastructure. Under the open access regime, railway marketing personnel are likely to have an important role in setting and reviewing the structure and level of track access charges.

7.2.1 Railway pricing concepts and principles

(a) Railways as price takers

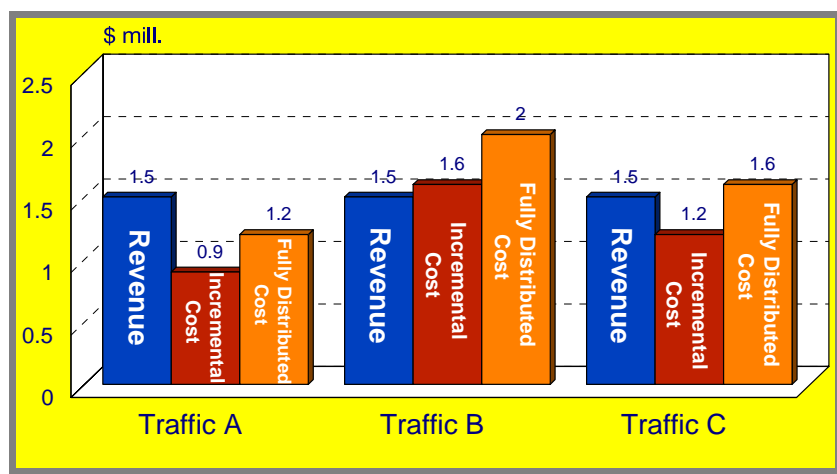
This document has already outlined some of the constraints imposed by governments on railway managers in this area, but to the extent that they have the freedom to set prices below a ceiling set by governments, marketing managers have a duty to set prices, or to decide on the acceptance or rejection of traffics *for which prices are established by competition*, with reference to costs.

This last-mentioned point is an important one, since in a market economy the level of prices is a function of the intensity of competition more than of any other factor. The market sets the prices and producer organizations, including railways, must then decide whether the profit margins possible from these prices will be sufficient to satisfy overall corporate profit objectives. This is not to suggest, however, that the focus should entirely be on prices. The scope to implement cost reduction strategies should also be fully investigated, in order to ensure a more attractive margin of profit from individual traffics. This would imply the need for an effective traffic costing system which will produce reliable estimates of costs which are specific to individual traffics, both passenger and freight. The specifications of such a system are discussed in chapter 8.

(b) Traffic acceptance/rejection criteria

It was suggested in chapter 2 that satisfaction of the needs of all customers (actual as well as potential) might not necessarily be consistent with the achievement of corporate goals and that one essential requirement of a good marketing system is the capacity to target those customers, or potential customers, whose business will contribute most to the achievement of these goals. Figure 7-1 illustrates how the process of evaluating the profit contribution from individual traffics might work in practice. In the example shown, three hypothetical traffics, each having the same origin and destination, have the potential to generate the same level of revenue, but for different levels of cost. The actual nature of these traffics is unimportant for the purposes of illustration. They might be freight traffics or they might be passenger traffics. In either case, the same principles will apply.

Figure 7-1 Identifying Railway Profit Contributors



Two types of cost are shown for each traffic:- one, an *incremental cost*, which is the addition to the railway system's total costs resulting from carrying the particular traffic; and the other, a *fully distributed cost*, which includes overhead, or fixed, costs in addition to the incremental costs just described. For the purposes of this example,

it is assumed that the potential revenue yield from each traffic *is determined by the level of tariffs offered by competitive transport modes*. It is thus beyond the control of the railway system. The level of costs, however, is to a large extent, determined by management decisions, but will nevertheless differ from traffic to traffic, depending upon the characteristics of the traffic being costed.

The cost relativities shown in the example are unimportant, except that they illustrate the approach to be taken by the railway management in deciding whether to accept or reject a new traffic opportunity. In the case of *Traffic A*, there is a significant positive surplus of revenue over the level of fully distributed cost, and hence Traffic A would in normal circumstances be accepted. The revenue yield from Traffic B, however, would be insufficient to cover even its incremental cost and in normal circumstances this traffic would be rejected. In the case of Traffic C, revenue yield would be sufficient to cover the incremental cost associated with the traffic, but would be insufficient to cover its estimated fully distributed cost. In this case, the railway management *would be fully justified in accepting the traffic, since it would provide a financial contribution above the level of incremental cost to offset system wide overheads* (which would not change as a result of its acceptance).

(c) *Price as a capacity rationing mechanism*

Many of the region's railways face a shortage of track capacity - at least on their major trunk lines. Their capacity problems are compounded by the traditional priority given to passenger trains, which often leads to a denial of track capacity for the operation of freight trains and hence to the risk that profitable or potentially profitable freight traffic could be lost by the railway.

Scarce track capacity may be rationed in one of two ways: it may be done directly by changing operational priorities in favour of profitable traffic or it may be done indirectly through the pricing (tariff setting) mechanism.

Some of the region's railway systems have been considering the use of pricing as a means of rationing scarce track capacity in favour of profitable freight traffic. Specifically, this would be achieved by including in passenger train costs, and ultimately in passenger fares (if permitted by government regulations), an opportunity cost equal to the freight haulage revenue which would be foregone as a result of passenger trains occupying operating paths which would otherwise be available for freight trains.

Even if railway organizations are prevented from setting passenger fares, the cost data so developed may be used as a basis for lobbying governments in order to create a better understanding of the full consequences of allocating priority to passenger trains.

7.2.2 Setting of Passenger Fares

Although, as has been observed, railway passenger fares are in many cases subject to fairly tight control by governments and railway organizations have little option but to accept traffic at published rates, there is considerable scope for innovation in modifying fare structures even where price regulation is enforced.

For example, in the area of rail commuter traffic, the fare structure may be varied in order

to modify demand in peak travel periods when the resources of the railway are under greatest pressure. This strategy, known as a **peak load pricing** strategy, overall will have a neutral impact on fare revenue collection, since fares will be increased during specified peak periods and reduced during specified off-peak periods. However, if the right relationship is struck between peak and off-peak fares, then such a strategy can have substantial benefits in terms of reducing the pronounced peaks usually associated with morning and evening urban rail travel and contributing to a more even demand pattern over at least 12 hours (0600 hours-1800 hours), per day.

An alternative to a peak load pricing strategy is an **off-peak** pricing strategy whereby discounts are offered off the standard commuter fare for travel outside of designated peak periods. Such a strategy has the dual objective of redistributing demand from peak to off peak travel periods and of attracting new passengers from other urban transport modes. One railway system which has introduced an off-peak pricing strategy for its commuter traffic is the Malaysian Railway (KTMB), as may be observed from box IX.

Similarly, innovative fare structures can facilitate integrated or transfer ticketing between different urban transport modes. Such a strategy is being appraised by KTMB for application to its commuter services in the Klang Valley, as may be seen in box IX.

Box IX

Innovative approaches to fare structuring on the KTM commuter network

In August 1995 electrified commuter rail services were inaugurated on a double track network of 153 km in the Klang Valley, which includes Kuala Lumpur, the capital city of Malaysia. These services are being managed under their own identity as *KTM Komuter*. Bus feeder links between commuter stations and off-rail origins/destinations are provided through arrangements with Intra Kota and Park May, the two major urban bus operators in Kuala Lumpur. A limited number of car parking spaces at some stations provide for *Park and Ride* traffic.

