INFRASTRUCTURE DEVELOPMENT IN APEC

PROCEEDINGS OF THE 1997
PUBLIC-BUSINESS/PRIVATE SECTOR DIALOGUE

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FOREWORD

Since its establishment by APEC Ministers in Jakarta, November 1994, the Economic Committee has undertaken a broad range of research and analysis in support of APEC's work both on trade and investment liberalization and facilitation and on economic and technical cooperation.

Work on infrastructure has become an increasingly important part of this overall effort, reflecting the increasing importance that Ministers and Leaders, as well as the APEC Business Advisory Council (ABAC), have attached to accelerating infrastructure development in the region. This work has been carried out primarily by the Committee's Infrastructure Workshop under the leadership of Indonesia which has developed a wide-ranging program on cross-cutting issues related to infrastructure development.

A major substantive input to the work has come from the Public-Business/Private Sector Dialogue that has been organized annually by the Workshop. The first Dialogue was organized by Indonesia in Jakarta in September 1995. It resulted in seven recommendations for on-going cooperation, which has since served as an important point of orientation for the Workshop.

The second Dialogue, organized jointly by the USA and Indonesia in Seattle in July 1996, focused on "best practices" in infrastructure development, with particular emphasis on risk mitigation, supportive policy environments for infrastructure development, beneficial institutional structures and regulatory regimes, as well as an effective communication between the public and private sectors.

The third Dialogue, organized jointly by Mexico and Indonesia in Los Cabos in June 1997, is documented in the present volume. It is particularly timely since Canada, as APEC Chair in 1997, has given special emphasis to infrastructure as a theme for discussion by Economic Leaders at their meeting in November 1997. The infrastructure initiative, in pioneering APEC's shift from planning to implementation, incorporates and seeks to accelerate many of the best practices that have been identified in the course of these Public-Business/Private Sector Dialogues and developed further through the on-going consultations in the Workshop.

I should like to take this opportunity to congratulate the Co-Chairs of the Dialogue at Los Cabos, Mr. Ruslan Diwiryo and Mr. Oscar de Buen Richkarday of Mexico, for gathering an outstanding of group experts in infrastructure development and organizing a stimulating and productive discussion. I am certain that the results of this conference will serve as a major contribution to APEC's overall results on infrastructure this year.

I should also like to extend my thanks to Chinese Taipei which has offered to host the fourth Dialogue in May 1998. The Dialogue has become an important venue for APEC's public-business/private sector consultations. I am delighted that it will be continued next year.

John M. Curtis
Chair
APEC Economic Committee

Ottawa
November 1997

CHAIRMEN'S FOREWORD

The third APEC Public-Business/Private Sector Dialogue on Infrastructure, hosted by Mexico, in Los Cabos in June 1997 addressed two major themes. The first was to respond to the call expressed in the Jakarta 1995 and Seattle 1996 Dialogues to find ways to promote and facilitate improved approaches to planning that address the whole range of societal and investment concerns. The second major theme was to examine how the process of dialogue itself can be improved in its efficiency and usefulness to the sustainable development, infrastructure and investment planning processes. The strong interactions between infrastructure planning and investment and wider concerns of sustainable development that have been stressed by APEC Economic Leaders were also further discussed in an important side meeting hosted by Canada on Sustainable Cities and Infrastructure which produced specific suggestions on APEC's work program and on Networking among companies and officials.

These are exceedingly complex subjects and one of the greatest challenges faced by participants was to formulate some systematic frame of reference for the discussion of pro-active public-private cooperation in planning at the regional, national, cross-border, sector, municipal and project levels. We believe that this has been achieved and that the Dialogue has gone beyond that to indicate where the challenges and opportunities for further initiative lie. We anticipate that further discussion is dialogues and in more intensive forms of applied inter-agency and public-private cooperation will enable a "best practices" approach to evolve in this complex field, and will serve to bring those practices to a wider audience of infrastructure investment practitioners.

As Co-Chairs, we congratulate the delegates who joined us from economic, urban and environmental planning organisations, environmental and infrastructure agencies, the investors, consultants, financiers and insurers that brought together a wealth of experience that matched the complexity of subject matter. The vigorous and productive discussion demonstrated yet again that open dialogue could provide tremendous insight into the complex issues posed by the scale and diversity of the region's objectives in infrastructure development. We also take this opportunity to thank the Assistants to the Chairs and all those others which worked to make this both an enjoyable and a most productive event. The results provide a basis for the further deliberations of APEC fora and we believe will contribute to the discussion by Economic Leaders this year and the continuing progress towards concrete results in proved public-private cooperation in planning, leading to more and better infrastructure investments.

Oscar de Buen
Co-Chair of the Dialogue
and Host on behalf of the
Ministers of transport and Foreign
Affairs of Mexico

Mexico City
November 1997

Ruslan Diwiryo
Co-Chair of the Dialogue
Chair of the Infrastructure Workshops
under the aegis of
APEC Economic Committee

Jakarta
November 1997

SUMMARY REPORT OF THE 1997 PUBLIC-BUSINESS/PRIVATE SECTOR DIALOGUE ON INFRASTRUCTURE DEVELOPMENT IN APEC

The Public-Business/Private Sector Dialogue held at Los Cabos, Mexico, June 18-20, 1997 had as its central theme Integrated Planning for Infrastructure. At the previous Dialogues held in Jakarta in September 1995 and in Seattle in July 1996, private sector participants underscored the fact that inadequate planning heightened the risk business faced when contemplating participation in infrastructure development. Accordingly, improved planning, by mitigating risk, would help make more projects "bankable" and thus facilitate business/private sector participation.

The Dialogue considered the issue of integrated planning at a number of levels: cross-border, national, regional and municipal and local. As well, it considered how best projects might be prepared to make them more attractive to business participants, and the associated information requirements of business sector participants. The Dialogue was organized around introductory panel discussions in the plenary followed by separate workshops, which allowed the Dialogue participants to directly develop the substantive results of the conference.

Several ancillary discussions were held in Los Cabos, which were reported to the APEC Infrastructure Workshop that followed the Dialogue. These were:

- a meeting on the incorporation of environmental principles in infrastructure design and development;
- a meeting to consider how best to develop APEC's information initiatives; and
- a meeting of Export Credit Agencies which considered how APEC cooperation might facilitate private sector investment in infrastructure.

The need for an improved public-business/private partnership for infrastructure emerged as a central message from the conference. The staggering infrastructure requirements in the Asia-Pacific region need to be matched with financial capacity. However, bankable projects are relatively scarce. Improved planning, which would require capacity building at various levels in many economies, would represent an important element in developing that improved partnership. However it would have to be supported by improvements in legal and regulatory frameworks, better preparation of projects, increased transparency in bid processes, realistic approaches to risk management and sharing, and better information provision.

On the issue of planning, the desire for greater planning certainty has to be weighed against the need for flexibility to allow projects to be adapted to changing circumstances. This is particularly important given the long lead times for planning, development and amortization of infrastructure projects.

It was emphasized that infrastructure is not an end in itself but a means to achieving broader economic and social goals. Accordingly, infrastructure planning itself should be integrated into broader plans for economic development. In a market-oriented region such as APEC, this means greater involvement of the private sector -- including both business and community groups -- in planning.

Given the different contexts of members of the region (for some of whom borders mean essentially air and sea ports whereas for others it means physical land links) and the role of infrastructure in shaping cultures, homogenous approaches are neither desirable nor feasible. At the same time, with increasing economic integration, including through areas such as "growth triangles" linking adjacent regions of several economies and within economies between cities and rural areas, the need for coordination in planning is growing at all levels.

An important consideration raised was that, given the immense amount of infrastructure required and the often very high return to maintenance of existing infrastructure, adequate attention had to be paid to the efficient use of the infrastructure that already exists. The business sector can play a role here as well, bringing management skills to bear to maximize the flow of benefits from existing facilities.

Finally, given the key role of infrastructure in achieving economic, environmental and social goals, the incorporation of sustainable development principles in infrastructure planning was endorsed.

PANEL REPORTS

Report of Panel I

CROSS-BORDER PLANNING

This panel discussion covered the various aspects of infrastructure planning across international borders. The issues touched upon include regional transportation planning for airports, ports, roads and railways, as well as cross-border flows of power and water.

While there are many aspects of infrastructure planning that are common to all economies, cross-border infrastructure planning faces a special set of challenges stemming from the differences across economies in areas such as legal and regulatory frameworks, planning systems and approaches, culture, level of development (of the existing infrastructure in particular), technologies and location of responsibility for infrastructure planning and development within governmental structures. As well, land borders raise different sets of issues than those represented by air and sea ports. In the Asia-Pacific region, most of the intra-APEC borders on the Asian side of the Pacific are of the latter type whereas on the Americas side they are predominantly of the land type. Accordingly, cross-border planning tends to have different interpretations on the two sides of the Pacific and it is a challenge to build a homogeneous planning framework accepted by all APEC economies.

In general, there was strong support for the need to improve the public-business/private sector partnership for infrastructure development. There was agreement that the business sector should be more involved in developing the plans for infrastructure. The public sector could conduct the preliminary feasibility studies for basic infrastructure projects and leave it to the business sector to develop the details, thereby enhancing the application of commercial principles to infrastructure projects and thus their "bankability". As well, consideration should be given to help establish professional networks of people involved in the various aspects of border project development to facilitate broader business sector participation in the planning process. At the same time, authorities were asked to help mitigate political risk created by complexity of legal and regulatory frameworks and to recognize the need for guarantees and risk sharing to attract private investments.

- Also stressed was the desirability of maintaining clear rules for all parties involved during the period of preparation.
- It was suggested that ways should be sought to ensure coordination amongst all parties (including possibly through creation of project centers in coordination with financing agencies and business sector participants).
- Finally, the need for improved dispute mediation to resolve controversies was stressed.

The fact that infrastructure projects developed in a border region can affect the neighbouring economy in both positive and negative ways makes it important that there be a cross-border planning process for consultation and coordination. This will maximize the benefits for both economies while avoiding problems that could become an obstacle to mutual development and economic growth. There was general agreement that :

- The mutual needs and common interests in developing border areas in a coordinated fashion to generate mutual benefits should be recognized, with due consideration given to the level of economic and social development of the economies on either side of the border.
- Consideration should be given to establishing clear bilateral or multilateral agreements, to defining a legal framework with a common and general approach to cover cross-border infrastructure projects, and to establishing permanent networking groups to give effect to these coordinating frameworks.
- Various avenues should be pursued to achieve the desired coordination, including regular meetings of infrastructure planning officials to improve communication and mutual understanding, harmonization of planning and programming processes where possible, and convene inter-economy conferences to help solve problems related to planning.
- Consideration should be given to setting up permanent common organization(s) to analyze and promote cross-border infrastructure development.
- It was important to coordinate cross-border planning with national, regional and local objectives.

Good information on infrastructure plans on either side of borders was considered essential, especially with regards to projects in the development phase. Dissemination of such information through shared networks of data systems (through the Internet for example) was seen as a practical way to facilitate good information flow. Specifically, it was thought that:

- The business sector needs more high-quality information on infrastructure projects from the public sector and an international information system with data bases on planning and project development should be established.
- Bilateral or multinational studies with the intensive participation of all parties involved should be undertaken to improve understanding of cross-border infrastructure issues.

Given the importance of compatibility of infrastructure on either side of a border, there was strong support to promote harmonization of technologies, infrastructure standards and operating procedures, legal and regulatory requirements, and administrative and planning systems. Specifically, it was thought that:

- International standards requirements and specifications should be followed and, where necessary, established to facilitate inter-economy planning and coordination.
- Negotiation and agreement procedures should be harmonized to the extent possible and the need for international flexibility should be accommodated in the established national approval procedures, including by deregulation, if necessary.

Report of Panel 2

NATIONAL INFRASTRUCTURE PLANNING

Infrastructure planning is subject to considerable uncertainties. Some variables, such as population and requirements for basic services, can be forecast reasonably well. Others, however, are dependent on the evolution of economic activity, and are less easily projected. Indeed, this is increasingly the case given the transforming nature of changes such as the shift towards an information society. Accordingly, it is very important that infrastructure projects in and of themselves not be conceived as representing development, but rather as supporting broader economic development. Accordingly, infrastructure plans should be fashioned in a context of long-term integrated planning of social and economic development. In the developing economies in particular, where redressing inadequacies in basic infrastructure is essential to raising living standards, the planning process and decision-making must balance the need for infrastructure to support industrialization with that required to meet social objectives.

Generally speaking, the greater the certainty in demand projections, the broader the array of financing alternatives. Accordingly, the planning process is key to enhancing "bankability" of projects. That being said, since planning uncertainties are unavoidable, supporting analytical procedures should be based more on tendencies than on detailed scenarios. Correspondingly, plans should not be "over-designed" but rather should incorporate some measure of flexibility through, for example, use of modular concepts. This can be carried through to the construction phase.

In general, it was considered to be advisable to create a favourable environment and regulatory framework, emphasizing stability and transparency, for the participation of the business sector on a long-term basis. Business sector involvement was recommended whether projects under consideration are to be handled entirely by the private sector or whether private involvement is only to be considered for the financing component. Indeed, it was suggested that the business sector can be valuable in generating creative ideas and solutions to problems even in the case of projects that are not likely to be profitable. Also, it was suggested that economies may find it quite useful to open concessions to the business sector for infrastructure maintenance, in roads, for example.

Finally it was noted that the infrastructure planning process cannot ignore the influence of political elements which eventually mould economic decisions. It was suggested in this regard that checks and balances need to be in place within governments to avoid a blurring of distinction between strategic economic plans and political considerations. As well, it was suggested that attention be given to the communications process and that provision be made for the participation of representatives of active social and interest groups. The role of education in promoting understanding and adaptation to changes wrought by infrastructure development was also stressed.

Against the background of these considerations, the panel suggested that long-run infrastructure planning should follow the "SMART Principle": Specific, Measurable, Accountable, Reasonable and Time-based. Some specific recommendations included:

- Emphasis should be placed on market mechanisms, where beneficiaries pay for the services received rather than the society as a whole.
- Durability should be considered, not only in terms of the obvious trade-off between initial investment and operational costs, but also in terms of the capacity of infrastructure facilities to handle contingencies in performance that can drastically affect their economic efficiency over their life cycle;
- Extracting the full benefit from existing infrastructure by providing proper maintenance is important when considering construction of new infrastructure, particularly since the rate of return from maintenance is often higher than from new construction (although these considerations should not delay the creation of new infrastructure needed to provide the minimum basic services to growing populations).
- Environmentally sustainable technologies should be favoured in the long-term integrated planning of APEC economies.

The panel recommended that the results/recommendations from the Los Cabos Dialogue be reviewed by ABAC, other relevant APEC fora such as the Telecommunications, Energy, and Transportation Working Groups and relevant private sector groups.

Report of Panel 3

REGIONAL INFRASTRUCTURE PLANNING

Panel 3 organized its discussion under five headings:

- Economic Framework for lntegrated Planning
- Strategic Planning
- Public Involvement
- Business/Private Sector Investments in Public Projects
- Risk Allocation and Project Opportunities

Economic Framework for Integrated Planning

The key issue in developing an appropriate economic framework for integrated planning of infrastructure was, in the view of the panel members, the application of the principles of full cost accounting: in particular how can infrastructure services be priced to recover social and environmental costs. It was suggested that full costs of investments should be recovered and particular importance was attached in this regard to developing methods for recovering the costs associated with road development and maintenance in urban areas to ensure the efficient movement of goods and people while mitigating environmental costs.

It was recommended that APEC should investigate the state of practice in this area and advance the dialogue on dealing with societal and environmental costs of motor vehicle use.

Strategic Planning

The growing inter-dependence of regions within economies and across economies, including through the emergence of "growth triangles" which link adjacent regions of several economies, is increasing the need to better integrate planning across levels of government and indeed to develop better planning skills in general.

The difference in time horizons between the public and business sectors was noted as a particular element that needs recognition when involving the business sector in infrastructure development.

The importance of appropriate laws on land use as a prerequisite to rational infrastructure planning was also stressed.

Public Involvement

Public involvement in infrastructure planning at all the levels -- national, state, regional or municipal -- was suggested as being important to the success of projects. At the same time, it was acknowledged that it was expensive in terms of time and cost and difficult to develop and sustain interest. The general view was that, at the present time, public involvement tends to be limited.

The approach to involving the public will vary from economy to economy. Factors that bear on the differences in approach include differences in governance and the varying relationships between infrastructure and land acquisition and control.

The processes used for public consultations should provide for early public involvement to allow input on defining needs and objectives before projects are ready to go. Processes should be fair and open, including by involving likely opponents of projects under consideration. It was emphasized that caution should be taken not to raise false expectations that participants will necessarily get what they want.

Business/Private Sector Investments in Public Projects

An issue of particular importance in infrastructure planning is raised by the impact on land values of disclosure of plans. This creates significant opportunities for profit and it is essential that that the public sector control infrastructure policy and implementation to protect the public interest. To avail themselves of business sector expertise without disclosing development plans too early, it was suggested that governments hire specialized expertise.

As well, it was suggested that land acquisition for infrastructure projects should be handled by the government and be done on a comprehensive basis, avoiding piecemeal approaches.

Finally, flexibility should be built into the planning process so that, as projects proceed, suggestions from the business sector as regards changes to schedules and quality requirements and/or adjustments to reflect changing economic conditions can be accommodated and the benefits shared equitably.

Risk Allocation and Project Opportunities

Business sector opportunities abound in infrastructure, ranging from high technology areas such as telecommunications to basic services such as provision of clean water. In the latter areas, while the public sector is usually best positioned to provide the services due to issues such as cross-subsidization to realize the social as well as economic policy goals, a public-business/private partnership can be successful. The advantage that the business sector brings to the table is management efficiency, capital and technology. However, without appropriate allocation of risks, the business sector will only participate in the clearly profitably projects.

The staggering need for infrastructure needs to be matched with financial capacity. However, bankable projects are relatively scarce as legal and regulatory frameworks acceptable to investors are often lacking. For example, some economies still lack land registries which is a basic prerequisite for public-business/private partnerships in infrastructure development. As well, while the financial industry has been changing dramatically in providing sufficient funds for well-structured projects, the participation of multinational financial agencies could usefully be increased particularly through their partial risk guarantee programs in areas such as user-tariff increases, complementary infrastructure services or facilities, etc.

Report of Panel 4

LOCAL AND MUNICIPAL INFRASTRUCTURE PLANNING

In carrying out local/municipal planning, the municipal goals must be clearly articulated in terms of the requirements to meet basic needs of the people, requirements for an improved social environment and requirements to achieve a higher standard of living. In setting planning goals, the full cooperation of all stake-holders must be assured, including public agencies, industries, business, non-governmental organizations and community groups. Such cooperation is needed to assure sustainability of plans.

The planning process must start with a clear inventory of resources (physical, human, financial) as well as problems and challenges to be addressed. The institutional requirement of municipal planning must be recognized. A planning commission where all concerned interests are represented may be set up, for example. While representation is important, the process must assure that planning does not become dominated by special interest lobby groups. Transparency of planning decisions is needed to assure accountability to the people and respond to the public interest.

