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EDITORIAL

Weaknesses of Transport Administration and Planning in Thailand : A Case Study of Mass Transit in the Bangkok Metropolitan Area

Regrettably planning efforts to alleviate Bangkok's infamous traffic congestion have failed to stem the tide of a deteriorating quality of life within the Metropolis. There are virtually no other major urban areas in Southeast Asia where the pregnancy of planning, i.e. the period between generating ideas and their implementation, is as long as in the BMA. To be sure, more highways, fly-overs, parking garages, assorted experiments with one-way streets, etc. have come along on an ad hoc basis. But to date there dose not seem to be a comprehensive understanding, let alone a plan of action based on an evaluation of all pertinent elements and their inter-relationships which make up a viable urban community. Perhaps Thailand's recent successful economic performance has disguised somewhat the urgency to cope with physical and social infrastructure needs, even though they are widely recognised. Perhaps policymakers are waiting for the economy to cool off, so that with government help (and based on Keynesian principles) public investments in utilities, transport, health, education, etc. are saved for a rainier day. Perhaps – but this does not excuse the absence of a program with clear goals and priorities of what needs to be done and when, what benefits can be expected and at what costs. This includes a close working relationship among those responsible for relevant social, financial, legal, as well as technical aspects.

It would be presumptious here to chastise those who have already devoted much effort to seeking a better metropolis; nor is it possible to provide in these brief comments a blueprint for a better life for Bangkok's people.* However, it is possible to discuss just one sector to learn what criteria must be dealt with, and what kind of feed – backs are necessary to maximize benefits. Thus inadequate transport serves as a good example.

As indicated above, most major expenditures on traffic relief so far have been used to improve road traffic. Some canal boat services have been reactivated (e.g., Klong Saen

* See, for example : "National Urban Development Policy Framework", Thailand Development Research Institute Foundation (1990-1991).

Saeb). All this is helpful but the most effective means of moving passengers, rail rapid transit, was never seriously supported until Hopewell's proposal came along (although there has been a plethora of studies since the early sixties). With investments of up to two billion baht per kilometer, understandably decisions to undertake a project of such magnitude were deferred. However, at least an interim agreement was signed with Hopewell Holdings in Nov. 1990 subject to further negotiations. However, this initial agreement was set aside with the change of government in February 1991. Controversy had arisen over Hopewell's request for tax exemptions. The unusual feature of operating a mass transit system in conjunction with real estate development, both on railway rights-of-way as well as on adjacent properties, was considered suspect as far as granting tax relief. It was surmised that the Royal Thai Government (RTG) was thus left at a disadvantage, a claim reinforced by general allegations of corruption during the Chatichai regime. It took nine months to re – evaluate the project. Finally, on 4 Nov. 1990 Thailand's Board of Investment (BOI) made public a compromise offer.

Accordingly, BOI was willing to grant tax concessions on properties beneath the proposed elevated structures, but not on other real estate incomes. A further request by Hopewell to defer withholding taxes on foreign loans for the first 15 years of project implementation, was left to the Thai Cabinet to decide, with several officials from other agencies opposed to this provision. Another BOI recommendation was to raise initial fares from 60 to 90 satang per kilometer per person, and rentals from 250 to 300 baht per m^2 per month.

In the event, when the Cabinet endorsed the BOI recommendations on taxes and fares (12 Nov.) but denied the 15 year grace period on off – shore financing, it took a gamble. In effect the Cabinet told Hopewell : This is it, take it or leave it. This was done apparently without thinking about the serious consequences for Bangkok's welfare should the project be cancelled. There seems to have followed some hard second thinking by all concerned parties during the next few days with the deadline for an agreement with Hopewell approaching shortly (10 Dec.). This led the Bangkok Bank, advisor to Hopewell, to assist in raising funds from commercial banks in countries which have double taxation treaties with Thailand. This would allow the lenders to absorb the withholding tax burden. Thus the project was saved – Hopewell singed a new agreement on 3 Dec. 1991. The brinksmanship by RTG in nearly scuttling the project is worth further discussion. Evaluation of the Hopewell programme by the concerned agencies, primarily the BOI, Ministry of Finance (MOF) and Ministry of Communications (MOC) had focused on the requested tax concessions without which Hopewell claimed the project could not be viable. Such a claim is probably justified. That the project's explicit finances indicated government revenue losses is quite true. What is less clear is : How do such losses compare with the real economic costs of postponing, modifying, or even scrubbing the Hopewell project? When a vital public service is at stake, a narrow financial analysis is not sufficient.