Market research carried out prior to the launching of the services indicated that the commuting public were willing to pay premium fares for rail travel on the basis that it would be more comfortable, faster and free of congestion, as compared with bus travel. Accordingly, KTMB set the initial fares for the service at a level 15-20% higher than equivalent bus fares, with a minimum RM (Malaysian ringgits) 1.00 for the first 11.1 km within a zone, RM 0.09 per km for 11.1 to 45 km, and RM 0.06 per km thereafter. Under this structure, a 70 km commuter trip would cost RM 5.55 (approximately US\$ 2.20).

KTMB then incorporated in the commuter fare structure an off-peak flat fare of RM 5.00, available for travel anywhere on the commuter network during a weekday after 9.00 am. Assuming a return journey, the same 70 km commuter trip if taken on a weekday after 9.00 am would cost only RM 2.50, or about 45% of the standard fare.

Future pricing initiatives being contemplated by KTMB for its commuter services include a common ticketing arrangement with the feeder bus operators (involving the use of electronic smart cards) and an all-inclusive Park and Ride ticket.

Sources: ESCAP Survey Mission and Country Report for Malaysia

A final type of innovation in the fare structure applicable both to commuter and longer distance passenger traffic is the concept of the *stored value* ticket. This provides an incentive for increased rail travel by permitting passengers to bulk buy their tickets at a reduced fare per trip, and if well managed such a pricing strategy can lead to substantially increased ridership. Within the region, not all segments of the passenger business for rail are price controlled, however, and for those segments which are not subject to fare caps, there is considerable scope to tailor

Box X Strategic pricing of passenger services – the experience of India, Indonesia and Pakistan

Some of the region's railways, which otherwise face fare regulation for the lowest fare segments of their passenger business, have a degree of pricing freedom at the top end of this business and have responded with price and service packages targeted at promising market segments. In most cases, the targeted market segments are generating revenue which more than covers their operating costs, and in some cases targeted segments are self sustaining (i.e. generate sufficient revenue to provide for asset renewal). India, Indonesia and Pakistan exemplify railway systems which have been able to apply strategic pricing in order to enhance the financial performance of their passenger business.

1. **India.** The *Shatabdi Express* trains operated on 7 medium distance routes originating from the capital, New Delhi, answer the need for business travel to and from important commercial centres not more than 500 km from the capital. These trains are comprised of a mixture of air-conditioned cars with fully reclining seats and non-air-conditioned cars with bench seats. They operate to fast schedules (maximum speeds generally 130 km/hour), and depart in the morning and early evening. First class fares have been fixed at rates exactly double those of the economy class. As an example, the first class fare from New Delhi to Amritsar (a distance of about 450 km) is Rs.840 (approximately US\$ 23.50) while the economy fare is Rs. 420 (US\$ 11.75). For the overnight travel market, Indian Railways operate *Rajtani* sleeping trains between Delhi and the state capital cities of India. These trains offer premium comfort standards as compared with regular sleeping trains, with only 18 sleeping berths per car, instead of 48-72 berths in the case of the regular trains. The fares of the *Rajtani* services are 25% greater than the fares of services with 48 sleeping berths per car, but include the cost of an evening meal and breakfast. Also at the premium end of the rail passenger market in India are the "hotel trains" offering travel, accommodation and tour packages, generally of a week's duration. The first of these services, the *Palace on Wheels* which started in 1981 will soon be followed by five more. Fares are expensive - of the order of US\$ 300 per person per day, but passengers receive all meals, accommodation and local tours in addition to travel.

2. **Indonesia.** Fast passenger trains have been operated on the 180 km route between Jakarta and Bandung for about 8 years. These trains, known as *Parahyangan* expresses, have two classes of accommodation - fully air-conditioned executive with a fare of Rp. 25,000 (about US\$ 10) and non air-conditioned business class with a fare of (US\$ 6.80). Travelling time is about 2 hours and 40 minutes, with 8-10 services per day, and morning and evening departures are scheduled to allow passengers a full business day at destination. During 1995, the *Parahyangan* trains were supplemented by premium class *Argogede* trains which run to faster schedules (2 hours and 15 minutes), but have only one early morning and late evening departure per day. The fare charged for this service is Rp.30,000 (US\$ 12). Fares on *Parahyangan* services are double those of the premium class bus operators on the route, but the railway maintains a dominant market share because it can offer transit times which are at least 30% shorter than road services. The punctuality of these trains is closely monitored.

3. **Pakistan.** In April 1996, the Pakistan Railways in a bid to attract increased patronage of its Lahore-Karachi passenger services as well as to lift the financial performance of these services introduced a new fully air-conditioned overnight train composed entirely of sleeping cars. This train, the *Karachi Express*, runs to a non-stop 15.5 hour schedule on the 1230 km route between the two cities. Two classes of sleeping berth are available - a lower class of 76 berths in each of 14 cars and an upper class of 22 berths in a single car - giving a capacity for the train of 1086 passengers. The regular lower class fare is Rs.1430 (approximately US\$ 37.60), but a special promotional fare of Rs.1300 is being offered during the winter months to maintain high load factors. A small fare differential is maintained between this train and the *Shalimar Express*, which operates on the same route, but to a significantly slower schedule. The *Karachi Express* has achieved an average load factor of 85% since its launching and generates enough revenue to cover not only its variable cost, but its fully allocated cost as well. It is the only passenger train in Pakistan to do so.

Sources: ESCAP missions and Country Reports

fare/service packages to suit the needs of different categories of passengers. In this context several examples are available from within the region. In Indonesia and India, comparatively short distance services catering mainly for the needs of business travellers have been targeted, while also in India and in Pakistan, the long distance overnight travel market has been targeted (see box X).

7.2.3 Setting of Freight Tariffs

There are basically two types of rail freight tariff. One type is a rate which is published in the Railway Tariff Book and is available to all freight customers, while the other is a negotiated rate which is usually covered by a written freight haulage contract between a railway and individual customers, and is only available to the contracting parties.

(a) Published freight tariffs

Traditionally, railway freight tariffs were always published. Their main feature was that they were (and in some cases still are) inordinately complex, covering many commodity classifications and graduated by distance within small intervals. The current Goods Rate Table of the Pakistan Railways, for example, contains 30 different commodity classes, but the tariff rates applicable to these classes are graduated by intervals of 10 km from 251 km up to 600 km and of 20 km thereafter up to 5,000 km.¹³ This makes the task of calculating applicable tariff rates an extremely complex one for railway staff and their customers alike. For example, calculating an all-up tariff for hauling a particular commodity a total distance of 1,000 km involves the application of rates for 55 individual distance intervals.

In recent years, some of the region's railways have made considerable progress in streamlining their traditional railway freight rate structures, by broadbanding both commodity and distance classes.

However, traditional commodity and distance based freight rates have been made practically obsolete by the advent of container traffic on rail, since the commodity contents of containers are irrelevant both to the costs of railway operators and to the charges they may apply for haulage. (The first factor is mainly related to the overall weight of the container and its contents, while the second is usually determined by market competition). Container tariffs have therefore evolved as rates per container unit, graduated by size, e.g. 20 ft, 40 ft, etc, and (possibly) by loaded/empty status¹⁴, and quoted for a given route. Such rates are widely known

¹³ Pakistan Railways: *Goods Rates Table*, 1 August 1996.