Involving the business sector in the planning process must be done from the very beginning, not just during the process of plan implementation. The private sector should not be defined as the "for profit" interests alone. Non-governmental organizations (NGOs) and community based organizations (CBOs), particularly women's groups, youth groups and organizations of the poor and underprivileged, should all be involved in the planning process.

Central and provincial levels of governments should set up clear development policies and performance standards that may guide local municipal planning. Such policies and standards are particularly needed by governments pursuing decentralization programs in order to facilitate monitoring of development activities to assure that these are accomplishing societal goals.

Each planned project must be assessed not just in terms of its economic and financial viability. Projects must also conform with the objectives of social equity, of environmental sustainability, and of community support. The trade-off in achieving these multiple objectives must be clearly specified in the plan.

Project appraisal must consider the social costs of developmental activities, not just the inputs from economic groups or the resulting profits and potential losses. In particular, the costs of development on the environment must be fully accounted for, the burden of developmental activities on the poor and underprivileged needs to be assessed in every project.

To assist people engaged in municipal planning, information on "best practices" and "lessons learned" should be widely disseminated. The Internet should be used to its full capacity in disseminating such information.

In ensuring the economic viability of municipal projects, the added economic benefits of infrastructure on properties affected by it should be clearly assessed. Ways and means must be set up to recapture such benefits through taxation, specific assessments and other fiscal means.

Municipal planning should not be carried out in isolation, but in the context of regional plans and comprehensive national socio-economic plans. Care must be taken that municipal plans do not become fragmented by functional, sectoral and geographical considerations.

Recognizing that specific political situations differ, the need for area-wide efforts in municipal planning should be fully considered. The setting-up of planning structures that transcend municipal boundaries should be considered. These may include unified city governance (as in the Toronto "super city" approach), special purpose bodies (like Mexico City's Distrito Federal) or metropolitan coordination (as in Metro Manila). Such area-wide structures guard against the problems of municipal fragmentation.

The levels and scale of various types of planning must be fully considered as specific activities may be best carried out at specific levels. For example when planning for water, sewage and sanitation systems, protection of the watershed must be vested at a regional or even cross-border level: thus, the impounding and purification of water might be a metropolitan-wide effort, water distribution may be a municipal function, and the collection of fees may be a local neighborhood function.

Municipal planning should not focus on large mega-cities alone. The planning needs of small and intermediate cities should be emphasized in APEC's programs on infrastructure development.

Green Technologies should be applied to municipal planning. Such techniques seek to achieve a higher equality of life which is closely integrated with environmental sustainability. In applying green technology, the close linkage between urban and rural areas should be clearly recognized.

There is a need to strengthen the human resource capabilities of municipal planning agencies. One way of doing this is by assisting professional organization of planners through training programs, workshops where best practices can be shared, and by wider dissemination of new and innovative approaches through networking.

Closer linkages among municipalities through “twinning” and “sister city” relationships should be supported and strengthened by APEC.

Multilateral agencies, especially financing institutions like the World Bank and Asian Development Bank, should devote more resources to technical assistance, human resource

development and institution-building aside from their normal infrastructure lending functions. It was suggested that such efforts should be in the form of grants, not loans.

Report of Panel 5

PREPARING INFRASTRUCTURE PROJECTS TO BE MORE ATTRACTIVE TO THE BUSINESS/PRIVATE SECTOR

The discussion of Panel 5 focused on 3 main themes that are of particular relevance to the business/private sector in determining the attractiveness of infrastructure projects:

- assurance of revenue
- assurance of costs
- clarity of the legal framework

Assurance of Revenue

Governments can take various measures to provide the necessary assurances regarding revenue flows from infrastructure projects:

- pre-feasibility assessments, including review of demand projections, done by credible third parties;
- evidence of business sector involvement in the planning process;
- flexibility built into the strategic planning documents, to allow for changes/modifications; and
- in the more complex projects, provision of guarantees by governments and/or multilateral financial institutions.

Assurance of Costs

Governments can also take various measures to provide greater certainty regarding cost structures that private parties can expect to face in infrastructure projects:

- terms and conditions should be made clear from the outset;
- overall performance outputs to be achieved should be specified, without however being overly prescriptive;
- responsibilities to be borne by each party should be clearly spelled out;
- the risks that the government is prepared to assume through guarantees should be clearly laid out;
- actions with long lead times that will be difficult for the business sector to undertake (e.g., land acquisition and geological studies) should be undertaken by the public sector;

- the bid process should be clearly specified and have the following features:
  - transparency;
  - bid evaluation criteria specified;
  - basic technical design for the project fairly complete but flexibility provided for tabling of alternatives;
  - requests for the proposal to include key legal documents such as, for example, Power Purchase Agreements, Feedstock Agreements, Concession or Franchise Agreements;
  - insurance obligations specified but with provision included for flexibility;
  - pre-qualification of bidders to eliminate unrealistic bidders;
  - two-stage evaluation: i) technical, ii) financial;
  - scope for negotiation provided.
- bonding requirements figure prominently in the attractiveness of projects and specification of these in ways more attractive to the business sector can enhance considerably the attractiveness of the project; in particular:
  - flexibility as regards which banks or bonding firms can be used, and any requirements for local content specified up-front;
  - use of standard UCC regulations;
  - reasonable amounts required for bonding purposes;
  - preference given to sureties over guarantees as the latter tend to add to expense.

Legal and regulatory framework

The central importance of the legal and regulatory frameworks in establishing the basis for business sector participation in infrastructure was stressed. In particular, from the business sector's perspective:

- clarity is required as regards the articulation of governing law and applicable legal jurisdiction;
- international fora are preferred for dispute resolution or settlement
- franchise rights free from competition are preferred, but where competition may be allowed, this must be clearly specified;
- taxes should be as low as possible;
- investors should have the right to repatriate profits and have access to loans and equity financing.

Report of Panel 6

NETWORKING BETWEEN ECONOMIC DEVELOPMENT PLANNERS, INFRASTRUCTURE AGENCIES, CENTRES OF EXCELLENCE AND THE BUSINESS/PRIVATE SECTOR

The Panel noted that better information would serve to enhance transparency and thus to directly promote infrastructure investment by private parties. In this regard, the panel members found the check list suggested by Dr. Harinder Kohli of the World Bank be a useful working basis for considering the information requirements related to infrastructure. While the group did not feel qualified to identify the specific information that might best be provided by APEC, it did note that information provided should be demand-driven and based on prior surveys of customer interest as in the case of the APEC Infra-Net project. At the same time, it acknowledged that, if information were "pushed out" to users, the supply would in effect create its own demand.

As regards the type of information that might be considered, it was suggested that data of the "yellow pages" variety -- i.e., information on infrastructure suppliers and related services - could be the first type of information to be contemplated. This could be supplemented by a "classified ads" type of information on infrastructure opportunities. As well, information on "best practices" in various aspects of infrastructure planning, design, development and management, as well as information on policy frameworks of APEC member economies would constitute an important part of the overall information supplied.

Effective management of the data is required to ensure it was up to date and accurate. In this regard, the group noted that the provision of data is not cost-free.

The group was of the view that there is a capacity deficiency in the region, particularly in developing economies. As well, the group supported the inclusion of an educational element in the information being disseminated. An example cited was cement specifications, where it was suggested that improper preparation resulted in early deterioration, resulting in significant erosion of economic value of the infrastructure.

The group discussed the issue of how to identify the customer base for the information and noted the potential utility of using trade associations, special institutions such as sustainable development institutes etc., and also news agencies (e.g., Reuters and Blomberg News) to broaden the potential customer base. As regards the Internet, it was noted that, while search engines would enable a customer to reach an APEC infrastructure data base, APEC was not the obvious route to infrastructure information. Accordingly, more direct paths should be developed by giving this information away to those associations that have a ready-made customer base.

It was further noted that a study done on search services for sustainable development showed that there was a significant variation in quality and perhaps such a study should be done for infrastructure. It was suggested that general information provided on a website should be supplemented by access to live contact for up-to-date and special purpose information.

Finally, the panel members suggested that future roundtables be held back-to-back with other international business organization meetings to facilitate participation of the business/private sector on a cost-effective basis.

PLANNING FOR INFRASTRUCTURE DEVELOPMENT

CONGESTION PRICING OF INFRASTRUCTURE SERVICES

Prepared by

U.S. Council of Economic Advisers,
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CONGESTION PRICING OF INFRASTRUCTURE SERVICES

In assessing the need for infrastructure development, one focus is on the institutions and policies needed to initiate that development. After all, one cannot produce and distribute services from highway systems, water projects, electricity distribution grids, or telephone networks until they are constructed. However, in considering what, when, and where to build, the importance of how the services will be priced for consumers cannot be overlooked.

- The value of the infrastructure to the public depends on the prices they will have to pay to use it. Whether or not infrastructure services are set in the most efficient manner therefore can affect decisions regarding timing, breadth, and quality of the facilities to be procured and constructed.

- The willingness of governments and private firms to supply infrastructure depends on their belief that they will be able to recover their costs through the revenues they receive from the services they deliver.

In most industries, we can rely on competition to set the prices, terms and conditions, and output levels that will generate the greatest net economic benefits, measured by how much consumers *would* be willing to pay for the level of service, less the total costs of producing those services. In many infrastructure contexts, however, competition is unlikely. While we see some private highways, a local system of streets and roads is likely to be too expensive to be replicated by more than one provider. In these cases, as with water systems, electricity grids, and telephone networks, the delivery infrastructure once in place is likely to be able to handle most of the demand most of the time, making duplicative systems redundant.[1]

[1] It is important to note that in all of these cases, the likelihood that a piece of physical infrastructure is likely to be a monopoly does not and should not preclude competition among those who would like to use that infrastructure to provide goods and services of their own. Competitive trucks and railroads can use a common systems of highways and rails. Different generators can use electricity transmission and distribution systems to offer power to residential, commercial, and industrial users. Long distance telephone companies, Internet service providers, and a host of telecommunications firms can compete over a telephone network that, in a developing economy, may retain monopoly status. Policies to ensure effective separation of monopoly infrastructure services themselves from the competitive lines of commerce that rely on those services can provide considerable economic benefits.

General pricing principles

When the costs and technology associated with infrastructure services lead to what economists call "natural monopolies," the prices for these services frequently become a matter of public policy. Setting prices is not as simple as following the basic rule that price should equal the incremental or marginal cost, since the high level of up-front, fixed costs for much infrastructure means the marginal cost of adding more users is typically less than the average cost of providing service overall. Therefore, prices set to equal marginal cost will be below average costs, leading the firm to lose money.

Economists have devised numerous methods for regulating prices of those services. One prominent example, Ramsey pricing (named after British economist Frank Ramsey), suggests that prices can indeed be greater than marginal costs. In particular, the price-cost gap should increase as people's price-sensitivity for a service decreases.[2] A more recent idea is that the prices that regulated firms charge for their services should be divorced from costs, yet subject to an overall "price cap." This gives firms an incentive to cut costs, since they keep the profits, while at the same time protecting consumers against monopoly pricing. Moreover, the prices charged under "price cap" regulation will tend to reflect Ramsey pricing in the long run.

Dealing with peak demands

These principles are well known to those involved in infrastructure pricing, particularly in many developed economies. Perhaps less well known, however, are the virtues of setting prices to deal with the congestion that can arise in the use of infrastructure. When much of the public is going to and from work, highways and transportation systems can become jammed. During the business day, telephone switching systems can become tied up, leading to busy signals. On summer afternoons, electricity systems can be taxed by homes and businesses attempting to use air conditioners.

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[2] In economic jargon, the price-cost margin is inversely proportional to the elasticity of demand facing the firm.

In these cases, economists would recommend charging relatively higher prices for peak demand or congestion that places costly burdens on the infrastructure and those who use it. At least three benefits of efficient congestion pricing are reflected in improved economic contributions of the infrastructure to the economy:

- Short run allocation: When demand for an infrastructure system exceeds its capacity to provide service, some method should be undertaken to determine who will get to use the system and who will not. Increasing prices to the point where demand just equals the supply of the infrastructure system will ensure that the infrastructure is used by those most willing to pay for its service. In purely economic terms, the infrastructure goes to those users and uses that produce the greatest value.[3]

- Encouragement of off-peak use, and more efficient on-peak use: An important benefit of charging higher prices during peak periods is that the public may be able to switch uses of an infrastructure to times of lower demand. For example, an industry might decide to operate a factory or send data over telephone lines at night, to avoid paying the higher peak-period prices. Thus, use of the infrastructure may be spread out over time. When peak-time usage is important, higher prices could lead users to make more efficient use of the infrastructure at those times. Charging tolls during rush hour for highway use, for example, might lead people to use mass transit or to set up carpools.

- Long run expansion: In setting high peak prices, regulators need to be careful to avoid giving infrastructure providers an incentive to purposely hold back capacity in order to raise prices and generate monopoly profits. Peak-load prices, when set efficiently, should reflect not just the cost of operating the infrastructure, but also the increase in the underlying physical facilities—highways, power lines, telephone switches, water pipes—needed to handle the marginal user during peak periods. The price should include the incremental costs of having to expand the infrastructure to handle the additional use, and not just the additional costs associate with operating a fixed infrastructure. Peak-load prices should then get consumers to incorporate the added costs of expansion necessary to handle their demand at those times. Proper pricing will also give infrastructure providers the ability to cover the costs of expanding capacity at peak times.

[3] We recognize that distributional considerations can warrant divergence from the principle that services should be provided to those willing to pay the most for them.

Congestion "externalities"

Peak-load prices reflect a very simple form of congestion, in which the public can use infrastructure up to a fixed capacity, beyond which no one can be served. Congestion, however, can be more complicated, imposing costs on those who are already using the infrastructure. During high traffic periods, for example, each additional car on the road can make travel time longer for everyone coming after them, until traffic can resume speeds for which a highway was designed. Similarly, increased demand for power by a few can cause voltage fluctuations and service interruptions for everyone trying to use electricity.

Economists refer to the costs users impose on other users as "congestion externalities." Efficient pricing in this more complicated form of congestion should make consumers take into account not only the incremental costs of expanding and operating the infrastructure itself, but the costs they impose on others by their use. For example, road tolls at rush hour can lead to more efficient travel patterns if set at a level to reflect the added delay costs imposed on subsequent travelers. With such prices, only those drivers for whom the benefits of using the road during congested times exceed the costs imposed on others will do so. Others may postpone their travel to reduce or eliminate costs from congestion-related delays that their travel would impose on others.

New technology can help

One objection to peak-load and congestion-based pricing is that the cost of collecting such fees is often prohibitive. Infrastructure planners and systems operators should take into account the cost of implementing any program that, in theory, seems desirable. Today, however, technology may permit congestion-based fees which might not have been feasible a short time ago. Electric meters can be timed to measure energy use on a time-of-day basis, and electric appliances will become easier to program to reflect higher charges when system use is at its peak. "No-stop" toll roads, where a sensor records when a car has used the road, and the owner of the car can be billed later, are now possible. By reducing the costs of collecting congestion-based fees, taking advantage of such fee structures can increase the national economic benefits associated with infrastructure use.

Conclusion

Integrated planning of infrastructure development should recognize how the infrastructure will be used after it is procured and constructed. Crucial are the prices that will be charged for the use of that infrastructure. The value of a telecommunications system to the national economy will be greater if prices for its services reflect demand on its full capacity at peak periods, and incorporate the congestion-related costs users impose on others.

Congestion pricing is not a panacea for all of the problems plaguing infrastructure development. Implementing the simple principle that prices ought to reflect all of the costs may be politically difficult. Nevertheless, taking congestion pricing into account can make infrastructure development a better proposition for the economy as a whole.

OPEN BIDDING FOR INFRASTRUCTURE DEVELOPMENT

Prepared by

U.S. Council of Economic Advisers,
Executive Office of the President

OPEN BIDDING FOR INFRASTRUCTURE DEVELOPMENT

When procuring infrastructure facilities designed to provide their citizens with important services, governments in developed and developing economies alike should devote attention to the methods by which such procurements take place. The central objective should be to provide citizens with the services they demand at least cost, taking into account quality, reliability, and other important service and policy dimensions. The responsibility of governments to meet this objective is especially crucial. Smaller economies can ill-afford the costs of spending too much to obtain too little from massive enterprises—telephone networks, electricity distributions systems, water projects, highways—that, once in place, are expensive to reverse.

For this reason, the process of competitive procurement and supply of infrastructure services can make an important contribution to integrated infrastructure planning and development. A number of important "assurance" goals merit careful consideration by planners in setting the rules and managing the process by which infrastructure is procured:

- *Suppliers* of infrastructure need to have reasonable assurance that they will be able to recover their costs, through the rates users pay for infrastructure services and, perhaps, payments from the government itself.

- *Citizens* need to be assured that their governments are acting in the public interest when they select the firms that will construct and operate infrastructure systems.

- To act on their citizens' behalf, *governments* should be assured that they have the best possible information from potential suppliers regarding cost and quality of service.

Government commitment to rules, open bidding practices, auctions, and other competitive mechanisms and protections are important steps infrastructure planners can take to meet these goals.

Commitment by the government to rules

No procurement policies, auctions, bidding rules, incentive mechanisms, or other market-based reforms, however ideal in theory, will contribute to a country's social and economic welfare unless providers and users of infrastructure services are confident these policies will be implemented and enforced. The need for the government to commit firmly to a set of procurement policies is especially crucial when infrastructure suppliers and customers have to make long-term financial investments that depend on those rules. Ensuring that a government will stand by such policy commitments can be particularly difficult over the full expected life of those infrastructure investments.

The most crucial examples go to the construction of infrastructure. Infrastructure projects, with their large sunk investment, have traditionally tempted governments to behave opportunistically toward investors. Potential suppliers may fear that, once they have built the infrastructure, the government will effectively expropriate their investment. Such opportunistic expropriation could take place either through a direct taking of the facilities, or indirectly by permitting the supplier to recover only operating costs and not allowing them to charge prices high enough to recover the costs of the infrastructure investment. In the other direction, customers may be reluctant to make infrastructure-related investments, e.g., business telephone systems, if they fear that suppliers might be allowed to charge inordinately high prices in the future after related investments are put in place.

These possibilities illustrate the need for the strongest possible government commitment to policies regarding property and contracts. In the U.S., property rights and contract enforcement are generally protected through common law and constitutional limitations on the ability of the government to "take" property without compensation. Regarding infrastructure, the U.S. Supreme Court has laid down principles, based on constitutional law, which provide that rates for regulated industries—what we might now refer to as "infrastructure"—should be "just and reasonable." In other words, investors in these industries should be able to recover their capital costs, adjusted for the risks involved.[1] Without these assurances in fundamental law, the United States would likely not have the breadth of privately constructed and operated infrastructure investment evident today.