Instead, proper homework by those responsible for improving the lot of Bangkok's

citizens should reveal in detail the severe social and economic costs of chronic traffic jams. Some of these are quantifiable, such as the energy used in home-to-work transport, to distribute goods, man-hours lost by commuters due to unproductive times in transit, man-hours needed specifically to cope with traffic (e.g., traffic police), costs of installing traffic signals, extra buses, road improvements and their maintenance. Other, more qualitative costs, more subjective and thus more difficult to calculate, partly due to lack of data, include loss of productivity because of delays and absenteeism, disruption to family life, physical pollution and induced heath problems. Additional costs include likely negative impacts on real estate, commercial, and tourism development.

Two basic questions require more precise answers : What is the real cost of accommodating automobiles, and now are such costs paid for? The answers would simplify making decisions about whether or not to approve a proposal such as Hopewell's. On the basis of existing evidence it is most likely that on an annual basis the requested tax concessions amount to less than the quantifiable costs alone related to traffic congestion.

There are some additional prerequisites to assessing a least cost approach to major investments. One of these is the legal framework which governs, **inter alia,** land use. Thus, industrial, residential, recreational, etc., activities mean traffic generation and demands for supplementary infrastructure services. Bangkok has not been known to have strict enforcement of zoning regulations, without which transport demands and patterns cannot be fully determined.

Of key importance is to know the source of capital and to what extent a transit system should be subsidized. This last issue of possible tax exemptions (viz., subsidies) led to the impasse regarding the Hopewell scheme. As stated above, those in charge did not investigate the difference between what was perceived as a government revenue loss and the relevant costs of **not** proceeding with the project. This suggests that there was not a full understanding of the underlying economics of operating a rail transit system (in addition to not knowing the full costs of traffic congestion). There is every indication that the decision to deny tax relief was instead based on an assumed unwarranted advantage demanded by the Hopewell Group. It should be noted that a private undertaking of urban mass transport is rare and involves considerable risk which can be reduced only by tax holidays or direct subsidies, justifiable when a large segment of the public benefits. Railway commuter services, especially when faced with private car competition, are handicapped in three important ways. One is the obvious peak load distribution of traffic; another is the fact that at any given time, morning and afternoon rush-hour traffic demands are predominantly in one direction only; and finally, traffic densities decline towards suburban branch terminals. This means that if train services are to accommodate prevailing demands, sufficient capacity must be provided, and inevitably there will be excess capacities and low load factors whenever travel demand drops, during off-hours, nights, weekends, and near branch line terminals. Given the high cost of building railways, including tracks, bridges, elevated structures, stations, signalling, power supplies and rolling stock, a competitive return on

capital is normally impossible if fares are to be set at attractive levels.

Urban transit services are not unique in having to supply capacities sufficient to take care of peak loads. Electric supply, telephone systems, restaurants are similarly handicapped. However, the operating costs of providing off-peak services, especially labor and energy, puts transit operations at a greater relative disadvantage than those which apply to other utilities.

There are ways to mitigate the circumstances with which urban rail transit is confronted. Spreading rush-hours over longer periods is already being practiced by many employers in and around Bangkok. Some patronage can be influenced by offering reduced fares valid only during off-peak periods, especially on weekends. Land use can also have a major influence. Thus one-directional traffic and densities along outlying branch lines could be changed as residential (high-density), commercial and other buildings are further dispersed to the suburbs, although the main goal of such decentralization should remain the reduction of travel to the inner city. This should be done in conjunction with policies to curb car use, establishing attractive service and fare levels, and proper scheduling and ticketing coordination with other urban transport and parking. By implementing such measures the need to subsidize urban mass transit can be reduced, if not eliminated.