¹⁴ Throughout the region, rates for empty container haulage are usually about half those for loaded container haulage. **However, the only basis on which such a differential can be justified is that it reflects competitive forces.** It cannot be justified on the basis of cost differences since, owing to the influence of wagon and container tare weight, the cost of carrying a loaded container is rarely as much as double that of carrying an empty container. Railway organizations which currently apply such a tariff structure should, unless they are bound to the contrary by government policy, consider bringing empty and loaded container rates closer to parity. A similar observation applies to preferential tariffs applied to the haulage of export containers, except that in this case any rate differential, unless justified by competitive pressures, **should be eliminated completely.** Railway organizations cannot be expected to be the providers of subsidies to any section of the rail user community. This is properly a role for governments, many of which, in any event, still insist that their railway systems work towards the achievement of full cost recovery!

as **“box rates”**. The tariff setting practices of containership operators have had a lot to do with the adoption by railways of box rates for containers. Clearly, it is important that the rate structures which are adopted and applied by railways should reflect internationally accepted practice in the transportation of containers. The recent experience of the Viet Nam Railways in launching its container transport service provides a useful demonstration of this, as can be seen in box XI.

Box XI Container tariffs in Viet Nam

Vietnam Railways launched into container haulage only in early 1996, with the acceptance of container traffic between the northern port of Haiphong and Hanoi. Its entry into this business was prompted by the poor availability of efficient alternative transport services (the highway between the two cities being heavily congested and in a poor state of repair and riverine services being prevented by the lack of suitable off-loading facilities in Hanoi).

Initially, the railway was unprepared to accept this new business - it lacked the specialized rollingstock, handling facilities and, above all, a commercial philosophy and system to support container haulage. It also lacked a suitable tariff structure and initially attempted to apply traditional commodity based rates (for five classes of goods) to container movement.

Recently, a specialized container tariff was established. It is distance based and graduated by intervals of 1-100 km, 101-700 km, 701-1300 km, and greater than 1300 km, but it is a wagon weight based rate rather than a box rate. For example, the charge applying to the use of wagons capable of carrying two 20 ft containers is based on the nominal payload of the wagon (normally 30 tonnes), while that applying to the use of a wagon capable of carrying a single 20 ft container is based on the greater of the actual weight of the container or a 20 tonne minimum. This rate structure could penalize customers who are forced by lack of suitable wagons to load a single 20 ft container on a two slot wagon.

In June 1996, Vietnam Railways entered a joint venture agreement with the New Zealand Railway company to establish specialized container haulage and handling services in Viet Nam. The success of that joint venture will depend upon it being able to compete effectively in both service and price. The latter should be based on internationally accepted charging practices for container haulage, but above all should be competitive. Application of the existing rate structure to a Hanoi-Haiphong TEU movement would result in a charge of Dg.378,750 (about US\$ 34.50), assuming the container was loaded as one of a pair on a wagon. This charge, however, could easily double when handling and local delivery charges are added. A freight forwarding company representative in Hanoi indicated that the prevailing all-inclusive road charge was US\$ 80 per TEU container, but that road charges as low as US\$ 60 per TEU were becoming common. *Sources: ESCAP Survey Mission and Country Paper for Viet Nam*

Another disadvantage frequently associated with a published freight tariff structure is that rates cannot be varied on the authority of railway management alone, often requiring government (and in some cases) parliamentary endorsement. Different railway systems have adopted different approaches to this problem. One railway system visited during the course of the ESCAP survey missions indicated that while it could not vary the rates in its tariff book without government approval, it did have authority to arbitrarily reclassify commodities from low rated classes to high rated classes and also to vary the minimum chargeable tonnage per wagon, in order to improve revenue yields from traffic moving at published rates.

However, discounting off published rates is a practical option for most of the region's railways. Discounts may take the form of a reduction in the rates billed or of rebates credited to a customer's account after the freight bill has been paid. If discounting is applied, care must be taken to avoid adverse reaction from other customers who might consider themselves disadvantaged by being denied discounted rates. There has to be equity in the rules applying to rate discounts, and most importantly there has to be an adequate quid pro quo for discounted

freight charges. Usually, this takes the form of a guaranteed minimum volume of traffic (tonnes, TEU, number of wagons or trains loaded) within a specified period, but discounts can also be applied in order to induce other types of efficiencies in the use of railway resources by freight customers, such as discounts for individual wagon loading above a specified minimum tonnage or cubic measure, or for rapid turnaround of wagons at loading points.

(b) *Negotiated freight tariffs and long-term haulage contracts*

As suggested earlier, negotiated freight rates are usually incorporated into written long term haulage contracts between a railway and individual major customers. Such contracts normally have a tenure (period of application) of 3-5 years, but in some cases apply for periods of as short as 12 months.

A minority of the region's railways depend on haulage contracts for most of their freight revenue, but there are strong advantages to be gained by railways from contracting with freight customers, not the least of which is the maximization of profitable freight volume and the removal of uncertainty about revenue levels. Usually, customers signing haulage contracts with railway organizations will agree to commit a minimum volume of traffic per month or year to the railway and in return will receive a reduced freight rate and a guaranteed standard of service. Some contracts include penalty clauses for shortfalls of performance by either party. For example, if customers fail to load minimum volumes within specified periods (assuming no adverse impacts from railway service), they might be required under the terms of the contract to pay a higher freight rate. Similarly, if the railway fails to deliver the specified standard of service (eg. satisfying 100% of all wagon orders, or meeting transit time requirements), it might be required under the terms of the contract to compensate the customer by reducing freight charges or paying rebates.

The freight tariff(s) negotiated as part of a haulage contract will usually be subject to revision (to recover cost increases) *within the period of the contract*. This frequency and extent of tariff revisions can either be determined by agreement between the parties (as is the case with the container haulage agreement currently in force in Thailand - see box XII) or specified in the contract. In some cases contract tariffs are subject to automatic adjustment in line with the movement in official price indexes - for example, in Australia, steel haulage contracts concluded between the railway systems and the main steel producer, BHP, have for many years contained freight rate adjustment clauses permitting movement of rates in line with a composite (and complicated) index made up of several relevant official indexes, such as the railway labour cost index and the fuel price index. *In order to avoid disputes, it is highly desirable that any railway organization contemplating adopting this method of adjusting the level of its contract tariffs should choose a relatively uncomplicated adjustment formula.*

The minimum requirements for haulage contracts to apply successfully might be stated as follows:

- ◆ Customers should be able to offer a *sufficient volume of traffic to regularly fill dedicated block freight trains* operating between specified origin and destination pairs, and to commit to moving a *minimum volume within a twelve month period*
 - ◆ Customers should be able to adhere to a *relatively uniform loading pattern* - that is, they should be able to provide sufficient loading for a fixed number of trains per day or per
-

week, in order to avoid pressure on limited crew, motive power and wagon resources, or alternatively to avoid underutilization of committed resources;

- ◆ Customers *must provide their own efficient loading and unloading facilities*. These must be rail connected (or, alternatively, be located near major railway marshalling yards) and desirably be capable of receiving and despatching entire trains - in order to avoid costs of train assembly/disassembly, which would have to be passed on in the haulage tariff
- ◆ The railway must have the ability to *provide dedicated resources for the operation of block trains, as well as to guarantee block train customers operational priority*, if required (in many cases, block trains need to operate to timetables and in some cases may compete with passenger trains for line occupation)
- ◆ Both parties must be willing, and have the capacity, to *make long term contractual commitments* (most haulage contracts are negotiated for periods of 3-5 years)

The types of commodity traffics which are best able to meet these requirements are bulk traffics, such as coal, other bulk minerals, bulk agricultural commodities, bulk fertilizer, petroleum and cement. However, in some cases container traffic flows have been able to satisfy these requirements, especially where they have been organized to feed containers from ports to hinterland ICDs. The railway systems of Malaysia and Thailand have achieved a creditable level of success in contracting with major shipping lines (in the case of Thailand) and inland terminal operators (in the case of Malaysia) for container block train operation. Indeed, the five year contract initiated between the State Railway of Thailand (SRT) and the American President Line (APL) in 1989 for the haulage of containers from Sattahip and subsequently from Laem Chabang Port to an ICD at Bang Sue in Bangkok perhaps provides a model which other railway systems can adopt or adapt to their own requirements (See *box XII*).