Opening bid evaluations to the citizens

A second step in efficient integrated infrastructure planning is to put in place mechanisms by which citizens can judge whether elected and appointed officials are choosing the infrastructure providers that can supply the best combination of price and service. The basic components of open bidding policy for a government should include:

- *Identify infrastructure projects and establish the basic rules and legal framework for eligible contracts.* One method could be through a process of public notice and hearings. This allows citizens to ascertain what infrastructure systems are under consideration, and to evaluate their government's procurement decisions.

- *Invite competitive bids from a number of suppliers.*[2] Where possible, governments should avoid "sole source" procurement, in which a single firm is designated as the

[1] Federal Power Commission v. Hope Natural Gas, 320 U.S. 591 (1994).

[2] In U.S. law, the importance of competitive bidding in infrastructure-like contexts is exemplified by

supplier of a service. An important way in which citizens can determine the value of a particular infrastructure procurement is to compare it with alternatives. "Sole source" procurement can often invite at least the appearance of undue favoritism, which can introduce political and legal delay into infrastructure construction.

- *Make public their decisions and methods by which they choose one firm over another.* In cases where auctions (discussed below) are used, the decision criterion is simple—choose the bid with the lowest price. When other dimensions are at issue, disclosure and justification can help citizens ensure that open bidding leads to the best mix of cost and features in the infrastructure.

We recognize that private firms do not necessarily adopt open bidding procedures when procuring equipment for their own use. However, unlike private firms, government agencies spend money on infrastructure which belongs not to the agency but to the taxpayers. This "wedge" between the entity making the infrastructure procurement decision (the government) and the entity ultimately paying for it (the taxpayers) makes open bidding critical.

Open bidding may not guarantee that infrastructure planners and procurement agencies act on the citizens' behalf, but open bidding should tend to produce better performance than a closed process.[3] Because no procurement system will ever be perfect, infrastructure planners should consider leaving as much infrastructure development as possible to the "market," where the users do the procurement without government planners as intermediaries. Technological changes in telecommunications and electric power generation have expanded the potential role of competition in infrastructure industries that have been heavily regulated. Unfortunately, some aspects of infrastructure, particularly expensive, physical network facilities with substantial sunk, up-front costs, are likely to remain "natural monopolies" and, thus, to remain under the purview of the public sector.

Using auctions and competition to elicit information

To fulfill the objective of bringing the most benefits to the citizens at least cost, infrastructure planners need good information on prices and product characteristics. Well-designed bidding mechanisms can help achieve this goal.

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an antitrust case, *National Society of Professional Engineers v. United States* 435 U.S. 679 (1978), in which a professional "code of ethics" prohibiting competitive bidding was ruled an illegal restraint of trade.

[3] The only argument against open bidding may be that if citizens believe open bidding protects them, they may be less likely to keep a watchful eye on their government. This is why bid rigging in secret is especially harmful. Buyers think competition is working on their behalf, when it is in fact being subverted.

In simple settings, the best device would be an auction, in which competing firms bid on the basis of what they need to be paid to provide the good or service in question.[4] Where auctions are feasible, a couple of principles may help improve on their performance, especially when not enough bidders are available to guarantee full competition:

- Under *second price* auctions, in which the low bidder for a contract is paid the second lowest bid among potential suppliers, each bidder has the incentive to bid exactly what it would take to just make winning the bid marginally profitable for that bidder, i.e., its cost (including a reasonable profit). In a conventional auction, bidders must balance the increased chances of winning an auction by lowering a bid, against the reduced profits from the lower payment. Separating the payment from the bid eliminates that tradeoff, leading to more cost-based competition.[5]

- A *sealed bid* auction, in which firms make only one offer unrevealed until all bids have been submitted, can promote competition. This may seem somewhat paradoxical, in that under oral auctions, bidders compete by learning and then potentially undercutting each others' bids. When a scarcity of bidders makes competition less likely to be intense, however, bidders will be reluctant to undercut because of anticipated reactions from other bidders. Moreover, any collusive scheme to rig bids can be enforced when bidders can react to each others' bids, perhaps with a peremptory low bid, while the auction is still open. Keeping bids sealed until they are all submitted prevents the kind of reactions that can discourage competition and support collusion.

In many, if not most, cases, several product dimensions, including price, will be at stake in infrastructure procurement. Simple price auctions will then not suffice, because the cost of a more expensive infrastructure may be more than offset in increased quality, durability, reliability, or other desirable characteristics. Moreover, a firm might offer a low bid if it will be able to charge monopoly prices later for infrastructure services. Accordingly, the auction must either specify the price to users, or bidders should compete on the basis of the price to users rather than the up-front payment from the government. But because infrastructures are typically long-lived, these prices may be subject to considerable revision over the life of the investment, further complicating the procurement process.

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[4] One might think of "off-the-shelf" procurement of infrastructure facilities, even large items such as telephone switches or electric generators, as purchases in the never-ending auction supplied by markets. For large installed facilities serving a metropolitan area or national region, however, "off-the-shelf" procurement is not likely to be a practical option.

[5] The financial and perhaps political risk to the government from a second price auction is that when there are only a few bidders, there might be a huge gap between the winning low bid and the (higher) payment set by the second lowest bid. Citizens may view this gap as an undesirable extra government expense.

Even with these complications, sealed bids retain considerable advantages. They may prevent collusion, although the more dimensions involved in an infrastructure procurement, the more difficult will it be in any event for competitors to agree how to rig their bids. Perhaps more importantly, sealed bids can encourage a bidder to come up with innovative ideas for infrastructure design, without having to fear that their competitors will imitate those innovations. In this regard, sealed bids can provide benefits akin to those provided under the patent system.[6]

Conclusion

Successful integrated infrastructure planning requires that suppliers be assured of reasonable freedom from expropriation, citizens be assured that their governments are acting in the public interest, and governments be assured that they have the best information on which to select firms to construct and operate infrastructure facilities. First and foremost, this requires the government to commit to stable and efficient principles of property and contract. Open bidding, with multiple bidders and auctions where possible, can promote accountability to the citizens and competition in procurement. Sealed bids may be a useful policy for increasing relevant information and competition regarding both price and quality dimensions of infrastructure services. Competition authorities can play a useful role in ensuring that open bidding is meeting the goal of providing citizens with the infrastructures they desire at the least cost.

[6] A similar argument can be made for limiting rights losing bidders may have to challenge procurement selections. Inferior bids are not likely to be the subject of such challenges. Firms can reduce competition by using the threat of a post-procurement legal challenge as an incentive to discourage submission of winning bids. Potential infrastructure *users*, i.e., the general public, perhaps should retain challenge rights against their *governments*, to ensure that they acted in the public interest in selecting one firm over another to construct an infrastructure facility.

THE CHANGING WORLD OF INFRASTRUCTURE DEVELOPMENT

A NEW ROLE FOR ECAs

Prepared by

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A NEW ROLE FOR ECAs

Introduction

EDC, or the Export Development Corporation, Canada's official export credit agency, is pleased to be both a participant in this important roundtable and to have the opportunity to address you on a subject which will hopefully advance the discussion.

I am happy to have this opportunity to speak with you today about a topic that is near and dear to EDC's heart, not to mention its wallet (or bottom line).

Specifically, I would like to offer suggestions as to how ECAs, not just EDC, can position themselves to enhance the development of infrastructure projects throughout the APEC region.

In doing so, I propose to examine the environment in which ECAs now find themselves operating. I will then turn to the role which ECAs are increasingly asked to play and the characteristics that ECAs in that role should be expected to exhibit.

Next, I will share with you the EDC experience so far as it helps demonstrate how an ECA can satisfy these operating objectives, while respecting, indeed embracing, market-driven principles.

Finally, let me share with you EDC's opinion as to initiatives which can further impact on ECAs in infrastructure development, and initiatives which could undermine the benefits, rendering ECAs less relevant to today's challenges.

The Infrastructure Environment

Deregulation, decentralization and privatization have become hallmarks of political and economic environments in the 1990s. In fact, many of the participants at this roundtable have demonstrated leadership in this movement.

In more recent years, this trend has become central to the economic policies of developing countries as well. Countries grappling with fiscal and external debt constraints have recognized that governments need not, indeed should not, be the entrepreneurs. We have watched as they have re-defined their governments' roles as policy-maker and regulator.

We have witnessed dramatic cuts in public expenditures and a growing reluctance to provide government guarantees. For leaders in general, that has meant a shift away from governments acting as borrowers for project development.
We have celebrated and praised wide-sweeping deregulation which has, in turn, paved the way for massive privatization. Consider one very impressive statistic -- privatization

revenues for developing countries increased by over 700% between 1988 and 1995, to reach US$21 billion.

We've also experienced a massive shift in the sources of capital for project development.

Commercial banks, equity and bond markets have moved into the arena once serviced primarily by ECAs and multi-lateral aid organizations.

Consider

- Total long-term capital flows to developing countries ballooned from US$100 billion in 1990 to almost US$285 billion in 1996.
- In 1990, official development finance, that is grants, loans from ECAs and multilaterals combined, represented 56% of total flow. By 1996, their share had fallen to only 14% of the total.
- In contrast, private sources of capital have witnessed tremendous growth. Capital market flows increased more than a thousand-fold from US$5.5 billion in 1990 to US$92 billion. Foreign direct investment grew five-fold from just under US$25 billion in 1990 to almost US$110 billion six years later. Commercial bank flows increased 100% to reach US$34 billion in 1996.
- Infrastructure-related foreign investment and lending in developing countries reached US$27 billion in 1996.
- Yet, the World Bank estimates that this is only a small portion of the approximate US$120-150 billion needed each year to ensure high sustainable growth in East Asian economies alone.

Suffice to say private capital is in high demand and flowing.

Capital sources have not just become more numerous and varied, they have also become more sophisticated. As the ability of the private market to analyze and distinguish between commercial and political risks has increased, so too has the market's capacity to accept those risks in whole or in part. In turn, traditional market forces are playing an increasingly effective role in determining the most efficient allocation of this new capital.

The implications for ECAs are dramatic. The traditional role of lender or insurer of last resort is in fluctuation. ECA influence in determining the destination and terms and conditions of financing is being challenged. The reliance on ECAs to absorb the bulk of the project financing load is rapidly decreasing.

In short, the traditional relevance of ECAs is challenged.

ECAs as Catalyst

As you are no doubt aware, the APEC economy ECAs have been meeting to discuss what our role should be.

One clear theme is emerging from our discussions, namely that ECAs, far from being irrelevant, have a catalytic role to play in facilitating more private capital flows to infrastructure development.

That is, ECAs must increasingly go where the private market is less willing to go. We must act as bridges to fill the gaps that are still out there.

We must leverage private capital flows to projects. We must provide the type of support that will encourage the private market to share risks. How?

- We can do so by being flexible and creative in engineering value-added financial solutions.
- We must become experts in assessing risks and innovators in managing those risks.
- We must act as risk-sharing partners, not passive substitutes for risks, in recognition that private lenders will not take on all the risks themselves.

If ECAs don't do this, we will not continue to be relevant

As a project sponsor or a private market participant, you may ask yourselves why this should matter to you. Well the answer is pretty straightforward.

Relevant ECA participation will have a number of positive impacts on infrastructure development:

- improved viability of financing plans and hence greater chances of success;
- accelerated development of financing and closings;
- lower costs to borrowers/buyers and lenders alike, and
- more equitable distribution of risks

Best in Class: A definition for ECAs

If we accept that ECAs have a catalytic role to play and that there are real benefits to infrastructure development if they successfully fulfill this role, our next line of thought should be what exactly is relevant for ECAs.

Let's assume a definition of a best-in-class or relevant ECA involves terminology like:

- unique, or it offers something that the market is not offering
- useful, or it provides value-added that is needed
- not merely a source of risk capacity, but rather a risk sharer

What are some of the principles such an ECA would follow?

EDC's view is that such an ECA would continuously look to the market to identify where the gaps in the market are -- where that ECA's services are best applied.

- That ECA will not be satisfied with a lender-of-last-resort mentality.
- It would not be seeking to distort the market by providing grants and subsidies.
- It will not be satisfied with a role as a source of cheap funds or a deal stuffer.
- Rather it would be seeking opportunities to take its place among other capital sources as an equal partner -- a full risk sharer.

Such an ECA would offer a breadth-of-solution capability to fill the gaps in the market that it has identified.

- That ECA would recognize that restricting itself to narrow, third party avenues of support, for instance insurance/guarantees alone, would be insufficient.
- It would want to address a broad spectrum of project risks, be they financial or contractual, with a variety of lending, insurance and even equity services, all capable of engaging the project directly.
- It would be a full service financial institution.
- A best-in-class ECA would approach every situation on a case-by-case basis looking for opportunities to be creative and innovative.
- A best-in-class ECA would have the flexibility to draw upon a vast toolbox of risk management solutions, tailoring the tool set to each situation.

That ECA would also actively engage the private market in dialogue and mutually beneficial business interests. This is because:

- The ECA will see the value of a commercial orientation and adopt it for itself;
- It will recognize the merits of aligning itself with strategic partners in the private market, and
- will know it cannot learn by watching from the sidelines. It will insist on first-hand experience in closing deals.

And, because that ECA has gotten to know the market, because it offers a broad range of products to fill the gaps, and because it has built important relationships with private market participants, that ECA will be sought out repeatedly for deal participation, thereby affording it the opportunity to build its expertise and credibility as a relevant, useful, risk-sharing partner.

Operationalizing a "Best-in-Class" philosophy

So, what does that all mean for the ECA community? How does an ECA operationalize these broad principles?

EDC believes there are many ways to do so. For example,

- Place strong emphasis on developing top-notch risk management techniques and practices.
  That is, the ability to identify and analyze the full gauntlet of financial and contractual risks that enables an ECA to apply appropriate risk mitigation techniques. From EDC's experience this capability is best resident in-house.
- Assess transactions according to commercial principles.
  Bankability and viability are largely interchangeable concepts when evaluating projects.
- Operate on a user-pay basis.
  Wherever possible support should be structured on a cost recovery basis.
- Price for risk.
  There are two concepts here: a) seeking full compensation for risk, applying appropriate commercial principles of provisioning for future loss; and b) as much as possible, use commercial market risk/return valuations.
- Don't distort the market with grants or subsidies.
  Natural follow on to previous point.

  Failure to do these things distorts the market.

- Cover operating expenses from revenues.
- Take to heart the WTO obligation that ECAs be financially self-sustaining.
- Take a case-by-case approach to every transaction.

  Seek optimal solutions to market participation.

  Increasing use of political risk only coverage.

  Selective risk or partial risks insurance or guarantees should be combined with full lending exposure.

  Tracking of debt exposures in last out scenarios, etc. can be valuable.
- Finally, build expertise and a body of experience by doing deals. This flows naturally as a reward for adopting a commercial approach.

  There is no substitute for participation which is in itself essential to recognition of the concepts that will best apply.

Attainable? EDC's Experience Speaks Volumes

While we may accept all of this as a worthy undertaking, we have to ask ourselves is it really attainable?

EDC's own experience says yes, it is.

Recent changes

In the late 1980s EDC embarked on a road of being more responsive to the needs of our customer.

- The new Export Development Act in 1993 allowed EDC to expand its programs and to develop simpler, more streamlined processes for existing programs.
- EDC became more customer-oriented while applying greater commercial discipline to its programs. For example, we introduced six Corporate Strategies of Customer Satisfaction, Enhanced Bench Strength (having the people and the tools to get the job done), Balanced Spread of Risk, Positive Financial Results, Volume and Productivity Targets.
- The creation of the Project Finance "center of expertise" and eight sector-based business teams were the essence of a major reengineering effort that was completed in 1995.

Today, we continue to evolve EDC's corporate culture to be more responsive to customers and to ensure we have the people, the tools, and the processes to get the job done on a financially self-sustaining basis.

Commercial orientation has been rewarded

EDC's long tradition as a commercial ECA has reaped its rewards.

We have been profitable in virtually every one of our 50 years of operation.

We have grown our business volumes and profits substantially, particularly over the past five years:

- In 1996, we did $22 billion worth of business, producing a net income of $112 million. This represented an over 150% increase in volume over 1992 levels.
- During this period, we increased our direct lending business by 78% to $3.7 billion.
- We closed more than 21 project finance transactions in the process.
- We are currently tracking 25 to 30 active limited recourse projects valued at over $10 billion and have set a 1997 business volume target of over $1 billion in EDC financed amount.

We have been asked to direct lend, underwrite, and participate as a major partner or a minor member of a consortium.

We have co-arranged, coordinated and advised with commercial banks, IFIs and other ECAs.

We have closed deals on a project finance basis in Europe, the US, South America, Africa, and Asia.

We have supported transactions in mining, pulp and paper, telecommunications, steel, power and transportation.

We have shown how an ECA can leverage private sector involvement in infrastructure projects through a variety of products, e.g. bonding, PRI, direct lending as co-financer.

The key point here is that by doing deals, we have built relationships and learned from (and taught a few lessons ourselves) project sponsors, developers, legal firms, independent lending advisors, equity providers, and other lenders.

For example, in some cases with commercial banks, EDC has shared due diligence tasks and is currently working on deals where other ECAs and commercial lenders are relying on EDC and/or other ECAs to carry out certain technical or insurance-related due diligence tasks.

We believe doing deals builds relationships that carry forward to the next opportunity. For example, the lawyers who represented lenders, including EDC, are now representing

sponsors on another deal, while at the same time we, EDC, are talking to sponsors about a third project.

Doing the deals is also building our own expertise. EDC's team of eight project financing specialists is mandated to originate, structure and negotiate deals. For each transaction, the team is augmented by other EDC specialists from the sector teams and country teams and our in-house industrial advisory group.

The more deals we do, the greater our internal expertise and our capacity to do others.

The case-by-case approach followed by EDC in all its business is based on the principle of pricing for identified risks based on competitive commercial pricing that reflects the market, sector, and transaction particulars.

EDC has chosen this route to avoid distortion in market disciplines, be they pricing, security arrangements, documentation, inter-lender relationships, or project viability.

For us, private sector collaboration has one key goal -- embrace capital sources without subjecting the project to unsustainable and unwarranted costs.

OECD Consensus

Of course, one cannot advocate a flexible approach without speaking to the issue of the current environment in which ECAs operate.

The OECD Consensus, as we all know, has been around for over 20 years. It was originally called the gentlemen's agreement and sought to ensure that ECAs set terms which did not distort the market.

However, the floors quickly became the ceilings and the formulas for setting rates became outdated. It took several years to reach agreement on how the Consensus could be changed to bring more commercial reality to the ECA practices.

The Consensus has been focused over the past two decades on dealing with ECAs lending, guaranteeing, and insuring projects where the risk has been the host country. Now in the 1990s, the administrators of the Consensus are faced with a new challenge -- the growing trend towards privatization and the role of ECAs being asked to take more commercial private sector risk

In EDC's view, it is vitally important that the OECD Consensus group adopt a new approach as it undertakes to develop "disciplines" for project finance.

Cookie-cutter solutions do not work. They are counterproductive, to say the least.