Thus a major policy issue is to set the level of subsidies, and how they are to be financed. As a rule of thumb many transit companies adjust fares to cover operating expenses, usually including maintenance, and all other costs, such as servicing debts. These costs are to be borne by general, sales and/or property taxes over which the service area, city and/or county has control. In Thailand this would presumably include general revenues which the central government passes on to the BMA.

The Hopewell project is unique in Southeast Asia. By taking over State Railway of Thailand (SRT) properties, virtually no new land has to be acquired. By using SRT properties for a variety of commercial purposes Hopewell can substitute conventional subsidies by cross-subsidies from the more profitable property, parking and expressway revenues, especially with a tax holiday of 15 years which has now been resolved. Hopefully the project can now proceed without further obstacles. Had it been rejected or delayed by considering alternatives (such as possible implementation by SRT), it would have meant, first, a daily economic loss as Bangkok's quality of life deteriorates further. Second, increased costs are incurred without exception when major investments are postponed. Third, to have expected the SRT to do the job on its own would have encountered difficulties in financing and caused more postponements. Equivalent project costs would have risen. Tenders for another private bidder would probably have been unsuccessful without concessions equivalent to Hopewell's requests, unless the project were radically altered. Fourth, could SRT have executed a project of this magnitude without the experience, managerial skills in scheduling and implementing for which Hopewell is known? The latter has a record of completing major schemes on time, sometimes ahead of time, and within

original cost estimates. Fifth, would SRT as operator be able to get the same exemptions on real estate revenues as requested by Hopewell; or would the MOF be willing to pay the subsidies otherwise needed? Fortunately for Bangkok's hapless city travellers such questions are with luck now academic.

Despite high initial costs, conventional rail rapid transit is economically and technologically the most efficient. It can move at reasonable speeds upward of 20,000 persons per track per hour. The net capacity can be varied depending on the length of trains, size of coaches, and train intervals. For example, 10 car trains with 100 passengers in each coach and with three minute headways means 10 × 100 × 20 or 20,000 passengers per hour. With modern signaling systems it is possible to operate at two minute intervals. If more standing room is arranged and/or trains lengthened, correspondingly more people can be accommodated, perhaps not much more comfortable than in existing BMTA buses, but at least the average transit time is much shorter. Upward of 20,000 passengers per track per hour at average speeds of 45-50 km per hour compares with current estimates of cars and buses managing 4 kmph: the advantages of electrically operated mass transit with its substantially reduced energy demand and pollution are obvious. **Although the electricity generated to operate the system includes an economic and environmental cost.**

Besides the use of rail transit, such as proposed by Hopewell, there are other technologies available. Thus the Canadian Lavalin project, now approved, is part of an improved public transport service for Bangkok. Its chief advantage is that the initial investments needed are less than for conventional rail. But capacities of 5,000-7,000 passengers per track per hour are much lower and will therefore have a correspondingly lower impact on traffic relief. Meanwhile the City of Bangkok has come up with a third mass transit scheme. It would provide service along downtown routes not included in the Hopewell and Lavalin plans and would be built largely underground.

Elsewhere in Southeast Asia, a light rail has operated in Manila along a conventional railway right-of-way for a dozen years; while helpful it has not had any major impact on vehicular traffic. In Jakarta, a 3.2 km Brazilian – conceived pneumatic propulsion system, known as Acromovel, has been installed; but this remains more of a curiosity, and needs further evaluation before any extension and before its value in relieving traffic can be assessed. In Kuala Lumpur a "sky-train" has been an on-again, off-again proposition for many years; it too is of limited value. The same applies to monorails which are suitable for amusement parks, not as a mass transit carrier. Only Singapore can boast an effective transit service. Along with other traffic relief measures its regular subway contributes importantly to Singapore's comparatively smooth road traffic.