Long term haulage contracts will also be suitable in cases where customers can commit to the provision of their own rollingstock and/or locomotives. An example is to be found in the "Own Your Own Wagon" scheme of the Indian Railways. The OYO scheme works on the basis of customers making lease payments amounting over a year to 16 per cent of the cost of a wagon. In return for their contributions to the capital costs of rollingstock, they pay discounted freight tariffs and receive guaranteed wagon clearance on demand. At the time of the ESCAP mission to the Indian Railways in September 1996 approximately 12 freight customers had availed themselves of the OYO incentives and they included tea factories, fertilizer factories, cement plants and petroleum companies. The scheme has the potential to release funds currently expended by the railway on new wagon acquisition (estimated at about US\$ 560 million annually) for infrastructure development.

It is important to note that, whatever the form and structure of the tariff system adopted for long term rail haulage contracts, the actual charges established must be competitive with those applied by alternative transport modes. In this context, the most successful agreements will invariably be those which permit regular review (and adjustment if necessary) of contract tariffs in relation to the charges of competing transport modes.

Box XII Long-term haulage agreement: Thailand

A five year agreement for the haulage of containers between Eastern Seaboard ports and Bangkok was first concluded between the State Railway of Thailand and the American President Lines in 1989. This agreement was renewed for a further five years in 1994. The key features of the agreement are:

- (i) **The railway is required to provide a train service consisting of the two way movement of container flat wagons between the Eastern Seaboard ports and Bangkok, irrespective of whether these wagons convey containers or are empty.** The significance of this is that, in the case of empty train running (perhaps to suit customer operational requirements for wagon re-positioning), the railway is entitled to be paid the full rate of the agreed tariff applicable to haulage of trains loaded with containers. [It is understood that this condition was modified in the second contract to permit payment of 80% of the charge applicable to loaded trains]
- (ii) **The customer (APL) is responsible for container loading and unloading, and for the provision and maintenance of all container and cargo handling equipment, at the rail served ICD.**
- (iii) **The railway must provide locomotives, crews and container wagons to operate Eastern Seaboard container services, the level of these resources being determined by the daily peak number of services to be operated.** The latter is based on a 12 month operating plan jointly agreed and reviewed by the parties at 6 monthly intervals. This plan also provides the basis for setting both an average or *norm* and a *minimum* number of trains to be run daily. The configuration (number and type of locomotives and wagons) of these trains is separately specified in the contract.
- (iv) **There is a base tariff for haulage of single container units, with two separate rates, for containers of up to 20 feet in length and for containers of greater than 20 feet in length.** These rates apply irrespective of whether containers are loaded or empty, or whether they are for import or export. From year 3 of the agreement (1991), they have been charged on a *per train* basis. Tariff rates may be jointly reviewed from time to time at the option of either party, taking into account *comparative road transport tariff rates*, changes in customs regulations affecting road movement of import of containers under bond, and changes in the pattern of ICD development.
- (v) **Discounts off base haulage tariffs are applied: (a) when the number of trains operated per day is equal to or exceeds the agreed norm [as per item iii above], up to the agreed daily maximum; and (b) when customer owned wagons are supplied for the traffic.** The first type of discount is intended to encourage a uniform pattern of service, while the second is aimed at minimizing railway capital outlays. The rate of the private wagon discount is fixed by the agreement at 10% and is applied in proportion to the customer's share of the total number of wagons deployed, e.g. if the customer supplies 50 out of 200 wagons for the service, the rate of discount applied to *train tariff rates* will be 2.5% (25% of the 10% discount).
- (vi) **Penalties are applied in the form of a percentage of the minimum train charge when trains are cancelled by the customer - except when at least 30 days notice of cancellations is given.** When the railway cancels trains or when factors such as force majeure or vessel breakdowns apply, no charges are raised.

Source: Agreement between the State Railway of Thailand and the American President Lines for Haulage of Containers between the Eastern Seaboard Ports and Bang Sue (Bangkok), 1989

7.2.4 Track access agreements and charges

Track access agreements represent an extreme extension of the principle of tariff incentives for private ownership of locomotives and/or rollingstock in the sense that customers agree to supply not only motive power and rollingstock but operating manpower as well and for a specified fee receive access to the railway's tracks under certain terms and conditions.

From the perspective of the railway organization an open track access policy has the advantage of avoiding major investments in motive power and rollingstock, so that funds can instead be channelled into route infrastructure improvement and/or expansion. The "competition" for track capacity created by new entrants into railway service provision might also act as a catalyst for improved operational performance in the provision of services which remain with the railway organization. One disadvantage of the policy is that if track capacity is already severely limited it will force the railway organization to ration capacity by cancelling, suspending or downgrading the operational priority of services remaining under its control. Another potential disadvantage is that the railway organization may not immediately (or ever) be able to shed all of the costs associated with services transferred to open access operators - while it might be relieved of responsibility for capital investments in locomotives and rollingstock, it might not be able to transfer operating personnel to the new entrants, and might therefore continue to have to carry the costs of these personnel.

The Pakistan Railways is the first railway organization in the region to embrace the open track access concept, and at the time of the ESCAP mission in October 1996 was preparing to call for bids from the private sector for the provision and operation of block trains conveying fuel oil for power generating stations on lines designated as part of an "Open Access Network".

The track access charges proposed by Pakistan Railways (PR) for payment by open access operators under this system are to have two components - one, a fixed component, or "slot" charge, will be payable for each round trip generated, to cover occupation of a train operating path, or slot, and the other, a variable component, will be payable as a rate per gross tonne-kilometre (*GTK*) generated, to cover track wear and tear due to train operation. The alternative to this method of track access charging would be to set a fixed charge for a round trip, but such a method could unfairly penalize lighter trains which would impose smaller track forces and hence less damage to track. The "two part" charge proposed by PR gives rise to an apparent anomaly in the sense that lighter, more frequent trains will attract a smaller *GTK* charge than heavier, less frequent trains, yet will use more track capacity. However, since lighter trains will generate more *GTK* to transport a given annual tonnage, their operators will pay a larger overall amount for track access and as a consequence will have a financial incentive to invest in more powerful locomotives in order to increase train size and reduce frequency.

In the case of the open track access system proposed by PR, only the slot charge will be set by the railway, the *GTK* variable charge being determined by the bidding process. Nevertheless, studies undertaken by PR demonstrate very clearly the importance of fixing the slot charge at a level which will ensure an optimum utilization of line capacity. Where both components of the track access are set by the railway, the challenge lies in setting rates at levels which will ensure balanced achievement of the objectives of adequately recovering track maintenance costs on the one hand and making most efficient use of line capacity on the other.