EDC believes there is an opportunity here for APEC ECAs to work together to ensure there is a reflection of market reality as this process unfolds.

Failure to do so will render the Arrangement, and its participants, irrelevant and will seriously curtail infrastructure development.

After all, history has proven that erecting walls to keep the market out doesn't work. If the OECD group insists on doing so, those walls will simply keep ECAs out of the market.

Conclusion

Let me finish by saying that these are exciting times for ECAs. We have to view ourselves building the private market, not distorting it. We face an opportunity to carve out a unique and relevant role in the new world of project finance. We have an opportunity to evolve into the role of arrangers rather than simply continue the traditional role as debt providers. We can act as intermediaries between banks, exporters, and capital markets. We can create creative structures to attract the capital markets. We can provide credit enhancement of capital market structures. The possibilities are endless.

The net effects for infrastructure developments are:

- improved viability of financing plans and hence greater chances of success;
- accelerated development of financing and closings;
- lower costs to borrowers/buyers and lenders alike, and
- more equitable distribution of risks.

EDC is pleased to be a part of the APEC ECA group that is taking a deliberate run at doing just that.

Thank you.

THE CORPORATE SECTOR

NEW PARTNERS IN SUSTAINABLE URBAN DEVELOPMENT

Prepared by

Akhtar Badshah,
Executive Director, Asia Pacific Cities Forum

THE CORPORATE SECTOR: NEW PARTNERS IN SUSTAINABLE URBAN DEVELOPMENT

Ladies and gentlemen, it is a privilege for me to be here today and share some of my thoughts at this esteemed gathering. As we approach the new millenium, we are standing at the threshold of a movement in which all stakeholders, business, government, civil society, academia, media, and the people are joining forces, contributing their talents, time, and resources to undertake programs that are both environmentally sustainable and equitable.

I have been asked by the Dialogue organizers to talk about some of the issues that are at the forefront of human sustainable development in the Asia-Pacific region. As you all know, Asia is booming, businesses of all kinds - multinationals, regional, and local - are entering the market, fueling a growth that is having a dramatic impact on the quality of life in cities. The details of this impact are clear and the opportunities are also evident.

Four Major Trends in Asia

1. 4.2 billion of the world's seven billion populations in the year 2010 are projected to be in the Asian region[i].
2. About half (45%) of all GDP growth will be in Asia. By 2010, it has been suggested, seven out of the world's 10 largest economies measured by GDP at purchasing power parity - China, Japan, India, Indonesia, the Republic of Korea, Thailand, and Chinese Taipei - will belong to this region. The other three will be the United States of America, Germany, and France.
3. By 2010, 43% of the population in Asia will live in cities[ii].
4. Thirty cities in Asia will have populations greater than five million (compared to only two US and six European cities)[iii]. Shanghai and Bombay will each have 20 million people. Beijing, Dhaka, Jakarta, Manila, Tianjin, Calcutta, and Delhi will have more than 15 million.

Surprisingly there is also another movement that is taking place. Since the Rio Earth Summit, there has probably been greater and more fundamental change in approach by the business sector to environmental issues than in any other sector. While there are far too many companies - major players as well as millions of small-scale enterprises - adding to the planet's environmental problems with little thought of their consequences, a growing number of corporations and small businesses have made a genuine and substantive commitment to managing and improving their environmental impacts. For many it is a commitment which recognizes not only the responsibilities, but also the business advantage of environmental leadership.

The private sector has a critical role to play in the drive towards environmental sustainability. It is a role that is three-fold. The three greatest sources of environmental problems are poverty, unsustainable production and consumption patterns, and a lack of innovative green technologies. The private sector has a major contribution to make in tackling all three of these issues. It can promote environmental sustainability by:

- Investing in cleaner production and promoting more sustainable consumption patterns;
- Developing products that are "green" – consume less energy and materials, and have fewer environmental impacts than conventional technologies and methods, and
- Helping to tackle poverty through its contribution to economic and human development.

I will illustrate each of the above points with examples to highlight how the private sector can participate and contribute to environmental sustainability. Before I do that, however, I would like to say a few words on the "the corporate sector: new partners in urban development," and "good corporate citizenship: a win-win proposition." It is important to understand both of these in order to be able to undertake development activities.

The Corporate Sector: New Partners in Urban Development

As national and local governments around the world are forced to reduce spending on infrastructure and municipal services, partnerships between government, the private sector, and community-based organizations are increasingly seen as crucial to urban development and management. By inviting diverse constituencies to sit at the same table and collectively define problems, a shared vision can be formulated and solutions found. The result is cities that are more economically vibrant, have greater social stability, and a healthier, more engaged citizenry.

Each sector has a distinct role to play in this process. Governments must introduce decentralization initiatives, undertake economic reforms, and liberalize policies. Non-governmental organizations and community groups understand local needs and can lend their special expertise in program implementation and service delivery at the grassroots level.

Traditionally, the role of the business sector in community development has been that of philanthropist. But businesses benefit substantially from reforms and programs that foster stable, healthy communities, and can do more than create wealth. They can also widen economic opportunity, invest in human capital, promote environmental sustainability, and enhance social cohesion. Increasingly, they are becoming equal partners and contributors in efforts to create sustainable cities.

Good Corporate Citizenship: a Win-Win Proposition

Until recently, corporations largely avoided the inner city and were not interested in participating in urban reinvestment efforts. Now, however, many are joining with government and community groups as partners in revitalization strategies. In part, this is an acknowledgment that business is a stakeholder in the success or failure of an entire urban region. A corporation's headquarters can be jeopardized by deteriorating surrounding neighborhoods, and the productivity of its work force threatened when the locale's quality of education is poor and its youth are drawn into criminal activity.

While corporations cannot replace government or community organizations as funders or policy designers, they possess a focused energy and goal orientation that can help galvanize government and community efforts. Where a clear, long-term benefit to all stakeholders is identified, corporate partnerships based on trust, accountability, transparency, and a sense of shared purpose, can be a powerful tool in support of sustainable urban development.

How does the private sector play a responsible role in the urbanization process and serve the interest of the community? What kinds of partnerships need to be formed to ensure equitable and sustainable urban environments? It is important to note that business can play other roles besides creating wealth. It can widen economic opportunity and participation, invest in human capital, promote environmental sustainability, and enhance social cohesion. Investing in stakeholder partnerships, with both primary and secondary stakeholders, they can play a valuable role in enhancing a company's reputation, competitiveness, productivity, efficiency, risk management, innovativeness and long-term survival. Such partnerships can range from:

- commercially-driven alliances and joint ventures;
- socially-driven alliances and joint ventures, and
- ventures which combine both commercial and social objectives.

Cleaner Production and Sustainable Consumption Patterns

Setting Clear Goals and Achieving Measurable Results — 3M's Environmental Management System (EMS)

- Commitment to meeting its environmental targets
- Continually improving its environmental performance on a world-wide basis
- Establishment of comprehensive management systems
- Training and motivation of its employees
- Continuous improvement of environmental performance of products and processes
- Audits to verify performance and identify improvement opportunities
- Incorporation of environmental challenges and opportunities into its strategic plans of every business unit

Developing Green Materials –Opportunities in the Asia-Pacific Region

Appropriate Technologies

- Building Materials
- Infrastructure Systems
- Garbage Collection and Recycling
- Energy

Large-scale Developments

- New Residential and Mixed-Use Developments
- Build, Operate, and Transfer (BOT) and Build, Own, and Operate (BOO)
- Transportation Systems

Environmental Clean-Up

- Water Pollution
- Air
- Solid Waste Systems

Ecological Waste Management, City of Manila, Philippines[iv] is an innovative community participation and advocacy to transform attitudes toward refuse disposal in crowded markets in low-income neighborhoods. This process was facilitated through extensive community organizing and financial incentives and with support of a wide range of stakeholders, including local government and private enterprise.

Metro Manila is a region of contrasts that in many ways epitomizes environment and development issues of urban centers in the developing world. The metropolis generates over 6,300 tons of solid waste daily, but its sanitary landfills can accommodate just over half that amount.

In the ecological waste management approach being introduced in Manila, composting and recycling generate income from what is normally considered "waste." This income helps make the approach attractive to communities, and sustainable as a waste management scheme. The reduced volume of waste decreases the cost of collection and disposal, thereby saving money for national and local governments and the local community.

Ecological waste management is currently being implement in one of the municipalities (Sta. Maria). Here, one of the local businessmen set up a company called Assorted Wastes and Recycling Enterprises Inc. (AWARE), which entered into an agreement with the local government to process the biodegradable waste coming from the public market (which accounts for about 40% of the town's solid waste) into organic fertilizer. A local ordinance was passed mandating the segregation of waste within the market. The market master enforces this. The town also allowed free use of a part of their dumpsite as the processing area. One of the town's compactor trucks brings the segregated waste to the processing area where the employees of AWARE then mix them with other waste (such as pig manure, burned rice hulls and sawdust) to make them into organic fertilizer (within 45 days).

An NGO, the Sta. Maria Economic Development Foundation assists with the IEC. They now sell their fertilizer (which has been tested by the Bureau of Soils and Water Management and certified by the Fertilizer and Pesticide Authority) to farmers' cooperatives at P155.00 per fifty-kilo bag. Recovery is about 50%. Recyclables are also received and sold. The residuals are dumped into an open dumpsite.

The project in Sta. Maria has been very successful and AWARE has been hired as the project consultant for other sites in Metro Manila. The main role of AWARE is to transfer the technology used and identify buyers of the organic fertilizers that will be produced by the plant.

Environmental Management Project in the City of Ilo, Peru,[v] is an exciting story of formerly antagonistic industry-community relations becoming constructive through pragmatic negotiation and fair play. Situated on the southern coast of Peru, Ilo has grown rapidly, increasing from a population of 4,000 in the 1950's to 70,000 in the 1990's. This has led to chaotic development due to the lack of planning by the city authorities. Further problems include air pollution and sea water contamination leading to a depletion of traditional fishing activities. There has also been a depletion of drinking and irrigation water due to the use of excessive amounts of water and control of the water source by the refining industry. Moreover, the population growth has encroached on the land used by the mining industry, creating tension all around. Over time these problems were exacerbated, leading to dangerous levels of animosity between the community and the industry.

In the late 1980s an Environmental Management Committee was set up to diffuse the tension and develop a comprehensive plan to correct the problems and develop workable solutions. The committee included representatives of Southern Peru Ltd. (the mining company), the fishing industry, universities, municipality, the community, and the health department. One of the first aims of the committee was to set up clear pollution norms. Working with all of the stakeholders, the committee was able to get central government recognition and persuade the industry to accept its responsibility and agree to undertake environmental clean up. In return, the community agreed to channel its protest through municipal proposals, and both sides agreed to enter into negotiations with transparency and pragmatism.

This process of negotiation was slow and full of obstacles. However, by acknowledging that all the negotiating parties were responsible for the solution, the obstacles were slowly overcome and a number of solutions proposed. The two most important were:

1. An Environmental Plan for Southern Peru Ltd., including a basic agreement whereby the company invested $100 million in partnership with the government in projects for environmental protection. This included the development of two industrial and urban waste water plants, a plant for sulfuric acid, installation of a refuse disposal site and sanitary fill, a reforestation program for the region, and controls to stop sea pollution.

2. An Urban Development Commission was established to reorganize the General Plan of the city. Its tasks included reconfiguring the land which had mining rights; restructuring the urban space and integrating the railway tracks by developing more pedestrian crossings, and building vehicular overpasses, and building parks and playgrounds.

One of the major successes of this partnership has been the development of a city vision for the future that takes into account the rights of all of the stakeholders. The Ilo project shows that a situation of confrontation can be changed if there is frank recognition of different interests and a willingness to accept responsibility.

Poverty Alleviation and Human Development

***The Citra Niaga Urban Development Project*,** Samarinda, Indonesia[vi] is a successful land-sharing and urban renewal project based on a government, private developer, and community partnership. The project redeveloped a slum in the city center into a commercial complex with kiosks and stalls for the pavement traders living in the slum. Both the owners of the shop-houses who had legal rights, and the pavement traders who did not were accommodated into the project. The project has become the focal point of the city, where people gather in the evenings for shopping and entertainment.

The project was developed by the city authorities in order to solve the problem of rural migration and the resulting street hawkers choking the city streets. Utilizing land sharing, the city authorities were able to address the issue of slum consolidation and urban renewal of central city land.

The formation of a cooperative and participation by city authorities in all aspects of the scheme was important for its success. The innovative aspect of this scheme has been two-fold: the involvement of the local government, the central government, and the private sector; and the process undertaken to ensure the participation of families who occupied the area and had been selected to be part of the new scheme. The NGO worked closely with the community in identifying what their needs were, explaining the scheme to them, and showing them how they would improve their economic conditions at a cost no greater than what they had been paying to the local slumlords for water and other services. The project design reflects the traditional *goteng royand*, or mutual aid lifestyle, with cluster development for the commercial street hawkers and shop-houses. The scheme was planned as a self-cost recovery, self-sustaining and profit-making venture.

Citra Niaga serves as a model for successful land sharing, accommodating people of all income levels, while ensuring the rights of the pavement traders. In reclaiming prime land for public use, it not only managed to upgrade a crowded squatter settlement, but also developed a public plaza in the heart of the city reestablishing the link between the harbor and the city. It was financially viable, creating a profitable business venture while including the usually ignored social and ecological aspects. Citra Niaga demonstrates that even in small towns profits can be made if projects are well thought out and if innovative financing schemes, through a mixture of cross-subsidy and self-finance, are used.

This combination of creative land-sharing and urban renewal has produced a scheme which is not only financially successful, but has also provided that mix of commercial activity which is in keeping with the traditional Asian commercial fabric. Citra Niaga has therefore achieved a truly Asian urban development, with significant relevance to other developing countries.

Comprehensive Community Development – The Atlanta Project, Atlanta (TAP),[vii] announced by former President Jimmy Carter in October 1991, is the logical culmination of the model of direct corporate partnerships, and one of the most ambitious community projects ever taken on by the corporate sector. The project matches 20 "cluster" neighborhoods in the city with corporate partners within a supportive central structure.

The project's goal is to empower citizens to solve problems they identify in their neighborhoods and to foster lasting connections between neighborhoods and government agencies, non-profit

service organizations and the business community. TAP's comprehensive approach focuses on six major areas: community development, economic development, education, housing, health, and public safety.

TAP hired cluster coordinators who reside in the neighborhoods to encourage a true "bottom-up" approach to problem solving. The corporate partner of each neighborhood is responsible for helping the community prepare a strategic development plan that reflects the community's priorities and capitalizes on its assets. Each corporation loaned an executive who worked with the cluster coordinator and the neighborhood steering committee for five years.

The long-term commitment is an essential feature of the project. Another is the intense level of involvement expected from the corporate partners. The project relies heavily on corporate volunteers, but also looks to corporate partners as strategic implementers who can take vaguely defined community aspirations and translate them into a feasible work program.

To support the project, 22 corporations agreed to provide an executive for five years. Some have provided additional in-kind donations and other support to clusters and the project. In return for their investment, the corporate partners expect results. While they do not envision the eradication of poverty and urban decay, they expect to see measurable progress toward neighborhood goals.

Several local and national philanthropies have stepped forward to support the project, as have more than 3,000 individuals and organizations representing 100,000 potential volunteers. A number of successful projects has been initiated and undertaken by the clusters and many specific projects have been remarkably successful.

Summation

There are a few general points that I would want to highlight that will put the whole issue of public sector involvement in environmentally sustainable projects into perspective:

1. There can be no global ecological sustainability without urban ecological sustainability. The private sector has an important role in developing circular, rather than linear, systems as this is the key to reversing our environmental deterioration.
2. There can be no urban environmental solution without alleviating poverty. The private sector has an increasing role in developing alternative technologies that will provide adequate water, efficiently collect solid waste and dispose sewage.
3. There can be no lasting solutions to poverty or environmental degradation without partnerships with the community. Private sector partnerships are the key and they have to go beyond the traditional philanthropic approach and actively engage in the development of the city. They have to become participating stakeholders.

The Societal Benefits of Stakeholder Partnership
Increasing Efficiency, Effectiveness and Equity

Public-private partnership can help to achieve greater efficiency by:

- Eliminating duplication of cost and effort
- Pooling scarce financial, managerial and technical resources
- Optimizing "division of labor" and burden-sharing
- Decreasing costs associated with conflict resolution and societal disagreement on policies and priorities
- Creating economies of scale
- Promoting technology cooperation
- Facilitating the sharing of information
- Overcoming institutional rigidities and bottlenecks

They can also help to improve effectiveness by:

- Leveraging greater amounts and a wider variety of skills and resources than can be achieved by different groups and sectors acting alone
- Accommodating broader perspectives and more creative approaches to problem-solving
- Addressing complex and interdependent problems in a more integrated and comprehensive manner
- Shifting away from "command and control" to more informed joint goal-setting
- Obtaining the "buy-in" of beneficiaries and local "ownership" of proposed solutions, thereby ensuring greater sustainability of outcomes
- Offering more flexible and tailored solutions
- Speeding the development and implementation of solutions

They can facilitate increased equity by:

- Improving the level and quality of consultation with other stakeholders in society
- Facilitating broader participation in goal-setting and problem solving
- Building the mutual trust needed to work through diverse, often conflicting interests, toward shared responsibilities and mutual benefit

Source: *Business As Partners In Development*, Prince of Wales Business Leaders Forum

This is an extraordinary time in cities. Communities are tackling old and new problems in innovative ways. They are engaging new partners, working entrepreneurially, using resources in unaccustomed ways, and breaking down barriers in service delivery to revitalize cities and meet complex human needs.

In recent years, there has been a swelling of community-building activity at the local level, not just within governments, but also among private and grassroots organizations. The nature of community-building efforts has evolved dramatically. Increasingly, our consciousness has moved away from simple bricks and mortar to viewing housing and community development in the context of integrated service delivery.

The success of these efforts is largely due to the fact that local partnerships are being formed, especially innovative programs that involve local corporations to sponsor specific aspects of community redevelopment efforts. The unique aspect of this partnership is that communities and non-profit organizations are foregoing the traditional corporate philanthropic model of only giving money. They are now seeking active corporate involvement in these projects.

It is increasingly clear that neither the government nor the community can meaningfully solve "the urban problem" on their own. What the above examples have shown is that it takes a coalition of forces and initaitives—local government reforms, institutional innovations, and private sector support— for local city governance to work effectively. Just as it takes "a village to raise a child," it takes a complex global network of people, institutions, resources, and information to "raise" a sustainable city.

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INTEGRATED PLANNING FOR SUSTAINABLE CITIES

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INTEGRATED PLANNING FOR SUSTAINABLE CITIES

Introduction

As part of the APEC Public-Business/Private Sector Dialogue on Infrastructure Development held in Los Cabos Mexico, 18-20 June 1997, Environment Canada was asked by the Government of Mexico to host a side meeting on integrated planning for sustainable cities. The results and findings of the side meeting were reported to the APEC Infrastructure Workshop officials for their consideration in the preparation of the Workshop work plan and conduct of future initiatives.