A vital advantage of the Hopewell scheme is the optimum use of existing railway lines. This means relatively small land acquisition costs and less disruption to road traffic during construction. There would be a wholly integrated transport system with parking and shops on the ground and mezzanine levels, elevated tracks for both urban **commuter as well as regular railway services on the second level and a third level expressway.** On balance, with

the financing arrangements seemingly resolved, Bangkok is getting a bargain. Perhaps the RTG was right to take a chance on getting better terms for itself, but in the process it was also gambling with the welfare of Bangkok's people. Hopewell Holdings is taking most of the risks, having managed to receive tax breaks on parts of the SRT properties and for off-shore borrowing. This still leaves the company vulnerable without some tax relief on adjacent real estate. Mr.Gordon Wu, general manager of Hopewell, may have taken the decision to proceed anyway on the basis of prestige rather than future profits.

There is an additional suggestion, i.e. request Hopewell to engineer the track alignments in such a way so that they can be readily converted from present meter to future standard gauge. Looking ahead, SRT's track conversion along main lines nationwide, together with a possible joint venture with a similar program in Malaysia, would provide international standard carrying capacities, especially for containers and truck trailers between Bangkok and Singapore. Railway development has not been a major priority in Thailand's transport planning policy. Yet given the current and potential growth in the three adjacent countries to the South, expected expansion of international trade, future freight and passenger transport demand, the role of SRT warrants a closer look. Except for mountainous sections, SRT properties are generally wide enough for converting to standard gauge. This would also permit significant traffic relief on competing highways making the latter less prone to congestion, pollution and accidents. Coincidentally the Thailand Development Research Institute is to make an appraisal of Thailand's railway transport beginning early in 1992.

Devoting public funds to the viability of both urban and intercity services by rail is justified because : 1) businesses and others benefit directly from proximity to public transport (as with urban roads which are rarely paid for by users alone); 2) there are direct social benefits arising from environmental improvements; and 3) there are collective advantages accruing to the economy derived from greater efficiency in the use of transport resources. It is up to all those concerned to quantify as much as possible the indicated benefits and costs in the context of all development priorities. This should include projects such as Hopewell's.

It needs to be pointed out that while the Hopewell scheme will assist in traffic relief, it is no panacea for solving traffic problems. Once three branches are in operation, perhaps 75,000 passengers will be transported per hour who would be diverted from using road transport. That is a significant number. However, much more needs to be done to fully make Hopewell's and the other two rail services a success. Obviously these services will need to be integrated among each other and with other surface carriers. This means, for example, joint ticketing; perhaps a monthly pass which entitles the bearer to board any form of urban public transport including parking at outlying stations. Fares at 90 satang per km are not cheap; but rail transit for Bangkok should be designed mainly to attract middle class drivers who would find trains more convenient. This benefits existing bus riders, including those who cannot afford the railway, as buses can cover distances more quickly if there are fewer

cars to block traffic. It is vital that good access to stations by road be provided with adequate parking, expecially in the suburbs. Sinces Hopewell's scheme includes new expressways, it is necessary to design new interchanges to allow for optimum traffic flow; this still requires much work.* It also means further traffic interruptions at several key points, although much less than if a new elevated or underground railway were built along present streets.

A major contribution to traffic relief and public transport patronage would be a policy to curb private car use. This suggests special registrations and/or stickers paid for with graduated fees based on number of occupants permitting entry to designated city sections. Tolls, as in Singapore, are not recommended as Bangkok's layout would make collection and enforcement difficult. Restrictions mean that wealthier car owners are able to pay fees, perhaps 2,000 Baht per month, more readily than others; but poorer people who rely mostly on public buses would also benefit. First, pollution levels would decline. Second, as roads are cleared buses can travel at greater speeds. An average of 30kmph would be possible and capacity increased. Given the present traffic moving at 7 - 8 kmph, each bus could ply its route in up to 1/7th of the time of prevailing schedules. Another way to limit cars is to use license numbers to control entry to the City on specified days, perhaps applying this initially once a week, and with close monitoring, increase this to three weekdays. Car pooling as well as mass transit ridership would thereby be encouraged. Within the Thai context, however, it may be difficult to enact auto use restraints; they may not yet be politically acceptable. Still, as traffic gets even worse and with widespread publicity stressing the unsavory effects of relying on cars, a campaign for less driving may be successful. A promising way to curb urban travel demand is to use closed TV circuitry. Known as telecommuting, it would reduce the need for personal presence related to a variety of activities in business, education, for shopping, medical diagnosis, and others. A major advantage is that telecommuting would alleviate peak load distribution of urban traffic. Widespread application, however is at least a decade away. Given present trends, all means to improve traffic are needed. A combination of modern mass transport and communications at least provides some hope for a better environment in the Bangkok Metropolis by the end of the century.