The access conditions¹⁵ being proposed by the Pakistan Railways (PR) for open track access contracts include :

- ◆ **Safety.** A requirement for open access operators to comply with government safety regulations and PR working rules and to satisfy PR that their train crew have been adequately trained and can drive competently; and a requirement for all vehicles used on the Open Access Network to conform to PR and government railway inspectorate standards for the design and maintenance of new vehicles
- ◆ **Environment.** All open access operators are to follow the government's environmental policy and in particular are to take measures to minimize the risks and impact of causing environmental damage
- ◆ **Liabilities.** Rules are established for PR and open access operators to indemnify each other for damage, losses, proceedings, claims, orders and out of pocket expenses (other than those due to fair wear and tear) arising directly from their operations on the Open Access Network and from any failure to comply with their obligations under the Access Agreement
- ◆ **Alterations to the Network.** Where either PR or open access operators desire to make changes to the Open Access Network that will materially affect the interests of any other user, the PR is obliged to consult with all affected users of the relevant part of the Open Access Network. Rules are established to resolve any disputes arising from proposed network alterations
- ◆ **Train Schedule.** PR is required to: (a) maintain a system for timing and pathing trains over its Open Access Network; and (b) agree with each open access operator the train schedules to be operated, together with arrangements for handing over operational control from one party to the other and the locations where this is to take place. PR is forbidden, without prior agreement, to alter an operator's schedule beyond the pre-determined tolerance or variation expressly provided for in the agreed train schedules and operators seeking such changes must, through PR, secure the agreement of other users
- ◆ **Alterations to Access Conditions.** PR is required to consult with all other users if it wishes to change access conditions, while open access operators are required to notify PR of any proposed changes to these conditions. Changes to access conditions may be implemented if approved by all parties to these conditions
- ◆ **Performance Monitoring.** PR is required to establish a system for monitoring train performance against agreed schedules and for establishing the causes of any train delays or cancellations

¹⁵ Source: *Draft Standard Track Access Agreement*, 13 July 1996.

7.3 The Materials Handling/Logistics Management Function

This function involves advising customers in traffic handling matters, such as for example, the appropriate layout and equipment of loading/unloading stations or sidings as the design of rollingstock to meet both customer and railway needs for efficient, low cost rollingstock. It applies mainly to freight business, but in certain circumstances will also be equally relevant for passenger business.

For freight business, this function must be considered part of the all inclusive “package” offered to customers in order to meet their need for door-door transport. Rail must offer expertise in this field, in order to be able to effectively counter the threat of competition from other transport operators who will almost certainly provide such a service.

An important aspect of the logistics management function should be the continual monitoring of technological developments in freight wagon design and the coordination of actions necessary for the railway to adopt and apply this new technology which will have benefits both for the railway and its customers.

Maximization of the payload capacity of wagons in relation to their tare weight should a major priority of logistics management specialists. The relationship between payload and tare weight is best expressed as a **gross weight to net weight (G/N) ratio** for individual wagon designs. Within the region, which has a concentration of metre gauge railways, this ratio is usually within the range of 1.8: 1 or 2.0:1 for most wagon types. In effect, this means that for every tonne of paying traffic, a wagon will contain one tonne of non paying steel. Modern efficient wagon designs, however, have gross/net ratios of 1.3:1 and even less.

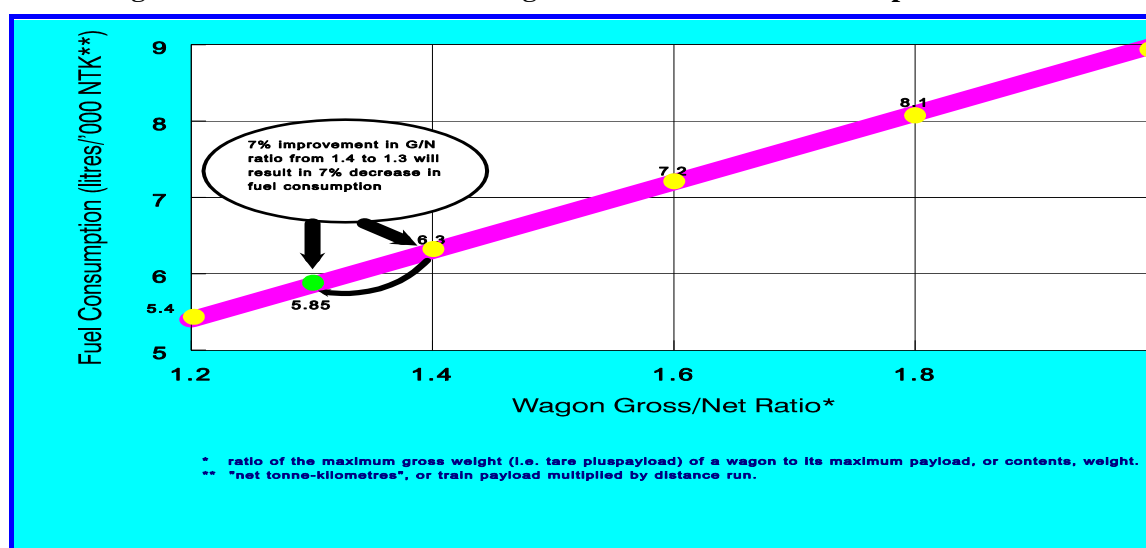
Efforts have been made extensively by many of the region’s railway systems to improve the efficiency of their wagon designs. This can be achieved by using lighter but stronger materials (such as carbon fibre materials) for wagon superstructure and underframe construction, as well as by adopting improved bogie designs which minimize weight transfer to the track. The pay-off for the railway and its customers in terms of greater fuel efficiency and improved productivity of wagons and locomotives can be substantial. This payoff results from reduced rates fuel consumption per chargeable traffic unit, a reduced need for investment in wagons and (possibly) locomotives, reduced wagon maintenance costs, lower track maintenance costs (if train gross tonnages and lengths can be reduced), and a lower train crew unit cost.

Figure 7.2 demonstrates the sensitivity of fuel consumption to a reduction in wagon gross/net ratios. This example is based on an assumed rate of fuel consumption for a modern diesel electric locomotive of 4.5 litres per thousand gross tonne-kilometres. It indicates that when fuel consumption is related to *net tonne-kilometres* (which is often the base unit for the determination of haulage charges) a reduction in wagon gross/net ratios, *without any change in train gross weight*, will yield a linear reduction in fuel consumption. In a typical situation involving

a reduction in the G/N ratio for a container flat wagon from 1.4: 1 to 1.3: 1¹⁶, the fuel consumption rate would reduce proportionately (by about 7 per cent) from 6.3 to 5.85 litres per thousand net tonne-kilometres, assuming, of course, that containers could be loaded up to the new wagon payload limit. In such a case the railway would realize an additional operational benefit in the form of greater flexibility to “blend” heavy with light containers in making up trains, but it is difficult to quantify this benefit in monetary terms.

The Pakistan Railways is one railway organization which has plans to invest in new high efficiency wagons to replace older wagons of inferior design. The potential impact of these investments in terms of reducing fuel consumption costs, as well as avoiding costlier investments in additional locomotives and less efficient wagons, is demonstrated in *Box XIII*.

Figure 7-2 Effect of reduced wagon G/N ratio on fuel consumption



¹⁶ As an example, the State Railway of Thailand (SRT) in 1987 adopted a new container wagon design with a G/N ratio of 1.28:1 (tare 13.3 tonnes, payload 46.7 tonnes), replacing 1977/78-build wagons with a G/N ratio of 1.43:1 (tare 12 tonnes, payload 30 tonnes).