The two-hour side meeting, which took place on the morning of 20 June 1997, provided delegates to the APEC Dialogue with an opportunity to meet and exchange views and ideas on a range of issues, policies and best practices relating to sustainable cites and "greener " infrastructure and buildings. In addition, the side meeting built upon the considerable efforts of a range of APEC economies over the past several years, including: *1996 Seattle APEC Infrastructure Dialogue, Environment Canada May 1997 Workshop in Vancouver ("Greener Infrastructure and Building"),* and the *APEC Environment Ministerial held in Toronto in June 1997*. Furthermore, the findings of such meetings and events will assist subsequent efforts in this field, including the *Seminar on Environment and Economic Policies towards Sustainable Cities in APEC* (Beijing, 18-20 September) and the November 1997 *Experts Workshop on Economic Instruments Towards Sustainable Cities* (Chinese Taipei).

Objectives

The key objectives for the side meeting on integrated planning for sustainable cities included:

- raising the *awareness of issues* relating to sustainable cities during the context of the June 1997 APEC Infrastructure Dialogue and the Canadian Year of Asia Pacific;
- *beginning to better identify strengths in pollution prevention and green design* approaches in APEC economies;
- *developing better links* between economies (public/private), and
- encouraging *efforts beyond 1997*, given the 30-year horizon of tremendous urban expansion anticipated.

Summary of Results

The side meeting was attended by approximately 35 public and business/private delegates from 10 economies, as well as by representatives from major international financial institutions (IFI's).

It was chaired by Chris Hanlon, International Affairs Directorate, Environment Canada with presentations from three key notes speakers: Dr. Akhtar Badshah, Executive Director, Asia Pacific Cities Forum (U.S.); Mr. Michael Harcourt, Chair, Foreign Policy, National Roundtable on the Environment and the Economy (Canada), and Ms. Martha Nino, Director, Urban Sustainable Development, Ministry of the Environment (Mexico).

A detailed question and answer period followed the expert presentations. The session resulted in a number of specific follow-up recommendations for the APEC Infrastructure Workshop. Furthermore, the side meeting provided business and economy representatives with an opportunity to network for future collaboration.

Definition of "Greener Infrastructure and Buildings" for Sustainable Cities

"Promoting rapid economic growth that ensures a healthy environment and improves the life of our citizens is a fundamental challenge." (APEC Leaders Declaration, Subic Bay 1996)

Attendees at the side meeting agreed that the projected population growth in the APEC region and the forecast demand for infrastructure (est. $2.0 trillion) and buildings (est. $1.5 billion) in the region over the next decade would require new and innovative public-business/private sector partnerships. It was further agreed that the number and scope of capital investment projects, and the day-to-day industrial, commercial, institutional, and residential activity they generate are bound to have a substantial environmental impact. At the same time, this activity will generate sufficient wealth to clean up old environmental problems.

Accordingly, there was general agreement that "greener infrastructure and buildings" in the APEC region should:

- fit best with natural ecosystems through pre-project design, siting, and life-cycle project management;
- conserve energy and materials, and limit waste during construction and renovation;
- prevent pollution and save energy, water, and materials in on-going operations, and
- use environmentally responsible products and services to reduce the risks to health, the environment, and social equity.

Sustainable Cities: Complement Business/Private Sector Investment

Key note presentations and discussions highlighted the benefits to the business/private sector of environmentally responsible design, construction, and operation of infrastructure and buildings, including:

- designing out potential environmental liabilities;
- offering a clear and supportive public policy environment for investment;
- better assuring financing from IFI's
- speeding up projects throughout their life cycles, and
- increasing effective communication between the public and private sector.

Principles and Guidelines for Developing Sustainable Cities and Infrastructure

Side-meeting participants endorsed the principles and guidelines for sustainable cities and "greener" infrastructure and buildings which were prepared by over 75 public/private sector experts from the APEC region at the May 1997 Environment Canada Workshop in Vancouver - *"Financing and Technologies for Greener Infrastructure and Buildings"*.

Principles and Guidelines

1. *Plan for Livability and Sustainability*: "Greener" infrastructure should seek to achieve a high quality of urban life, which is closely integrated with environmental sustainability. It should also recognize that sustainable urban and rural development are closely linked.

2. *Locate Development Wisely*: "Greener" planning seeks to maintain and enhance ecological systems, both in existing and new development sites, and to sustain agricultural, historical, and fragile natural areas, through sound site analysis.

3. *Take Account of Links Among Systems*: Urban decision-making should be grounded in the close relationship among ecological, human, financial and technological systems. Links among these systems are the most complex and active in the largest cities. Local institutions for governance need to be strengthened accordingly.

4. *Develop a Shared Vision*: Decision-making should be grounded in a common vision of what cities can and should become over the long term. Local capacity for leadership and accountability should be developed and utilized. Decision-makers should take action only after consultation with those affected, permit time for public consultation of proposed directions, and build trust into the process through transparency, information-sharing, and active engagement in implementation.

5. *Apply Tailored, Comprehensive Solutions*: Asia-Pacific cities face many common challenges, and may find each other's experiences useful in developing workable "greener" solutions. Nevertheless, each will adopt decision-making processes, and infrastructure and building solutions fitting within their unique cultural, social, political, economic, and natural and ecological systems. A consortium approach, including both public and private sectors, will help ensure that potential solutions are considered from a variety of standpoints, and that users' needs are taken into account.

6. *Overcome Institutional and Financial barriers*: Significant institutional barriers preventing the application of "greener" solutions to address the huge infrastructure and building demand in the Asia-Pacific region (e.g. fragmented local authority and outmoded codes and standards, etc.) need to be addressed and overcome.

7. *Manage Risks of Applying Greener Solutions*: Financial institutions and mechanisms currently have limited means to assess and manage risks arising from trying new infrastructure and building solutions. Consequently, local administrations may be hesitant to adopt such approaches. For proven or tested "greener" solutions, IFI's, governments, and relevant private sector interests should underwrite such risks by providing initial "leverage" financing or loan guarantees.

8. *Seek New IFI Financing Methods*: IFI's are structured to deal with national governments, which assume responsibility for repaying loans. IFI's should be encouraged to devise means of investing directly in local infrastructure ventures. They should continue to promote and to invest in comprehensive urban management projects in Asia Pacific economies.

9. *Implement New Institutional Structures*: Rapid economic growth in Asia-Pacific cities provides an opportunity to contract out and privatize infrastructure and buildings. These opportunities can improve environmental performance if they take place within policy frameworks and performance criteria set by public sector bodies to protect the wider interests of the public.

10. *Bring Marginalized Settlements into the Mainstream of Urban Life*: If large low-income urban areas remain unserviced they will undermine the overall attractiveness and potential of urban economies. Creative infrastructure and building solutions for these areas will also increase urban social equity, employment, and physical amenities, and engage all sectors.

11. *Build People's Capacity*: Adapted and innovative solutions for sustainable cities must be accompanied by capacity-building and training, to enable

populations to adapt to new systems, use them efficiently, and maintain them over time. Youth, in particular, should be engaged to build the capacity to manage such systems across generations.

12. *Determine Where to Start*: While the ultimate priority for applying "greener" solutions will be in the largest urban regions, smaller centres may offer more fertile initial testing grounds for early use.

13. *Promote High Standards for Urban Professionals*: Those designing urban infrastructure and systems, arranging financing, and managing their implementation have unique responsibilities. A global code for such professionals would assist them to consider the key economic, environmental, and social implications of their recommendations to decision-makers.

14. *Link Tenure with New Building Methods*: Greener building design, materials, and construction methods should be accompanied by tenure forms which allow greater resident and/or user control and encourage a culture of maintenance.

15. *Combine Innovative and Tradition in Building Design and Materials*:
Greener building design should combine more living space and amenities, while maintaining traditional benefits of higher density, cultural heritage, and orientation to street life. Similarly, greener building materials and systems should seek to preserve what has worked well in the past, while overcoming future environmental and resource depletion problems.

16. *Measure Results*: In order to promote accountability, cost-effective technology transfer, and continuos learning, both greener and existing infrastructure and building systems should be regularly evaluated and compared for the benefit of both decision-makers and users. Urban indicators can be of great assistance in comparing progress made by different cities, and also in measuring effectiveness of different interventions within individual cities.

Benefits

Those participating in both the May 1997 Vancouver experts meetings and the 20 June 1997 Los Cabos APEC side meeting on Integrated Planning for Sustainable Cities noted that developing "greener" cities and urban regions can have immense benefits including:

- increased local employment and business opportunities;
- increased local control over decisions affecting urban residents;
- reduced vulnerability to disaster and breakdown;
- reduced long-term cost, including those for health care, heritage restoration, and clean-up and remedy of environmental damage;
- accelerated technological innovation, social and institutional innovation, and
- increased trade, development and Trans-Pacific ventures.

Next Steps

Side-meeting participants proposed to the APEC Infrastructure Workshop meeting that APEC:

- continue its efforts relating to sustainable cites and greener infrastructure and buildings by building upon the momentum generated by a wide range of events and activities throughout the Asia-Pacific region (e.g. Vancouver Workshop; the Toronto Environment Ministerial APEC, etc.);
- further elaborate the principles/guidelines prepared by experts at the Vancouver Workshop and endorsed by Los Cabos side-meeting participants, and ensure appropriate linkages to other sectors for integrated planning (whole systems);
- using guidelines/principles and other appropriate information, begin to develop a series of manuals, databases, and guide books on achieving sustainable cities and greener infrastructure and buildings for public/private sector urban professionals, and
- promote a cross-sectoral approach by ensuring integration of effort by APEC Fora (i.e. linking Work Plans).

INFRASTRUCTURE DEVELOPMENT IN APEC ECONOMIES

PUBLIC/PRIVATE SECTOR INFRASTRUCTURE PLANNING AND DELIVERY IN VICTORIA, AUSTRALIA

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PUBLIC/PRIVATE SECTOR INFRASTRUCTURE PLANNING AND DELIVERY IN VICTORIA, AUSTRALIA

Victoria

Victoria is one of Australia's eight States and Territories. It has a population of 4.6 million and covers an area of 230,000 sq. km. Its capital, Melbourne, has a population of 3.3 million.

Government Framework

In 1996 the Victorian State Government established the Department of Infrastructure (DoI) in recognition of the strategic capacity of infrastructure to attract new business, make the Victorian economy more competitive, and contribute to the quality of life of present and future generations. The Department of Infrastructure's responsibilities include infrastructure investment planning, building, heritage, local government, major projects, strategic and statutory planning, ports, public transport, roads and transport regulations. It is placing particular emphasis on:

- identifying the appropriate level and composition of new investment and maintenance expenditure, consistent with broad economic objectives and opportunities within an integrated Departmental capital works program;
- maximizing the economic benefits of existing infrastructure services and, where possible, do so by the transfer of functions to competitive private sector operations;
- strengthening and developing strategic land-use planning capabilities so that major infrastructure investment decisions take better account of context, and so that strategic plans are continuously informed by events and developments as they unfold; and
- continuing to reform the planning, building, transport and local government systems to achieve optimum regulation and maximum performance

The Department brought together land use, local government and transport functions which had previously been dispersed among several departments. It comprises corporate functions, such as strategic planning, budgeting and local government planning, and service delivery agencies such as the state road agency (VicRoads) and the public transport agency (Public Transport Corporation).

Organizational Arrangements

An organizational structure has been developed which is designed to match the objectives of DoI. This structure:

- provides key organizational capabilities in the strategic land-use and transport planning and infrastructure economics area;
- upgrades the focus on project management and infrastructure project opportunities within an appropriate financial and risk management framework;
- recognizes the important link between planning and local government, particularly in the achievement of planning reforms;
- provides a framework for statutory authorities to contribute expertise to projects and policy development with implications across the portfolio;
- provides, as appropriate, for the separation of policy and service delivery; and
- enhances client relations and the regional delivery of the Department's services

Attachment 'A' shows the organizational structure and functions.

Infrastructure Planning

A major objective of the Department is to coordinate specialized agencies so that an integrated approach to economic, social and environmental development is achieved within a "whole of government" framework. This approach is reflected in activities at all levels from strategic planning through to program development and service delivery.

Strategic Plans

A series of coordinated strategic plans are expected to provide high level frameworks within which works programs, local government planning and service delivery initiatives will be developed. Strategies rely on a range of implementation mechanisms to achieve their objectives; including infrastructure provision, transport system management, regulations, service delivery standards and land use planning policy.

The focus of these high level strategies will be on defining outcomes and performance standards required by the State, ensuring that planning and the regulatory environment facilitate development and that capital infrastructure investments support economic development objectives. Increasingly the private sector is becoming the preferred deliverer of programs, either directly through ownership of infrastructure or operation of services, or indirectly through construction or maintenance of infrastructure.

Transport Strategies

Transporting Melbourne (1996) is an integrated transport strategy for Melbourne which has incorporated a metropolitan land use strategy *Living Suburbs*. Actions in the strategy reflect the diversity of levers available to government and include infrastructure investments, service operation enhancements and structural/regulatory reform.

Linking Melbourne (1995) is a road network strategy for Melbourne which focuses on roads as an economic driver and supporter of metropolitan development. It provides a strategy for the development of major cross-town and circumferential roads and the better management of existing roads.

Transporting Victoria (anticipated 1997) will be an integrated strategy for the management and development of regional transport services across the State which support broad state-wide economic and social objectives. This strategy will have a policy focus to provide the framework within which private operators will provide passenger and freight services. It will also incorporate road network initiatives developed in the road network strategy *Linking Victoria*.

Linking Victoria (1996) is a road network strategy for regional Victoria. Features of the strategy include a performance-based road hierarchy and signing scheme, improved inter-regional access, improved intermodal freight facilities, and a targeted resource-constrained investment strategy.

Land Use

Living Suburbs (1995) provides a policy for the development of Melbourne into the 21st century. It reflects the importance of suburban Melbourne to the life of the city and provides a policy framework on matters such as liveability, economic growth, infrastructure and communications.

Victorian Regional Development Framework (anticipated 1997) is designed to provide a policy context for planning, and for infrastructure management and development in regional Victoria that will guide the planning of land use, the allocation of resources, and the development of local government plans.

Land Use/ Transport Strategies

Regional Development Strategies (anticipated 1998) will bring together the regional land use and transport frameworks and allow five regions across regional Victoria to develop integrated development strategies that meet distinctive regional needs while reflecting state directions.

Area Planning

Precinct and area planning has been enhanced through having the various infrastructure elements of government within the one department, by developing strong links with key interest groups, and involving private sector service delivery organizations where appropriate. Two examples are the Jolimont/Sports Precinct study in central Melbourne and the Scoresby Corridor Environmental Effects Study in the outer eastern suburbs of Melbourne.

Jolimont/Sports Precinct study involves the development of an integrated transport and precinct plan for the south east corridor to Melbourne's CAD. This area is subject to several major land use and transport initiatives: ranging from a new road link between the CBD and a private toll road currently under construction, relocation of railway facilities to improve rail operations, urban redevelopment, parkland development, and expansion of the world famous MCG sports precinct - all of which need to be coordinated to ensure the maximum benefits for the State are achieved and that the projects are delivered within a tight timeframe. The disparate projects have been brought together and an integrated solution which maximizes the benefits to the private developers, the community and government is being developed.

Scoresby EES involves a study of land use and transport options along a 34km circumferential corridor in Melbourne's outer suburbs. This study addresses broad multi-modal transport, land use development, and activity pattern issues which may result from the development of major transport infrastructure in the existing urban system.

Investment Procedures

The Department is developing an infrastructure outlook which will canvass requirements and options for capital investment in public infrastructure over a 10-15 year period. The key drivers of investment needs are seen as levels of future demand for different infrastructure types, infrastructure strategy directions, and availability of public and private sector funding.

The Department is implementing a process designed to formulate an integrated capital program across all infrastructure agencies to maximize the value of investment to Victoria's future prosperity. The key features of the process include:

- submissions by agencies and department divisions encompassing project priorities and evaluation in accordance with government-wide guidelines, and
- decisions by infrastructure Ministers on shortlisting of projects for evaluation, and on capital priorities and programs.

The Role of the Private Sector

In Victoria the private sector is playing a significant and increasing role in service delivery. The government-produced infrastructure investment guidelines (*Infrastructure Investment Policy for Victoria, 1994*) encourage private sector involvement through investment in both new and existing infrastructure and services. Examples to date have included sale of the State's electricity generation and supply system, management of part of the water supply system, development of private prisons to complement public prisons, and in the transport sector, development of a $1.7 billion toll road in Melbourne, intended privatization of the State's public transport services, maintenance and privatization of some port activities, and contract provision of road construction.

Melbourne City Link Project

Melbourne City Link is a key element of Melbourne's freeway system as it links previously disjointed cross-town and central city freeways. The project is the largest of its type in Australia. It will be designed, built and operated by a publicly listed company as a BOOT project with a projected 34 year concession period. At the end of the concession period the road will revert to State ownership.

The terms of the project and agreement are covered in a project specific Act of Parliament and supporting agreements. These specify the requirements for all parties. For example, road performance standards, the need for HOV lanes, and the maintenance regime are specified for the developer, while the government is required to ensure key access roads are maintained at an acceptable standard. Other infrastructure decisions within Melbourne take into account their impact on the financial viability of the project.

The State's financial exposure is limited to the provision of land. Project cost and revenue risks are carried by the developer. Tolls are set in the agreement, as is the process for determining toll increases over the life of the project. The concession deed includes a provision for the State to increase its share of the revenue if higher-than-estimated traffic demands are achieved.

Privatization of Public Transport Services

The majority of Melbourne's bus services have been provided by private operators for many years. These services were provided through cost plus contracts and payments were not related to patronage levels. A further round of privatization of public transport services and a new approach to operator contracts started in 1993. At this time 80% of the remaining government bus fleet was sold and the operators were required to enter performance-based contracts where financial returns were linked to patronage levels.

In April 1997 the government announced that all bus, tram, and rail operations still in government ownership would be privatised by the end of 1998. Service contracts have been developed for bus operations and will be developed for rail and tram. An overriding principle of the bus contracts is that they are performance-based and provide financial incentives for the private operators to improve services and increase their markets. The Community Service Obligation component of public transport is recognized and the government provides a cash contribution to cover loss-making services. Bus privatization in Melbourne will be completed by 1997.

The model for privatization -- the metropolitan rail and tram networks -- is not finalized but may include:

- the breaking-up of the single operating authority into a number of separate private train and tram organizations. This will allow benchmarking between operators to be undertaken as part of a service improvement program.
- the State setting fares and minimum performance standards, and retention of an integrated ticketing regime across all modes, and
- flexibility for the operators to change timetables to provide more reliable and faster services.

Ownership of rolling stock, track and other infrastructure in the Melbourne area is not yet decided. This could be leased to private operators or sold.

Victoria privatized two country rail services in 1993 and privatization of the remaining country rail services will be finalized over a similar period to the metropolitan network.