Finally, tackling traffic problems is also very much an institutional/administrative issue. As noted, transport demands are affected by work, school & shopping habits, land use configurations, the state of the economy, special events, and miscellaneous personal requirements. Regrettably all this is governed by a multitude of agencies, mostly functioning as closed systems, when they all need to work with each other as an entirety. Alone the operating organizations (e.g., Bangkok Metropolitan Transport Authority, Expressway and Rapid Transit Authority, State Railways of Thailand, as well as assorted units of the Ministry

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* The NESDB has engaged consultants to determine requirements and costs of physically integrating current mass transit and expressway project proposals. The consultants' recommendations have not released at the time of this writing.

of Communications) clearly need to be placed under one roof, such as a reorganized BMTA, and with the power to subcontract selected services to private operators such as Hopewell. Other agencies get involved, usually on an ad hoc basis, with traffic matters, such as the Bangkok Metropolitan Administration, National Economic & Social Development Board, Ministries of Interior, Finance, etc. each with their own planning departments.

This fragmentation of responsibilities does not augur well for a truly comprehensive approach to dealing with Bangkok's traffic and with other important development issues. One need look only at the past when in effect far less was done to relieve congestion than what was possible. Steps that were taken include failed experiments with one-way streets; increasing traffic police, who in practice cannot help much except those who wish to enter main streets from their sois; building more and more flyovers which tend to shift rather than eliminate bottlenecks. More roads, truck operating hour restrictions and separate bus lanes have been useful and perhaps slowed if not halted the trend toward total chaos.

The main deficiency due to a lack of properly coordinated planning, has been the emphasis on moving cars, rather than people. A Hopewell type proposal, i.e., getting better use of railway rights-of-way, was mooted in 1969. Had there been a fully systematic, instead of a fragmented ad hoc approach to dealing with traffic, a mass transit service would have been in place (and at much less cost) many years ago. Let us hope the Hopewell project will stimulate all concerned agencies to serve Bangkok's people more fruitfully in the future.

SUMMARY

1. Both a lack of a coordinated transport policy for the Bangkok Metropolitan area and of a comprehensive financial and economic analysis have jeopardized the welfare of Bangkok's citizens by failing to act systematically on urban traffic problems.

2. Failure to understand urban transport economics in particular by compromising on the Hopewell scheme's need for tax concessions, delayed much needed traffic relief.

3. Lost government revenues due to the requested tax relief would be far less than the economic, social, and environmental costs incurred by the metropolitan community on a daily or annual basis.

4. Subsidies for urban mass transit are normally necessary as commuter services are characterised by uneven traffic flows; traffic prevails during peak hours in one direction only with declining densities toward suburban terminals. To accommodate such traffic patterns requires much higher capital and operating costs than with more even traffic distributions.

5. Subsidies, including tax holidays, are justifiable when a major public service is at stake; adequate mass transit benefits users, adjacent properties, and generally improves the urban quality of life.

6. For a mass transit scheme to function successfully, it must be integrated with other urban transport services; it should be supplemented with policies to restrict private car use in central city sections; and it needs a thorough institutional/administrative overhaul to insure systematic planning and policies related to urban transport.

7. Mass transit services by rail represent the most efficient technology for moving people in urban areas and will be needed in Bangkok even when modern communications facilitate telecommuting, i.e., reduce the need for urban travel.

8. With rapid economic growth in Thailand and neighboring countries, consideration should be given to assigning a more prominent role to the State Railway main lines by converting these from metre to standard gauge; this will result in a more productive use of national transport resources than is now the case.

9. Meanwhile, proceeding with a scheme such as Hopewell's must have high priority.

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