Box XII Financial benefits of efficient wagon design – the case of Pakistan

In order to realize new opportunities for the haulage of furnace oil from Karachi to electricity generating stations in the hinterland, the Pakistan Railways will be investing in new high capacity oil tanker wagons. These new wagons have a payload capacity of 56 tonnes and a tare weight of 24 tonnes, giving them a G/N ratio of 1.43:1. They will replace wagons with a similar tare weight (25 tonnes), but with a payload capacity of only 40 tonnes, and therefore with a G/N ratio of 1.63:1.

The railway intends to deploy new build wagons in the haulage of 750,000 tonnes per annum of furnace oil a distance of 912 km from a new terminal at Marshalling Yard Pipri (50 km from Karachi) to a new power station at Lalpir (near Multan). It is possible that these wagons will be supplied by the customer who may conclude a track access agreement with the railway, but whether customer or railway supplied, they will provide significant financial benefits as compared with the low payload wagons in existing use.

From information supplied by Pakistan Railways, it was estimated that deployment of new build wagons rather than existing wagons in the Marshalling Yard Pipri to Lalpir oil traffic **would reduce fuel consumption costs by 17.7%, locomotive capital costs by 41.9 %, and wagon capital costs by 16.0%**. Although it was not possible to estimate the effect on the remaining significant cost item, the *cost of locomotive and wagon maintenance*, it might be assumed that this cost would reduce by more than one third, in line with the reduced requirement of wagons and locomotives. The data on which the estimates are based are as follows:

<i>Wagon G/N ratio</i>	<i>1.625:1</i>	<i>1.429:1</i>
<i>Wagon gross weight (tonnes)</i>	65	80
<i>Wagon net weight (tonnes)</i>	40	56
<i>Wagons per train (number)</i>	59	42
<i>Train gross load-forward (tonnes)</i>	3835	3360
<i>Train payload- forward(tonnes)</i>	2352	2352
<i>Thousand GTK, per return trip</i>	4843	3984
<i>Thousand NTK, per loaded trip</i>	2145	2145
<i>Thousand NTK, per annum</i>	684000	684000
<i>Wagon requirement (no)</i>	273	195
<i>Loco. requirement - 4000 HP (no)</i>	5	5
<i>Loco. Requirement - 2000 HP (no)</i>	5	-
<i>Fuel cost (4.5 lit./'000 GTK), Rs./'000 NTK</i>	66.70	54.87
<i>Amortized wagon capital cost, Rs./'000 NTK</i>	114.76*	96.44**
<i>Amortized loco.capital cost***, Rs./'000 NTK</i>	114.46	66.55
<i>Total fuel and capital cost, Rs./'000 NTK</i>	295.93	217.86

* Assumes: unit purchase cost of Rs.2.18 million; 15 year wagon life; 10% residual value; 12% interest

** Assumes: unit purchase cost of Rs.2.56 million; 15 year wagon life; 10% residual value; 12% interest

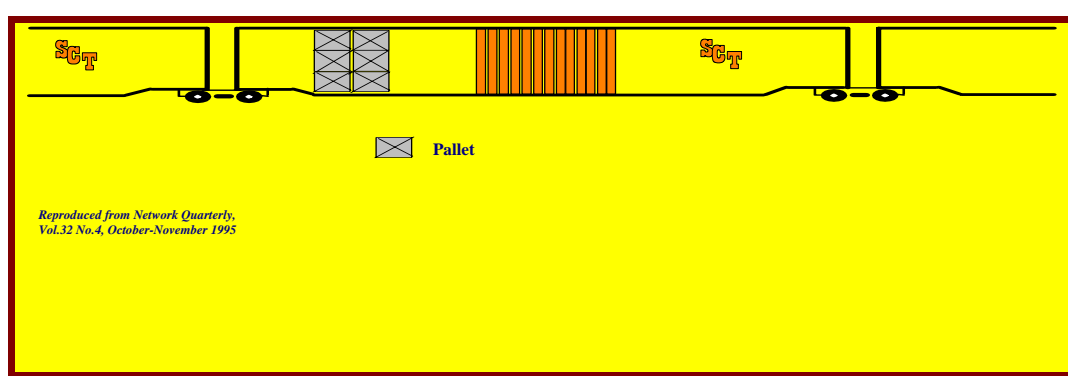
*** Assumes: unit purchase cost, 4000 HP, of Rs.80 million, and 2000 HP, of Rs.57.6 million; 20 year loco.life; 15% residual value; 12% interest

Source: ESCAP mission to Pakistan, October 1996.

This example indicates savings from the introduction of more efficient wagons which can be passed on to customers in the form of reduced tariffs. However, there can be a further pay-off for the railway in terms of fostering an improved relationship with its customers. A recent case in Australia provides a good example of how cooperation between a railway and its customers in matters of wagon design could result in increased business for the railway. In this

case, a major freight forwarding company involved in transcontinental movement of general freight loaded in covered wagons, or boxcars, recently cooperated with the Australian National Railway in the design of a revolutionary new van for rail palletized cargo traffic (see Figure 7-3). The design is aimed at high volume, low mass operation with 3 tier pallet stacking with forklifts operating from both sides of the wagon at ground level. The underframe of the wagon will be just 25 centimetres above the rail and the wagons will be curtain-sided to allow forklift access for their entire length. The gap between the wagons which share a common bogie will be very narrow and the railway plans to investigate the possibility of using a concertina link between the wagons and of stacking goods across the bogie assembly.¹⁷

Figure 7-3 Australian design for an articulated, high cube boxcar



Since effective logistics management will involve close contact with customers, it may be considered desirable to include this function among the duties of the sales force. If this approach is adopted, then the organization of the sales force along market segment lines will be essential to allow sales personnel to develop the necessary specialized materials handling knowledge.

7.4 The Advertising and Promotion Function

Advertising and Promotion includes: print media (newspaper, trade journal) advertising; electronic media (radio, television and, these days, *internet*) advertising; point-of-sale displays (e.g. displays at tourism, travel agent offices); advertising by handout brochure; advertising by way of corporate image, logos and colour schemes; and sponsorship of sporting and community events. In addition, promotion of railway organizations and their services often takes place by way of their *public relations* or *corporate relations* activities, which could range from participating in radio or television broadcasts to visiting schools.

The different forms of advertising will differ markedly in terms of their cost and effectiveness in different situations. In an economy in which consumerism predominates, the electronic media is likely to be most effective in getting the message across. However, in mostly centrally planned economies in which railways have a vital community service role, as in China

¹⁷ As reported in *Network Quarterly Magazine*, Vol 32, No 4, October-November 1995.

and presumably up until now in Central Asia, a highly visible public relations programme is likely to have a greater influence on customer perceptions of the railway.

The importance of corporate imaging as an effective vehicle for promoting railways should not be underestimated. Within the region, corporate imaging and in particular the colour coding of premium services has recently been very effectively employed by the Indonesian Railway (PERUMKA) in promoting its *Argogede* business train between Jakarta and Bandung. In this case, the rollingstock and locomotives have a dedicated colour scheme (see figure 7-4) and the on-train staff have special uniforms uniquely identified with the service.