For the rural rail network, a track authority has been established to maintain the track asset and manage access to the system under an "open access" regime, which will allow private operators to provide freight services. A rail safety agency has been established to accredit operators.

Port Privatization

The government has used both corporatization and privatization strategies in Victoria's ports to improve productivity and reduce user costs. The mix of public and private sector responsibility has varied from port to port to reflect different needs and commercial circumstances.

Two ports, Portland and Geelong, have been sold to private operators. In both cases, all land-based assets have been sold, although underwater assets have been retained in public ownership. In the case of Portland the new owner is responsible for channel dredging, however channel dredging for Geelong remains the responsibility of a government-owned channel authority.

The management and operations of the capital city port of Melbourne, the largest general cargo port in Australia, have been split between three new agencies -- the Melbourne Port Corporation (MPC), the Victorian Channel Authority (VCA), and Melbourne Port Services (MPS). MPC and VCA remain in government ownership, with the former acting as a 'landlord' in the management of port land and the latter responsible for maintaining channels and shipping control. The government is in the process of negotiating the sale to the private sector of MPS which provides general services to ships, but not stevedoring services which are already provided through the private sector.

In a fourth case -- the Port of Hastings -- the government is pursuing the option of privatizing the management and operation of the port while retaining ownership of land-based and underwater assets already in public hands. Under this arrangement, the new private manager will be responsible for operating and maintaining the channels and other assets of the port, and will enjoy the benefits of any growth in port business.

Road Construction and Maintenance

Over the last decade VicRoads has progressively increased the amount of its road construction and maintenance delivered through competitive tendering. Currently, approximately 94% of construction activities and 54% of maintenance is contracted out. Victoria is moving toward all works, apart from some emergency works, being contracted out.

Conclusion

The Department of Infrastructure was established in Victoria to achieve land use and transport planning and service delivery which are integrated and results-oriented. The priority of the Department is to identify and respond to government and community objectives, setting investment priorities and minimum performance standards, and establishing regulatory frameworks within which a range of private and public sector delivery mechanisms can be used. Service delivery is increasingly becoming the responsibility of the private sector and this has been achieved through a range of privatization models on a case-by-case basis.

Attachment A

PORT DEVELOPMENT IN HONG KONG

PORT DEVELOPMENT IN HONG KONG

Introduction

The economic success of Hong Kong can be attributed to a number of factors, including an effective and efficient infrastructure system and dynamic private sector. Hong Kong is a free market economy in which the private sector is allowed maximum flexibility to operate. The government, on the other hand, provides a broad planning framework to encourage private sector initiatives and coordinates the development of necessary infrastructure.

Hong Kong's port is an important part of the territory's infrastructure. Apart from handling about 90% of Hong Kong's trade, it serves both as an entrepot for China and as a hub port for Asian and world trade. The port, with its full range of support services, generates about 20% of Hong Kong's GDP and provides employment for some 20% of her work force.

Port Sectors

The port of Hong Kong is the busiest container port in the world, handling 13.46 million 20-foot equivalent units (TEUs) in 1996. Table 1 summaries the throughput of the top 20 container ports in 1996.

The existing container terminals handled 8.69 million TEUs (65%) supplemented by mid-stream buoys/anchorages and river trade activities, each handling 3.04 (22.5%) and 1.68 (12.5%) million TEUs, respectively.

Container Terminal

- The majority of Hong Kong's port facilities are privately-owned. All container terminals are built and operated by private companies. There are four major container terminal operators in Hong Kong – Hongkong International Terminals (HIT), Modern Terminals Limited (MTL), Sealand Orient, and COSCO/HIT. Together they operate the eight container terminals comprising 19 berths at Kwai Chung. Container terminal 9 (CT9) is to be built by the private sector at Tsing Yi (opposite Kwai Chung).

- The provision of berth facilities at Kwai Chung container port and the planned developments for CT9 at Tsing Yi are shown in Figure 1.

Table 1

Top 20 Container Ports*

	1996		1996		
Ports	**Rank**	**TEUs**	**Rank**	**TEUs**	**% Change**
Hong Kong	1	13 460 343	1	12 549 746	7.3
Singapore	2	12 950 000	2	11 846 000	9.5
Kaohsiung	3	5 063 048	3	4 899 879	3.3
Rotterdam	4	5 007 049	4	4 786 897	4.6
Busan #	5	4 684 000	5	4 502 596	4.0
Hamburg	6	3 053 884	6	2 890 181	5.7
Long Beach	7	3 007 425	7	2 843 502	5.8
Los Angeles	8	2 682 803	8	2 555 204	5.0
Antwerp	9	2 620 000	9	2 329 135	12.5
Yokohama	10	2 400 000	10	2 756 811	–12.9
Tokyo	11	2 290 000	11	2 177 407	5.2
Keelung	12	2 275 000	12	2 169 893	4.8
Dubai	13	2 247 024	13	2 073 081	8.4
New York/New Jersey #	14	2 215 000	14	2 218 531	–0.2
Felixstowe	15	2 064 947	15	1 923 936	7.3
Kobe	16	2 056 753	24	1 457 119	41.2
Shanghai	17	1 970 000	19	1 526 500	29.0
manila	18	1 918 234	16	1 687 743	13.7
San Juan	19	1 600 000	17	1 593 000	0.4
Tanjung Priok #	20	1 595 505	23	1 465 019	8.9

Note *: ***The container ports are ranked according to the throughput in TEUs terms***

#: Estimate

Source Containerisation International March 1997 issue

Mid-stream Operation

- Mid-stream operators handle almost a quarter of the total container throughput. Hong Kong's mid-stream operation last year handled 3.04 million TEU's. This is equivalent to that of the world's sixth busiest container port (Table 1).
- Mid-stream operations involve the use of lighters for loading and discharge of cargo (bulk, break-bulk and containers) at private wharves and leased water-front sites, from/to ocean going vessels moored at buoys and anchorages located in the 'mid-stream' harbor areas.
- Although commonly viewed as a low-cost alternative to the terminals, mid-stream cargo handling has become essential and complementary to the efficient operation of the port. However, most mid-stream sites are granted on short-term tenancy and short-term waiver and are constrained by a small land area and insufficient waterfront quay, which limits operational efficiency due to the operator's reluctance to invest long-term.

River Trade Terminal

- The Pearl River Delta (PRD) forms a natural and extensive waterway within southern China between the sources of industrial production and Hong Kong's port. Container movement on the Pear River has risen dramatically over the last few years. The river trade cargo is carried in small coasters and barges and is handled at public cargo working areas and dedicated waterfront sites.
- River Trade Terminal (RTT) is designed as a cargo handling facility for the river trade and comprises a high proportion of containers from the PRD. The RTT is a new type of facility, which is also developed and operated by private enterprises. The first RTT is now being built in Tuen Mun. Dedicated feeder berths and barging facilities will be incorporated within the new Lantau Port to cater to the fast growing river trade traffic.

Port and Airport Development Strategy

The Port and Airport Development Strategy (PADS) Study was completed in December 1989. Its primary aim was to provide a longer-term development plan for the port (and airport) up to 2011 and beyond.

The government has relied on private enterprise in the development operations of its port. Reliance on private sector initiatives to provide key economic infrastructure and facilities will continue. Consequently, one of the main objectives of PADS is to ensure that the whole strategy can be split into packages which will be as attractive as possible to private developers.

Initial port development traditionally concentrated itself around the container terminals at Kwai Chung. However, new port facilities will progressively be developed at the Lantau Port and Western Harbor, making use of the key infrastructure provided for the airport. A number of new high capacity roads will be provided to meet the needs of the new airport, port and industrial developments.

The Port Development Board

The Port Development Board (PDB) was formed in April 1990 to advise the Governor, through the Secretary for Economic Services, on all aspects of port planning and development. This task involves assessing development needs in the light of changing demand, port capacity, productivity, performance and competition both locally and regionally.

The Board acts as a bridge between the government's strategic planners and the commercial operators of the port to ensure the port's continued success. It brings together the government and the private sector in planning and developing these facilities.

Port Cargo Forecasts

Accurate estimates of future port needs are essential for Hong Kong. Failure to provide adequate facilities on time would result in port congestion and economic losses, not only for Hong Kong but also for Southern China.

To ensure that port facilities are able to match forecast demand, the PDB produces Port Cargo Forecasts (PCF) every two years. The PCF considers the trends and key issues shaping the processes and changes at global, regional and local levels that have a significant bearing on Hong Kong. These include: -

- developments in Hong Kong;
- developments in China;
- the world economic outlook;
- competition from regional ports;
- containerisation trends;
- the future of transshipment traffic, and
- the likely impact of port charges on port traffic growth.

The latest PCF was carried out in 1995. The main findings were as follows:

(i) The overall freight movement of Hong Kong is expected to grow at 5.55% annually from 1994 to 2016, increasing from 157 million tonnes to 513 million tonnes in the period.

(ii) The share of ocean cargo is expected to decline over time due to the trade diversion of cargo emanating from central and northern China. By 2016, 61% of the cargo will be carried by ocean-going vessels and 27% by river-trading vessels, compared with 715% and 19%, respectively, in 1994 (Table 2).

Table 2

Modal Distribution in 1994 and 2016

Modes	1994	2016
Ocean	71%	61%
River	19%	27%
Road	8%	5%
Rail	1%	6%
Air	1%	1%
Total	100%	100%

(iii) Overall port traffic is projected to increase at 5.4% annually from 1994 to 2016. Total port cargo tonnage will increase from 141 million tonnes to 453 million during the period. By 2016, 69% of the port cargo will be carried by ocean-going vessels and the remainder by river vessels, compared with 79% and 21% in 1994.

(iv) Containerised cargo is expected to increase its share form 55% in 1994 to about 60% in 2016. Container throughput is projected to increase faster than the overall port throughput. Hong Kong's total container throughput will increase from 11.1 million TEUs in 1994 to 39.2 million TEUs in 2016, presenting a projected average annual growth rate of 5.9%.

Port Development Strategy Review

Due to the higher overall growth rate of port cargo throughput and greater differences in growth rates in the various sector of the port operations in the past few years, the recommended strategy initially put forward by PADS for port development is regularly reviewed under the Port Development Strategy Review (PDSR).

A third review (3rd PDSR) has now begun to update previous review forecasts using the findings of the PCF 1995 as the starting point. The study process is indicated in Figure 2 and the main tasks are summarised below:

(i) update the productivity levels in cargo handling of the various port facilities;

(ii) update the port-mix assumptions for both ocean and river cargo;

(iii) review the roles of mid-stream and public cargo working area operations;

(iv) review cross-border road cargo projections and off-port container back-up uses;

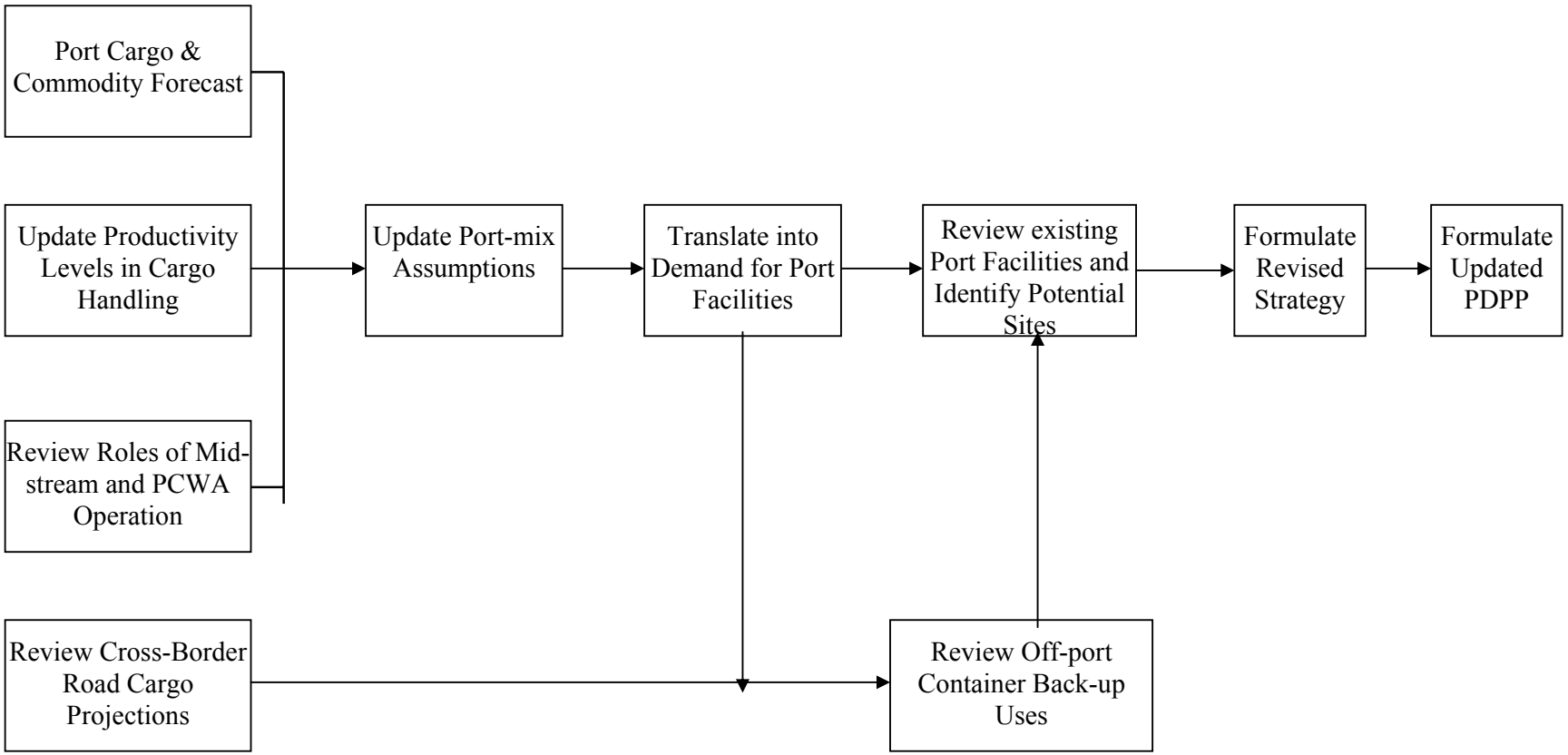
(v) translate findings into demand for port facilities for the benchmark years 1998, 2001, 2006, 2011 and 2016;

(vi) review existing port facilities and identify potential sites, and

(vii) formulate a revised strategy and updated port development plan and program.

Figure 2

THE STUDY OF THE DEVELOPMENT STRATEGY THIRD REVIEW



Major port facilities to be developed comprise the following:

Container Terminal 9

- Container Terminal 9 (CT9) will provide a further 4 berths at Tsing Yi with two feeder berths. Subject to agreement between the government and the developers, construction of the terminal is expected to start in late 1997. Construction of the duplicate Tsing Yi South Bridge, an essential link between Kwai Chung and Tsing Yi, is progressing satisfactorily and is scheduled for completion in February 1999.

Lantau Port

- The Lantau port will consist of 17 to 24 berths (depending on demand) built on a series of reclamations. Engineering designs for CT10 and 11 have been completed. Land sale tender documents have been finalized, waiting for decision to proceed with the development of the terminals. The latest container growth trend suggests that the first berth of CT10 would be required by April 2003.

Mid stream Sites

- Some long-term mid-streams sites have been planned. A 6.7-ha site at the Stonecutters Island is scheduled to be commissioned in October 1997. Also in progress is a feasibility study on establishing a mid-stream site at Tseung Kwan O at the eastern approach to Hong Kong, capable of handling 1.05 million TEUs per year. This facility is expected to be in operation by 2004.

River Trade Terminals

- The development right for the first River Trade Terminal (RTT) located in Teun Mun was awarded in March 1996.
- The 65-hectare terminal will have 60 berths with a 3,000 metres quay front. The annual handling capacity is estimated to be 10 million tonnes including 1.3 million TEUs of containerised cargo and 900,000 tonnes of breakbulk cargo.
- The RTT will be an efficient, flexible, and reliable common-user terminal. It is designed to cope with the ever-growing trade traffic. Construction commenced in November 1996. The first operating area is scheduled for completion in the fourth quarter of 1999 and completion of the entire terminal by late 1999.
- The RTT will provide full-range and comprehensive services which include container and breakbulk handling operation, storage, transshipment, lighter shuttle services, container freight station, warehousing operations, container maintenance and repair services.

Port Development Plan and Programe

With rapid changes in port developments in the region, the Port Cargo Forecasts 1997/98 Study commenced in April 1997. Its findings will be incorporated into the 3rd PDSR to update the strategy and, most importantly, revise the port development plan and program. Table 3 outlines the implementation program of the port facilities as established in the 2nd PDSR.

The continued growth in throughput in Hong Kong's port underlines the urgent need for additional capacity to become available as soon as possible. To assist this, a Port Projects Coordination Office (PortCO) was set up in March 1995 to coordinate the timely development of CT10 and 11, the first two terminals at Lantau port, and to prepare a program for the planning and implementation of other port facilities identified in PADS, based upon subsequent PDS Reviews and other related strategic studies.

Conclusion

In the development of port infrastructure, the government has maintained two functions. Firstly, it provides guidance for development and investment through the formulation of a port development strategy and port development plan and program. This strategy is reviewed and updated regularly to take account of changing circumstances such as the increasing competition from ports in the region, rate of industrialization in South China and the trend of containerization. This will provide a basis for the formulation of a program for the port projects. Secondly, the government provides and coordinates the necessary infrastructure (e.g. building of roads, dredging of water channels, and provision of sufficient land for container back-up facilities) in a timely manner. These projects are carried out either as entrusted projects by developers or as government projects through the public works program. Views are sought from the port operators and related trades such as shipping lines, cargo consolidators, and freight transport operators in the various studies carried out as part of the formulation of a port development strategy. The private sector is given maximum flexibility to build and operate the port facilities. This type of public-private partnership in the planning and development of major port infrastructure has made Hong Kong one of the most efficient ports in the world.

THE KSO SCENARIO IN NDONESIA

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THE KSO SCENARIO: AN INNOVATIVE PUBLIC-PRIVATE RELATIONSHIP IN INDONESIA'S TELECOMMUNICATIONS SECTOR

Introduction

With an area of around 1.9 million square kilometers and consisting of 17,000 islands stretching over 5,000 kilometers, Indonesia is not an economy whose physical conditions are conducive to good telecommunications. Yet recognizing the importance of a modern telecommunications infrastructure in the economic and social development of Indonesia, the Government of the Republic of Indonesia decided in 1994 to undertake bold initiatives to substantially increase the availability and operating efficiency of telecommunications services throughout Indonesia.

In the framework of these initiatives, the government's plans called for the installation of at least five million new telephone access connections or ALU (Access Line Units) during the sixth five-year planning period (1994-1999). These plans called for the Indonesian national telephone company, PT. TELEKOMUNIKASI INDONESIA, or in short TELKOM, to construct three million ALU. In addition, the government decided that two million ALU must be constructed and operated by private sector investors. Those investors were Indonesian joint venture companies, each involving a separate foreign telecommunications operator. They were selected through open bidding to enter into cooperative joint operating agreements with TELKOM in certain territories of Indonesia, known as "Kerja Sama Operasi" or KSOs. Those KSO investors were selected on the basis of their expertise and financial and other resources required for the planning, design, construction, financing and operation of major public telecommunications infrastructure systems.

The purpose of the KSO initiatives was to enhance the role of the private domestic sector in the construction and operation of telecommunication facilities with a view to increasing services to the public. The objectives of the KSO were to accelerate the construction of telecommunication facilities and to make TELKOM a world class operator by providing technology transfer, knowledge and skills to TELKOM's employees.

This paper provides an overview of how the KSO agreements have been structured and describes in detail two of those five KSO projects -- one in Sumatra and the other in Central Java.

The KSO Agreements

The KSO agreements are a form of contractual joint venture agreement under which the KSO investors, through the KSO unit, are responsible for the operation of the local network of the KSO division. The Indonesian government believes that dividing the country into geographic regions and contracting with separate KSO investors to develop and operate each KSO division is the most advantageous means of carrying out the development and operation of those divisions. This is because of the magnitude of the planned line development, the difficulty of the terrain, the geography of the country, and the scope of the required financial, managerial and other resources. Furthermore, having a different major international communications operator involved in each KSO division is preferable to having one for all five KSO divisions because it allows TELKOM to benefit from potentially different managerial, operational and technical strengths of several operators, as opposed to just one. In addition, the KSO structure is both flexible and effective in achieving its objectives for development and improvement of the network and in meeting the government's goals in the current Five-Year plan (Repelita VI), without reducing the government's equity in TELKOM.

In June 1995 following an international tender, the names of the successful bidders to develop and operate TELKOM's basic fixed telecommunications facilities and services in five of TELKOM's seven regional divisions were announced. KSO agreements were executed on 20 October 1995 between TELKOM and each investor. The material terms of each KSO agreement are essentially the same, except for the financial terms described below. Each KSO unit is to be treated as a division of TELKOM for and on behalf of TELKOM.

Each KSO unit will manage, operate, repair and maintain its KSO division's assets in the name of TELKOM and for and on behalf of TELKOM, commencing January 1, 1996 for the term of 15 years, subject to earlier termination as described below. The KSO investors will undertake the planning, design, engineering, financing, and construction of a previously mentioned minimum of two million ALU in the aggregate. TELKOM will receive three principal types of payments from each KSO unit or KSO investor during the term of the KSO. Upon expiration of the KSO period, all the lines constructed by the KSO investors will be transferred to TELKOM for a nominal payment.

Financial Terms

Each KSO unit will be (i) operated as a separate entity for accounting purposes, (ii) responsible for certain payments to TELKOM, (iii) entitled to revenues generated from all lines in service that terminate within the geographical KSO division on a sender-keep-all basis, and (iv) responsible for all costs associated with operating the KSO unit.

TELKOM is entitled to receive (i) from the KSO investor a one-time initial investor payment, (ii) from the KSO unit minimum TELKOM revenues and (iii) a specified percentage or share of certain of the KSO unit's revenues after deduction of certain allowable operating expenses and minimum TELKOM revenues but before depreciation and financing charges.

Initial investor payment: Each KSO investor is required to pay to TELKOM within 30 days from the execution of the KSO agreement an agreed one-time lump sum payment.

Minimum TELKOM revenues (MTR): As the KSO unit will assume operational and financial control of TELKOM's existing facilities, including all lines in service, TELKOM will receive for the term of the KSO the annual MTR, payable in monthly instalments. The amount of the MTR payments in each region will compensate TELKOM for the financial benefits it would have received from its existing installation in the region if a KSO had not been entered into. The MTR payment is to be paid to TELKOM by the KSO unit. This obligation is absolute and not subject to any right of reimbursement or off-set. The KSO investor is to provide to TELKOM at all times during the KSO period a bank guarantee or other security with respect to such obligation.

Structure and Operation

The KSO investor is licensed by the government to operate fixed line and fixed wireless services in the KSO Division under the term of exclusivity granted to TELKOM in the name of TELKOM and for and on behalf of TELKOM. The KSO investors will be held accountable for the achievement of specific operational performance targets during the KSO period relating to the expansion and quality of services. If such targets are not met in any calendar quarter following the three-year construction period, the KSO investor's revenue share shall be reduced and TELKOM's share shall be increased by 0.2% for each month of the following calendar quarter for each 1.0% the KSO unit's performance is below target, and by 0.4% during the last three years of the KSO period.

The foreign telecommunications operator of each KSO investor will guarantee that the KSO will meet its performance targets and, in the event of such failure, has agreed to perform or cause to be performed, such Guaranteed Performance Obligations and reimburse TELKOM for any amount incurred by TELKOM because of such failure. Upon request, TELKOM may be required to provide sufficient capacity in its backbone and trunk communications network to permit the KSO division to achieve its performance targets.

The KSO investors, at their sole expense, will provide or arrange for the provision of all technology and related intellectual property rights necessary to develop TELKOM's new and existing network. Where it is not possible to obtain such technology or intellectual property rights in the name of TELKOM, the KSO investors will ensure that all such rights may be assigned to TELKOM following termination of the KSO period without charge, penalty or any diminution in rights.

Employees and Management

Each KSO unit is to be staffed by existing TELKOM employees in each KSO division, supplemented by additional staff hired by the KSO investors and management and expert personnel to be put in place by the KSO investors. The KSO division shall, to the extent reasonably possible, make maximum use in its operations of available Indonesian human and material resources, goods and services, including, but not limited to appropriate resources and services provided by certain business support services of TELKOM.

Each KSO division is to be headed by a General Manager appointed by the KSO investors, with the consent of TELKOM. The KSO investors will use their best efforts to ensure that the General Manager is an Indonesian national. The General Manager shall not be an employee of TELKOM for so long as he is General Manager.

A five-member KSO committee, consisting of chairman appointed by the Minister (of Tourism, Posts and Telecommunications), two members appointed by the KSO investors and two members appointed by TELKOM, is to have the responsibility to set management and operational plans, fix the salary and benefits payable to the General Manager, and to review audit reports and transfers of TELKOM employees. It will also be the forum for consultation and resolution of disputes between the investor and TELKOM regarding the KSO division. The KSO committee is to meet at least quarterly.

TELKOM is to appoint and employ a KSO chairman to act as the non-executive chairman of each KSO division to supervise the implementation of the KSO agreements, the performance of the KSO units and the completion of TELKOM's existing projects. TELKOM will be responsible for the monitoring and supervision of overall KSO operations to ensure that the objectives of the KSO are achieved.

The KSO investor will have no rights or interest in existing TELKOM installations but must take such action as necessary to protect TELKOM's rights, title and interest in existing installations. During the KSO period, all rights, title and interest in the new installation are to be the property of the KSO investors who will not be permitted to sell, transfer, pledge, assign or otherwise encumber all or any part of the new installations without the consent of the government. No security interest will be granted over KSO revenues and accounts without the prior written consent of the Minister. No accounts receivable of the KSO division will be written off except in accordance with Indonesian and internationally generally accepted accounting principles, and with the written approval of TELKOM.

TELKOM's Purchase Option

Under the KSO agreements, at any time after 31 December 2005, TELKOM is to have an option to purchase the new installation by paying to the KSO investors an amount equal to the net present value of the KSO investors' projected share of distributable KSO revenues attributable to the minimum new installation over the balance of the applicable KSO period. If the KSO investors have constructed more than the minimum new installations, then that amount must be increased with the net present value of the KSO investors' projected share of distributable KSO revenues attributable to the installation in excess over the balance of the applicable pay-back period.

Transfer of Assets at the end of the KSO period

The ownership of the new installations are to be automatically transferred to TELKOM for nominal value at the end of the KSO period, at which time TELKOM will take over all aspects of the operations. As previously mentioned, TELKOM will also reimburse the KSO investor for installations in excess of the minimum new installations which are not fully paid for out of KSO unit revenues by the end of the KSO period by paying to the KSO investors an amount equal to the net present value of the KSO investors' projected share of distributable KSO revenues attributable to any installation in excess of the balance of the applicable pay-back period.

The KSO Project in Sumatra

The island of Sumatra has a land area of 475,481 square kilometers — about 24 % of the total area of Indonesia-and has 38 million people living there. The following chart details the Sumatra division's KSO.

ITEM	DESCRIPTION
KSO investor.....	Pramindo Ikat
Participants in the KSO	
Foreign telecommunication operator.....	France Cables et Radio S.A. (35 %)
Indonesian and other participants.....	PT Astratel Nusantara (59.5 %)
Access line unit installed	
Existing installations on 31.12.95	718,779 ALU
Minimum new installation to be Installed by the KSO investor by 31.3.99 …….	516,487 ALU
Initial Investor Payment to TELKOM	USD 35,000,000
Annual Minimum TELKOM Revenue Payment.....	Rp. 460 billion in 1996 and 1997; Rp. 469.2 billion in 1998-2010; the payment is equal to MTR of previous year multiplied by 1.02. Note: in June 1995, 1 USD = Rp. 2,246
TELKOM's Revenue Share.....	30 %

The KSO Project in Central Java

Central Java has a land area of 37,375 square kilometers. It covers about 1.95 % of the total area of Indonesia and has 31 million inhabitants. The following chart details the Central Java division's KSO.

ITEM	DESCRIPTION
KSO investor.....	Mitra Global Telekomunikasi Indonesia
Participation in the KSO	
Foreign telecommunication operator.....	Telstra Globel Ltd. (20 %) Nippon Telephone & Telegraph Corporation (15 %)
Indonesian and other participants.....	PT Indosat (30 %) PT Widya Duta Informindo (15 %) PT Krida Salindo Sentosa (10 %) Others (10 %)
Access line unit installed	
Existing installation 31.12.95.....	377,426 ALU
Minimum new installation to be installed by the KSO by 31.3.99.....	400,000 ALU
Initial Investor Payment to TELKOM.....	USD 10,000,000
Annual Minimum TELKOM Revenue Payment.....	Rp. 300 billion per year Note: in June 1995, 1 USD = Rp. 2,246
TELKOM's Revenue Share.....	30 %

NUSANTARA – 21
INDONESIA'S CONCEPT IN ENTERING THE INFORMATION AGE

Prepared by

Ministry of Tourism, Post and Telecommunications,
Indonesia

NUSANTARA - 21
INDONESIA'S CONCEPT IN ENTERING THE INFORMATION AGE

Background

NUSANTARA-21 is an information network which the Indonesian government envisioned to enhance the prosperity of the whole nation by developing a highly sophisticated and extensive telecommunications and information infrastructure. The concept was initially linked with the development in 1976 of Indonesia's PALAPA communications satellite, which has proved to be strategically important and effective in the nation's overall progress.

NUSANTARA-21 technology is varied and capable of supporting the rapid development of telecommunications and information technology. Entering the 21st century, Indonesia will possess and be able to utilize an information infrastructure that will facilitate the creation, management, distribution and consumption of information which all sectors of the community need.

As an important part of the ASEAN community and Asia-Pacific economy, Indonesia's commitment to NUSANTARA-21 will play an influential role in the development and growth of the ASEAN and APEC regions. The system will be an important factor in regional integration and the integration of the other economies in ASEAN and APEC into the global information infrastructure. All parties -- the government, the private sector, and the general public -- have an important role to play in successfully implementing and developing NUSANTARA-21.

Target of Nusantara-21

The goal of NUSANTARA-21 is to foster prosperity among all sectors of Indonesian society by putting in place a telecommunications and information infrastructure capable of managing and disseminating global information to the Indonesian community. The availability and use of such information will increase national economic competitiveness.

Macro Conception of Nusantara-21

In its early stages, NUSANTARA-21 will connect the 27 provincial capitals to established regional and global information networks. Priority will be given to developing the role of the Indonesian economy in regional and global trade, as well as the role of Indonesia among non-bloc countries.

In subsequent stages, the development of NUSANTARA-21 will progress hand-in-hand with development in the regions and cities in Indonesia. Technology must be able to provide infinite bandwidth, as well as high transmission reliability. The various existing growth triangles in Indonesia must be observed continuously so that the system can be implemented in those areas in a timely and effective manner that encourages growth. Development of trade and industry in smaller geographic and demographic areas is also an aim of the government in developing NUSANTARA-21.

NUSANTARA-21 will be implemented in various stages, each of which contains measured milestones.

NUSANTARA-21 is not intended to be merely a strategic initiative limited to hardware infrastructure only, but also a project in which both the government and private sector play key roles. In developing Indonesia's Eastern Zone (KTI), distinct weight is given to NUSANTARA-21's role in assisting the development process as well as developing the physical infrastructure. NUSANTARA-21 will be particularly valuable in the development of the thirteen Integrated Economic Development areas identified by the Development Council of KTI. Education, including the teaching of health services, for example, will be part of NUSANTARA-21's role in the Eastern Zone of Indonesia.

The stages and milestones in NUSANTARA-21 will therefore contain two comprehensive elements reflecting its dual role:

1. Development of the physical infrastructure: archipelagic super-lane, multimedia cities, Nusantara Multimedia Community Access Centers.

2. NUSANTARA-21 in national development:

    a) Government Sector: operations of government, education, health services, research, culture

    b) Private Sector: banking, mining, manufacturing, tourism, general trading and retail

    c) Development of local industry

Project Development

To translate the vision into action, projects within the framework of NUSANTARA-21 have been developed. The MTPT (Ministry of Tourism, Posts and Telecommunications) has been assigned the role of co-ordinating projects for which the World Bank has committed to lend its support.

The long-term overall objective of those projects is to develop Indonesia's information and communications infrastructure, which then can be sustained with the private sector taking the lead role after initial government investment. The immediate and more specific objectives are to:

a) Develop an appropriate legal and regulatory framework to create conditions for growth in the information technology and communications services sectors, and foster development of the information infrastructure in Indonesia beyond this project;

b) Extend and intensify communications and information networks to under-served regions to facilitate economic growth and regional development ;

c) Strengthen institutional capacity in the relevant agencies, namely MTPT, BPPT and BAPPENAS, to manage efficiently the new information networks and undertake further development. (To spur broader and more rapid development of the networks, the project promotes private sector partnerships to provide and manage information networks and systems.)

d) Promote private participation in the sector through a program which alleviates bottlenecks, while encouraging growth and new entrants in the information technology and related sectors.

Project Coordination

The National Steering Committee for Information Technology and Competitiveness (N21SC) set up in conjunction with MTPT and the World Bank is the co-ordinating body for this project as well as the implementation of NUSANTARA-21. The committee is chaired by the Secretary General of MTPT and comprises representatives of BAPPENAS, MTPT, BPPT, and private sector firms in the business of telecommunications and information technology. The responsibilities of the N21SC are: (a) designing, planning and supervising implementation of studies and workshops; (b) disseminating to the public and shareholders the results and findings of these studies, workshops and related debates, and (c) making policy recommendations and submitting them to MTPT in the form of proposals for strengthening the legal and regulatory framework to support the development of NUSANTARA-21.

Final Remark

Even though the orientation of NUSANTARA-21 is national, Indonesia is fully aware that interconnection and interoperability of national information infrastructures are essential elements needed to establish an end-to-end seamless global information infrastructure. To this end, Indonesia is an active participant in the activities of the APEC Telecommunications Working Group that promotes the realisation of the APII (Asia Pacific Information Infrastructure).

OUTLINE OF INFRASTRUCTURE DEVELOPMENT IN KOREA

Prepared by

Ministry of Construction and Transportation
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OUTLINE OF INFRASTRUCTURE DEVELOPMENT IN KOREA

Introduction

Historical Perspective of Infrastructure Development

Korea had laid the foundation for industrialization in the 1960s. Infrastructure was provided to support manufacturing activities. Policy emphasis was placed on mass transportation systems such as railroads and major arterial roads. Industrial estates along the Seoul-Pusan corridor and ports in the region were also developed.

The First 10-Year National Physical Plan was put into effect in 1972 to coordinate increasing physical development. During the 1970s, a comprehensive land, sea and air transportation system was completed. Large-scale industrial complexes, multi purpose dams, and energy infrastructure were also developed.

In the 1980s, to strengthen the economic base, planners shifted their policy emphasis from growth to stability. The second 10-year National Physical Plan was launched in 1982 to mitigate spatial concentration and promote balanced regional growth. The inter- and intra-urban transportation network was expanded and maintenance and repair of the existing infrastructure was increased.

In the 1980s, infrastructural bottlenecks in roads, port facilities, etc. became troublesome issues in Korea. With the weakening competitive edge of Korean industry in the international market, we needed to enhance and upgrade the existing infrastructure in a short period of time.

Objective of the Paper

Between now and 2001, Korea plans to spend a massive amount -- around 110 billion dollars -- on its roads, underground and aboveground railroads, seaports and airports. The Third National Physical Plan (1992 – 2001) presents the details of this ambitious investment plan.

The government's new focus on upgrading the national infrastructure could not have come at a better time. However, the real test lies in the ability to finance such investments. The primary source of infrastructure financing will be taxes and user charges. Private funding will also be required to meet the costs.

Recently in Korea, several laws were enacted to encourage private participation in infrastructure development. The new policy direction of deregulation and decentralization has opened doors to private sector flexibility and efficiency.

The objective of this paper is to present Korea's infrastructure development plan, including a strategy to attract private sector participation.

Infrastructure Development Programs and Projects

Highways

Trends

Severe traffic congestion continues to be a critical problem due to limited road capacity.

Table 1 Road Capacity and the Trend of Car Ownership

Items	1986	1991	1994	Annual Increase
Length (km)	53,653	58,088	73,833	1.9%
Capacity of national road and expressway	(18,313)	(22,132)	(25,747)	(3.2%)
Car Ownership (thousand)	1,309	4,248	7,409	25.1%

Data source: Ministry of Construction and Transportation, "Transportation Yearbook"' 1994

Investment in road transportation is insufficient and management of the transportation systems is inefficient.

Future transportation demand will rapidly increase.

- Both international and domestic passengers and freight are rapidly increasing due to economic development and increases in car ownership

  (1) Car ownership will increase 3.2 times, passengers 4.2 times, and freight 3.2 times between 1994 and 2011.

  (2) High traffic volume increases in the west and east coast transportation corridors is expected due to the increase in vacationers and development along the coasts.

  (3) Continuous increases in the volume of international passengers and freight is expected due to the increase in international trade.

- Strong international competition to occupy the transportation hub position as international passengers and freight continue to increase.

With the increase in income levels, there is an increasing demand for high quality transportation services, which provide easy accessibility, safety and comfort.

Major Policy Directions

Establish half-day transportation systems around the country.

- Construct major arterial corridors around the country to facilitate high speed travel and easy access.
- Enhance inter-modal transportation systems to maximize the effect of investment.

Develop strategic transportation points for the expansion of international trade and Korea's reunification.

- Develop an international airport and seaport in order to play a major role in Northeast Asia.
- Prepare to build comprehensive transportation networks between South and North Korea after reunification.