Figure 7-4 Colour coding of Argogede locomotive, Indonesian Railway (Perumka)



Whatever the form of advertising chosen by the railway to publicize its services, it is essential that control of the advertizing, promotion and (preferably) the public relations functions be centralized within the Marketing unit, where they can be effectively co-ordinated with other commercial activities (e.g. sales), and where promotional programmes may be tailored to the practical ability of the railway to deliver a quality and level of service which is acceptable to customers.

It is important that the effectiveness of advertizing and promotion programmes be monitored on an on-going basis. Because it is the main point of contact between the railway and its customers, the Marketing unit will also be in a good position to gauge the impact or reach of these programmes in relation to the target audience.

8. RAILWAY TRAFFIC COSTING CONCEPTS AND PRINCIPLES

The work programme for the ESCAP project on Railway Marketing includes the development of a computer based model to assist the costing of individual railway traffics, since it was considered essential that marketing managers and planners should have routine access to traffic-specific cost estimates in order to be able to devise marketing strategies, plans and actions aimed at improving railway financial performance. *Traffic specific costs are the costs which are incurred in moving passengers or freight by rail between a given origin and a given destination.*

In fact, there are other personnel within railway organizations who similarly need traffic-specific cost estimates. However, their needs are diverse. The nature of the cost estimates to be generated by the proposed model will therefore depend upon the objectives of all users or potential users of railway cost information, although the major emphasis will be on the needs of marketing personnel.

8.1 Cost Definitions

Traffic-specific costs can be estimated on several different bases. *Estimates* are generally required because traditional railway accounting systems lack the capability to provide actual cost data to the required level of disaggregation.

The three types of cost indicator which are normally estimated for point-to-point traffic are:

- ◆ ***Short Run Marginal Costs.*** These are the addition to total costs within the short term (e.g.. within 12 months) resulting from the addition of small increments, such as one more tonne of freight, to total output. Since they include cost elements which will only vary in the short run, they do not include items of capital cost. Examples of short run marginal cost elements are the cost of train crews, fuel, locomotive and rollingstock maintenance, and incremental track maintenance needed to carry an extra tonne of freight, or an extra passenger.

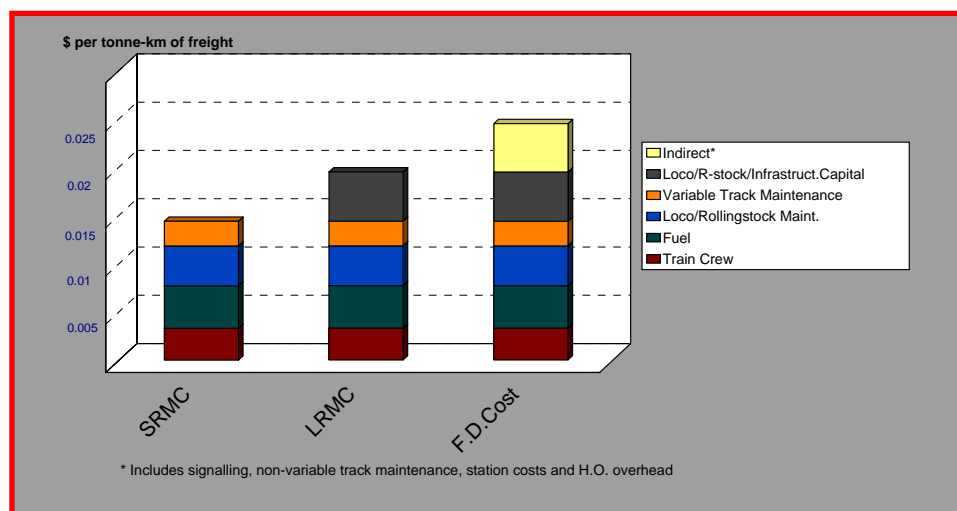
- ◆ ***Long Run Marginal, or INCREMENTAL, Costs.*** These are short run marginal costs, with the addition of other costs which will vary only in the long term (i.e. generally during periods of longer than 12 months). Thus the elements of long run marginal costs are those comprising short run marginal costs and any capital cost increments needed to support additions to output. One example of such a capital cost increment would be the purchase cost of new wagons needed to carry to carry additional freight tonnage, but if investment in infrastructure such as mainline or siding trackage, signalling, or telecommunications systems is required to support the costed traffic, then this also should be included.

Fully Distributed, or Fully Allocated, Costs. These result from the addition of overhead or indirect costs (i.e. costs which cannot be directly associated with, and do not vary in proportion to, output). The distribution of these costs to specific services and traffics is often controversial, as the basis of distribution is necessarily arbitrary, e.g. distribution in proportion to direct costs or to some

physical measure of output, such as gross tonne-kilometres. The cost associated with the provision and maintenance of a signalling system on a particular line and head office overhead costs are examples of indirect costs, requiring distribution to individual traffics.

The typical composition of these cost indicators is shown in Figure 8-1, using freight traffic as an example. Of course, the relative proportions of the cost constituents of these indicators is likely to vary considerably from railway to railway, but the example shown has been taken from a study of an actual freight service on an actual railway line in the region.

Figure 8-1 Composition of key railway cost indicators



A particular form of indirect cost frequently encountered in railway operation is *joint cost*. This is the cost of providing two or more services, the production of which cannot be physically separated. That is, provision of a facility for one service will automatically make that facility available (up to the limit of its capacity) for all other services. The signalling system costs and the costs of railway head office administration, cited above, provide classical examples of joint costs. There is no reasonable basis on which joint costs may be allocated to any one service.

Another type of cost which is frequently encountered in railway operation is *common cost*. This is the cost of resources shared by more than one service, where the proportions of the resources allocated to individual services may be altered at the discretion of management. An example is the cost of train crews. The sharing of the costs of a given train crew depot among the various services operated by that depot is determined by the way in which crews are rostered for duty. In principle, it is possible to relate such costs to individual activities and services. Common costs are always of a "direct" nature, since the apportionment of indirect costs, such as supervision costs for train crew depots, will not be directly influenced by crew deployment decisions. Common costs are a major element of the short and long run marginal cost estimates described above.

Finally, another cost indicator frequently used as a basis for studying the financial and economic viability of operating individual lines or other sub-divisions of railway networks is *avoidable cost*. This is the cost which would be avoided or would not be incurred if a service ceased to be provided. For example, if a station on a particular line were to be closed, the costs of maintaining that station would be avoided, but the costs of staffing that station would not be

avoided, unless the staff were completely separated from the railway organization, through retirement, resignation, or other means of severance.

8.2 The Need of Railway Organizations for Traffic Specific Cost Estimates

The principal users of railway cost data and the nature of their requirements may be identified, as follows:

- ◆ ***Railway Corporate Managers*** (i.e. General Managers, Deputy/Assistant General Managers) are likely to require estimates of long run marginal, short run marginal and fully distributed costs by traffic or market segment, to enable routine monitoring and control of costs and revenues at the enterprise and sub-enterprise level as well as to provide a basis for negotiation of *Public Service Obligation* (PSO) contracts with the government. Users in this category are also likely to require estimates of *Avoidable Cost*, by individual service, line or other subdivision of the network, as a basis for making decisions about strategic withdrawal from individual services, lines or subnetworks.
- ◆ ***Railway Corporate Planners*** are likely to require the same types of cost estimates as Corporate Managers, but for the purpose of formulating goals, targets, strategies and action plans, at the enterprise and sub-enterprise level.
- ◆ ***Railway Marketing or Commercial Managers***, as suggested earlier, are likely to need access to estimates of long run and short run marginal costs (LRMC's and SRMC's) by individual service (i.e. between given origin and destination, individual customer account and individual market or traffic segment. These estimates are needed as a basis for decisions about: acceptance of new business; changes in tariffs, service levels or traffic handling; setting of terms and conditions applying to long term haulage contracts (freight traffic); and setting of terms and conditions applying to contract passenger business.
- ◆ ***Transport Policy Makers and Planners*** (e.g.. Ministry of Transport officials) are likely to require long and short run marginal costs, possibly fully distributed costs and avoidable costs by traffic segment and network sub-division, in order to undertake policy formulation - particularly in relation to PSO contracts for the subsidization of unprofitable services and to ensuring an equitable distribution of resources among competing transport modes.

The development by ESCAP of a traffic-specific costing model will have to take into account the needs of these and any other users of railway cost data.

8.3 Problems Typically Encountered in the Development of Railway Cost Models

Some of the region's railway organizations have already made considerable progress with the introduction of computer based *traffic costing models* which will ultimately improve their capability to manage individual traffics in conformity with the achievement of corporate financial goals. However, the majority of these organizations have experienced problems arising from the fact that the accounting systems which provide the base data for their models are mostly

designed to satisfy the reporting requirements of governments at the macro level, and hence are not suited to providing disaggregated cost data to the level of individual services and specific operating resources.

In other words, existing accounting systems do not generally have a “job or activity costing” orientation, whereby, for example, the costs associated with operating a particular train between a given pair of stations can be provided as a routine information output. This disability is often compounded by the lack of any direct link between physical operating records which provide the necessary dissection of activities and the accounting systems which do not.

Further, while the traffic costing models which have so far been introduced operate on personal computer spreadsheet software, they are large and complex, and have proven difficult to update with recent cost data.

There is also a risk that the costing systems and methodologies being introduced might not be compatible with one another, presenting a possible obstacle when the railway organizations of neighbouring countries have to jointly appraise international traffic opportunities.

The purpose of the traffic costing element of the ESCAP Railway Marketing project is therefore to develop a personal computer based model which will allow estimation, on a *consistent basis throughout the region*, of the costs of carrying freight or passengers between a defined origin and a defined destination. The model will be designed to accept base data inputs from disparate sources, such as cost accounting systems, payroll records, and operational records, but to organize and apply this data in such a way that unit cost estimates may be generated on a consistent basis irrespective of the data source used.

9. THE MARKETING INFORMATION SYSTEM

The Marketing Planning process described in section 6 will only be as successful as the determination and effectiveness of Marketing Managers and others in implementing the plan will allow. The process of implementation itself will be assisted by a Marketing Information system which will allow the performance of the railway to be continuously monitored against the plan, so that corrective action can be taken as soon as there is a variance from the plan.

There is no perfect Marketing Information system, but desirably any system which is developed should have at least the following elements:

(i) A Traffic Volume, Revenue and Profit Budget, by market segment and (where relevant) key customer account

This budget would be finalized at the beginning of each financial year and would cover short (at least monthly, and possibly half monthly) and long (12 monthly) time periods, corresponding with the corporate accounting periods. It would provide the main targets to be achieved by railway corporate and marketing management in terms of: traffic volume (passengers/passenger-km, tonnes of freight/tonne-km); revenue; and financial contribution (revenue less incremental cost).

(ii) A Traffic Volume, Revenue and Profit Performance Report, by market segment and (where relevant) key customer account

This would be the key control report which would measure any variance of performance from budget. It would thus replicate the format of the budget report, described above, and would be available as early as possible after the end of each accounting period. *An example of a Traffic Volume, Revenue and Profit Performance Report is shown in Box XIV.*

(iii) An Operating Performance Report

This report would measure operating performance against standards or targets set as part of the Corporate Planning process, and would also be available as early as possible after the end of each accounting period. This report would monitor operating performance at least in terms of:

- ◆ *Percentage of trains arriving on time* (required for passenger traffic, but sometimes required for time sensitive freight traffic, such as containers)
 - ◆ *Freight wagons loaded as percentage of wagons ordered*
 - ◆ *Number and value of claims received* (for damage or loss of freight consignments)
 - ◆ *Number and value of claims settled* (in absolute terms and as a percentage of the number and value of claims received) and average time taken to settle claims
-

- ◆ *Number and nature of passenger complaints received about service quality*

(iv) A short period (monthly or twice monthly) Sales Report

This would be a written report submitted by Sales Representatives, explaining trends in the volume and revenue derived from major customer accounts for which they are responsible and containing market intelligence gathered in the course of their visits to customers.

The latter in particular should contain details of trends in the level and structure of competitor fare and tariff rates and of competitor activities affecting the performance of the railway, with a specific focus on:

- ◆ *Their fare and freight tariff rates and structures*
- ◆ Their services - routes, service frequencies, timekeeping performance, consignment security safeguards and loading/unloading/feeder distribution arrangements
- ◆ Their financial health and any changes in their ownership structure
- ◆ Any changes in government regulations or conditions governing their operations (eg. changes in axle load or speed restrictions or in maximum permitted vehicle dimensions, permitted areas and times of operation, etc)
- ◆ Details of their advertising campaigns and promotional activities

(v) A Customer Information System.

This would be updated continuously and would contain profile details of major customers including: location of business; personal contact points; nature of business; corporate and financial structure and structure; percentage of market controlled; (for freight) commodities transported and routes used; other transportation needs (including standard and frequency of service, loading/unloading/local delivery facilities required); and details of current tariff and tariff incentives applied, as well as tariff and credit history.

(vi) Outputs as required from a computerized rollingstock tracking system

Such outputs would be available on demand in order to determine the location and movement status within the railway system of freight consignments for individual customers.

Box XIV Traffic volume, revenue and profit performance report

Period: (Accounting Period/Month/Year)

For: (Market Segment, or Customer)

VARIABLE	Period, This Year			Period, Last Year			Year-to-Date, This Year			Year-to-Date, Last Year		
	B	A	V	B	A	V	B	A	V	B	A	V
1. Traffic Volume												
(i) Passengers or Tonnes												
(ii) Pass.Km or Tonne.Km												
2. Revenue Generated (\$)												
3. Estimated Incremental Cost (\$)												
4. Financial Contribution												
(i) Total (2-3)												
(ii) Per passenger/tonne (2-3)/(1(i))												
(iii) Per PKm or Tkm (2-3)/(1(ii))												

Note: **B** = Budget
 A = Actual
 V = Variance (A-B)
 PKm = Passenger-km
 Tkm = Tonne-km of freight

10. CONCLUSION

These guidelines contain arguments to demonstrate why the railway systems of the region should, if they have not already done so, adopt a systematic approach to the marketing of their services, and as well suggest methods and techniques which can be applied for this purpose.

Despite a popular misconception that the financial and other ills of railways can only be effectively cured by their transfer to the private sector, there are examples in the region of railway organizations which are beginning to thrive under public sector control and are doing so mainly because they have transformed themselves into customer oriented organizations and have been able to confront increasing competition successfully by ensuring that their services become and remain cost effective and suited to customer needs. The introduction of marketing systems will not of itself ensure that railways meet targets for improved revenue generation and financial performance, but if these systems are accompanied by the adoption of a marketing culture which is encouraged to permeate the entire organization it is likely that such goals will be achieved.

The railways of the region and their governments are showing increasing interest in adopting a marketing culture and system. For those which have already taken the initiative, rewards in the form of a steadily improving market share and profit performance are being revealed.