Establish inter-regional high speed and large capacity transportation systems to strengthen the self-supporting economy.

- Build comprehensive and multi-modal transportation systems in order to increase the capacity of freight transportation and support regional economies.
- Establish urban public transportation systems in the metropolitan areas, centering around major railroad and subway systems.

Improve the efficiency of transportation management and safety by introducing the Intelligent Transport System (ITS).

Strengthen R&D (research and development) to decrease air pollution and traffic accidents.

Major Projects

Projects for establishing national arterial and local networks

- Build a grid pattern national expressway network allowing access to the major arterial highway within 30 minutes from any point.
  - Expand the expressways from 1,650 km in 1996 to 5,300 km in 2011.
  - Construct seven north-south corridors and nine east-west corridors by 2020, with a total 6,160 km of expressway.

- Expansion of national highways: 12,050 km in 1996 → 16,000 km in 2001 → 18,000 km in 2011.
  - Expand and construct 700-800 km every year.
  - Give priority to eliminating bottlenecks.
  - Construct detours in local cities to reduce urban traffic congestion and inter-regional mobility.

Construction of metropolitan area transportation networks

- Construct detours and urban circular expressways in metropolitan areas such as Seoul, Pusan, Daegu, Kwangju, and Daejon to disperse traffic.
- Expand metropolitan railway networks to increase the modal share of urban railways.

Enhancement of efficiency and safety in traffic operations

- Introduce the Intelligent Transport System (ITS) project to enhance efficiency in transportation facility management, safety and cost-saving for freight transportation
- Strengthen highway design standards for safety
- Introduce tax incentives for encouraging the development of environmental technology such as low-emission vehicles.

Railroads

Trends

Share of new investment in railway facilities has been decreasing.

- Investment in railways has decreased since the 1970s.
- In the 1980s, railway investment was focused on increasing the capacity of existing facilities, such as double tracking and electrification, rather than on constructing new routes.

Old railway facilities have limited capacity, limited running speed, and declining safety.

- Double tracks and electrification are 28.5% and 17.9%, respectively.
- Maximum train speed (by Samauel train) is only 150kph. Railway density is less than half the average in developed countries.

Major Policy Directions

Construction of Basic Railway Networks

- Construction of high-speed railways: high speed railways will be constructed for the high transport demand corridors such as Seoul-Pusan, Daejon-Mockpo, etc.
- Construction plans are to be coordinated with development plans in other sectors, such as new industry complexes and leisure resort developments.
- Improvement and expansion of feeder railways: feeder railways around high-speed rail stations will be improved and expanded to enhance accessibility from local areas.
- Expansion of Industry Railways: railways for new towns and new industrial complexes will be constructed. Improvements include reshaping, double tracking, electrification, etc.

Construction of inter-city electrified railway networks, which link subways and railways will relieve traffic congestion in metropolitan areas.

Construction of connecting rail networks between South and North Korea will increase trade and help to realize the vision of reunification of Korea.

Priority in railway projects will be assigned based on demand size and connection with existing railways.

Major Railway Projects

Inter-regional high speed railways

- Seoul-Pusan (Kyungbu) High-Speed Rail projects: Seoul-Taejon line will be completed by 1999, and Taejon-Pusan line by 2001.
- Seoul-Mockpo (Honam) High Speed Rail: planned to meet increasing transport demand and the need for balanced economic development between the regions.
- Seoul-Kangnung (Dongsuh) High Speed Rails: will be constructed by private capital.

Construction of Electrified Railway Networks in Seoul metropolitan area.

- LRT's for Hanam, Yongin and Uijongbu are planned, and a subway system for Inchon City is under construction.
- Railway between Seoul and Inchon International Airport is planned.

Seaports

Trends and Perspective

Total seaport freight has increased rapidly from about 131 million tons in 1980 to 663 million tons in 1995.

The volume of container cargo increased by seven times during 1980-1995, rising from 690 thousand TEU's in 1980 to 4,920 thousand TEU's in 1995. Transfer container cargo especially has increased by a remarkable 38% each year during 1982-1995: 13 thousand TEU's in 1982, compared to 860 thousand TEU's in 1995.

Demand for container transport will increase continuously as trade increases.

Current development plans for container facilities will not meet the expected increase of demand for container transport.

Table 2 Prospects for Container freight

Unit: thousand TEUs

	1994	2001	2011	Annual Rate (%)	
				94 –2001	2001 – 2011
Import & Export	3,441	544	1,046	13.7	12.8
Transfer	0	35	151	35.8	41.6
Coastal	0	0	15	-	21.3
Total	693	1,294	2,544	13.9	14.1

Source: Korea Maritime and Port Authority

Major Policy Directions

Develop two large container ports, presumably Pusan (Gaduckdo) and Kwangyang

Develop strategic ports by region to support national economic development

Specialized port functions

- Promote the maximum utility of port facilities by specializing the port functions

Re-activate coastal transport

- Alleviate the burden of land transport by promoting coastal transport
- Promote coastal transport of heavy freight such as cement, coal, sand, etc.

Create integrated seaports

- Construct the seaport as an integrated-freight-mobilization base
- Construct the new port system for internationalization and for comfort and familial living spaces

Major Projects

Develop two large container ports, Pusan and Kwangyang

- Phase IV port development in Pusan, which can handle 1200 thousand TEU's annually by 1997
- Gaduckdo port development in Pusan, which can handle freight of 4,600 thousand TEU annually by 2011
- Kwangyang, which can handle 2.4 million TEU by 2001, 4.8 Million TEU by 2011

Regional Strategic Ports for the trade with the North and around the Yellow Sea

- Kunjang, Asan, Inchon, Tonghae, New Mankum, New Poryung, Pohang, Mockpo, Ulsan, etc.

Airports

Trends

Increasing demand for air traffic

- Air transport demand had increased at an average annual rate of 10% for domestic and international passengers and freight from 1989 to 1994. It is expected to continue increasing until 2011.
- After 2000, regional air traffic for small and medium-sized aircraft and helicopters is expected to increase rapidly.
- In international air traffic, the demand will increase at an annual rate of 8%.

Table 3 Prospects for International Air Transport Demand

	1997	2001	2011	Annul Rate (%)
Passenger (1,000 person)	19,024	25,799	48,141	8.2%
Freight (1,000 ton)	1,522	2,097	4,170	8.6%

Source: Korea Transport Institute

Major policy directions

Inchon New International Airport as a hub airport in East Asia

- Complete the construction of Inchon New International Airport by early 2000
- Construct the feeder service system between Inchon New International Airport and cities in neighboring countries such as Japan and China

Table 4 Construction Plan for Inchon International Airport

	Phase I	**Phase II**
Area	4.2 million pyung	14.4 million pyung
Runways	2	4
Passengers	27 million	100 million
Freight	1.7 million tons	7.5 million tons
Access Roads	Exclusive highways	Exclusive highways and high speed railways

Source: Korea Ministry of Construction and Transportation

Construct or expand international airports in regional cities

Enlargement of regional airport facilities

- Construction of airports for light aircraft on islands such as Ulrung
- Expansion of public airport facilities on military airports

Major Projects

Inchon New International Airport

Regional Airport Projects

- Expansion of Kimhae International Airport
- Develop a new international airport in Pusan area after 2010
- Develop Muan New International Airport in Honan area
- Expand Cheju International Airport and develop a new international airport
- Construct Yangyang New Airport.

Telecommunications

Trends

The development of fundamental telecommunications technology is comparable to the standards of developed countries, while the development of advanced telecommunications technology is relatively poor.

In order to expand the use of the existing infrastructure and improve the efficiency of management systems, information telecommunications systems will become increasingly automated.

Major Policy Directions

Prepare for the trend toward real-time information and globalization through the establishment of a high-speed information telecommunication network.

Reduce the interregional disparity of information utilization by constructing the information superhighway and the nationwide telecommunications network.

Major Projects

Projects for building fundamental telecommunication networks and facilities

- Construct inter-urban high-speed telecommunications networks (622Mbps - 2.5Gbps) by 1997, connecting the five major cities of Seoul, Kwangju, Daegu, Pusan and Daejon
- Construct networks (622Mbps) between the five major cities and other growth-pole cities such as Inchon, Suwon, Chunchon, Chungju, Jeonju, Changwon, Cheju
- Construct networks (155Mbps - 622Mbps) between growth-pole cities and 68 medium and small cities

- Improve high level information networks (2.5Gbps - several ten Gbps) connecting five metropolitan areas, and networks (2.5 Gbps) connecting five metropolitan areas and growth-pole cities by 2001
- Develop various information services which use the high-speed information telecommunications network

Expansion of fundamental telecommunications services and improvement of information telecommunications networks are necessary.

- Telephone expansion projects: 37.8/100 persons in 1993 → 56/100 persons in 2001
- Improving the use of the digital system in exchange facility: 59% in 1993 → 100% in 2001
- Expansion of international telecommunications facilities
- Expansion of portable telecommunications facilities
- Execution of continuous projects using satellite telecommunications broadcasts

Table 5 Projects for Building High Speed Information Telecommunications Network

Goals by Stage	Duration	Main Contents
Infrastructure construction (I)	1996 – 2000	• Building high-level network • Establishing fundamental service for portable telecommunications • Supplying high-level service using the satellite • Activation and improvement of internet and PC telecommunications
Expanding the use of information (II)	2001 – 2005	• Establishing multi-media in households • Activation of tele-media examination system and tele-education system using multi-media • Activation of VOD, home banking service
Improving the use of information (III)	2006 - 2010	• Expansion of multi-media in the whole country

Projects for regional development

- The first stage (1996–2000): building regional information centers in metropolitan cities such as Seoul and Pusan
- The second stage (2001–20050: building urban regional information centers and connecting them with regional information centers

- The third stage (2006 –2011): building Up/Myun/Dong regional information centers and connecting them with upper grade sphere regional information centers.

Power / Energy

Trends

The energy supply structure is not stable, mainly due to the lack of natural resources and the inefficient energy consumption structure created by the policy of low energy pricing for industries.

Table 6 Overseas Reliance of Some Countries in Energy and Oil (1994)

Item	Korea	Japan	England	Germany	France
Energy (%)	96.8	86.2	-	61.2	54.4
Oil (%)	62.6	56.2	38.2	40.5	39.0

Reference: Korea is for 1995, Data source: Korea Energy and Economy Institute

Continuous increase in energy demand

- Trends: 150 million TOE in 1994 → 300 million TOE in 2011
- Decreasing the energy consumption ratio to GDP with efficient energy use technology: 0.59 TOE/million won in 1995 → 0.57 TOE/million won in 2001 → 0.46 TOE/million won in 2011.

Change the energy consumption structure

- From industry-centered energy consumption to household-centered energy consumption.
- From petroleum to natural gas and nuclear power.

Major Policy Directions

Establish a stable energy supply system.

- Expand energy supply facilities and guarantee the locations of energy facilities
- Build stable energy supply systems by strengthening international and regional cooperation.

Improve the environment and safety in energy supply and use

- Establish an environmentally-friendly energy supply system
- Improve safety in the construction and management of energy supply facilities

Major Projects

Projects for expanding energy supply facilities

- Expand the capacity of refining crude oil: 170 million barrels/day in 1994 → 244 million barrels/day in 1997
- Extend pipelines: 900km in 1997
- Expand the capacity for storing crude oil: 4,180 million barrels in 1995 → 8,900 million barrels in 1998 → 15,400 million barrels in 2004
- Expand 10 storage tank facilities for natural gas by 1996
- Expand the LNG pipeline to 2,313 km by 2001, to connect with most cities
- Construct electric power plants and supplementary facilities
  - Power capacity: 32 thousand MW in 1993 → 85 thousand MW in 2010
  - Construction of 105 power plants to guarantee the capacity: 19 nuclear power plants, 40 LNG power plants, 27 bituminous coal power plants
  - Supplementary facilities: 197,000 MVA substations, 33,000 C-KM transmission lines by 2005.

Projects to establish a stable energy supply system

- Develop a comprehensive energy resource plan and demand management system
- Establish a sufficient energy supply and transportation system
- Improve the management of emergency energy supplies by expanding energy storage facilities
- Guarantee a stable and safe energy supply through international cooperation

Projects for enhancing energy efficiency by recycling

- Form groups of heat-generation plants to utilize energy economically and establish a comprehensive energy-use system
- Utilize unused energy and new energy by recycling the by-products of processes of using plants for energy, raising livestock, urban wastes, forest resources, etc.
- Change the energy utilization system economically and efficiently: industry, land use structure, transportation system, etc.
- Revise the energy-related legal system

Projects to improve environmental protection standards and to create a safety system for the supply and use of energy

- Enlargement of new and recyclable energy: 25% of total energy demand by 2011
- Enlargement of clean energy and natural gas: 11% and 16% of total energy demand by 2011 respectively
- Strengthening the management and safety of energy supply facilities, and evaluation of their effect on the environment

Water Resources and Drainage

Trends

Water sources and supplies are not guaranteed.

Water pollution, flood damage and uneconomical use of water are severe

By 2011, the demand for water is expected to increase to 36.6 billion tons/year because of urbanization, industrialization and the improvement in people's quality of life

New water resource development will become more difficult because of the need to appropriate land to construct dams and expensive compensation costs

Major Policy Directions

Diversify and expand water resources and manage water resources

Promote water conservation and efficient use of limited water resources

Enhance disaster prevention functions to reduce flood damage and maintain river environs appropriately to create water-friendly spaces

Major Projects

Water Supply facilities

Maintain reserves of water around 10% of the total demand

- Expand water supply capacity up to 39.9 billion tons by 2011 and raise the water resource utilization rate from 24% to 29%

Complete six dams currently under construction including Namgang, Yongdam, Hoengsong, Puan and Yongchon by 2001, and additional 28 dams by 2011

Connect major river systems to solve unbalanced water supply problems, such as extraordinary drought, flood and water pollution, for each river area.

Diversify water resources, through utilizing underground water and desalinization to provide a stable water supply

- Develop underground water utilization for the surface water-deficient areas and the drought season and establish an underground water management plan to ensure efficient use
- Develop a desalinization technique for the coastal and island areas and coastal industrial areas

Improve water service to residential areas by expanding water supply facilities

- Raise the water supply rate from 82% to 95% and increase water supply per capita from 408 *l* to 480 *l* by 2011

Expand water supply systems for manufacturing and agriculture

- In conjunction with the Industry Relocation Plan, complete three water supply systems exclusively for the manufacturing sector by 1999 and construct seven additional systems by 2011
- Extend the irrigation facilities for agricultural purposes, construct reservoirs for increasing water capacity, and promote efficient use of agricultural water by paving waterways

Improve the water quality in 10 major rivers up to Level I - II, raise the rate of accomplishing the water quality goal up to more than 95%, and create a water-friendly environment

Table 7 Water Supply Plan

(unit: billion ton)

	1994	**2001**	**2011**
Total Demand	29.9	33.6	36.7
Total Supply	32.2	35.0	39.9
Capacity Supply Surplus	8%	4%	9%

Table 8 New Dam Construction Plan

River Basin	Planned Dams	Supply Capacity
Hangang River	9 dams	3bln tons/year
Naktonggang River	13 dams	1.5bln tons/year
Kumgang River	2 dams	0.4bln tons/year
Youngsan-Sumjin River	4 dams	0.3bln tons/year

Table 9 Water Supply Planning Index

	1994	2001	2011
Water Supply Rate (%)	82	90	95
Water Supply (*l* /person/day)	408	440	480

Strategies for Private Sector Participation in Infrastructure Development

Legal and Regulatory Framework for Infrastructure Development

There are large number of laws that have sections related to infrastructure investment. The most important is the *Private Capital Inducement Act* (PCIA) which was enacted in August 1994.

Private Capital Inducement Act (PCIA)

1) Purpose

The PCIA is to induce private investment for the expansion and efficient management of infrastructure facilities.

2) Characteristics

Should there be any conflict between the PCIA and any other act(s) with regard to selected infrastructure projects, the PCIA shall prevail, because existing laws don't have concrete, effective provisions for private capital inducement.

3) Major Substance

There are two types of infrastructure facilities -- primary and secondary. The primary facilities include roads, railways, port facilities, airport facilities, dams, water dams, water supply and drainage facilities, electricity facilities, etc. Secondary facilities are supplementary to the primary facilities.

Establishment of the Basic Plan: The Minister of Finance and Economy (MOFE) shall establish and release a Basic Plan for Private Capital Inducement every year in consultation with the heads of the competent central government authorities. The competent authority shall establish and release a basic program for each specifically selected infrastructure project. A private firm may propose an infrastructure project basic plan be included in the Basic Plan as a formal infrastructure project.

The Private Capital Inducement Committee (PCIC): The Committee is to be established by the Ministry of Finance and Economy to deliberate about which infrastructure projects should be undertaken and to discuss other relevant issues concerning private inducement. The Committee will be chaired by the Minister of MOFE.

Designation of Franchisee: The competent authority designates a firm as a franchisee after reviewing the business plans submitted by the candidate firms (Article 12 of the Act). When the project is large scale -- beyond 500 billion won -- it should be reviewed by the PCIC.

Incidental Business: The competent authority may permit the franchisee to establish primary facilities to pursue incidental business if he deems it necessary for the franchisee to realize a fair return on investment. These incidental businesses are limited to:

- Housing construction under the Housing Construction Promotion Act
- Housing lot development under the Housing Lot Development Promotion Act
- Urban planning under the Urban Planning and Zoning Act
- Urban redevelopment under the Urban Redevelopment Act
- Industrial complex lot development under the Industrial Complex Development Act
- Hotel and entertainment business under the Tourism Promotion Act
- Freight terminal business under the Shipping Business Act
- Freight transport service business under the Act for Freight Transport Service at Port
- Large shopping centers, large retail outlets, wholesale centers, or goods distribution centers under the Wholesale and Retail Trade Act.

Reversion of Ownership of Facilities: Ownership of primary facilities should rest with the central or local government upon their completion, while ownership of the secondary facilities rests with the franchisee. The franchisee may be granted free use of the infrastructure facilities.

Establishment and Management of the Infrastructure Credit Guarantee Fund: The Infrastructure Credit Guarantee Fund (ICGF) is to be established in order to guarantee the credit of franchisees who raise funds through loans to carry out selected infrastructure projects. The ICGF should be managed by the Korea Development Bank, the Credit Guarantee Fund, and the Credit Guarantee Fund for Technical Development.

Supervisory Orders: The Minister of MOFE may supervise the project, issue an order, or take action, if necessary, to achieve desirable results.

Investment by the Public Sector: In the case where the public sector invests in a joint corporation (including a joint corporation being newly established) which pursues the construction of one or more secondary facilities, the public sector's share of the total amount of investment should not exceed more than 50%, except in the cases specified. And the public sector should not exercise voting rights.

Financial Support by the Government: The central or local government may support the franchisee in several ways, including issuing tax exemptions, to ensure the efficient construction of infrastructure facilities.

Basic Plan for Private Capital Inducement.

The Basic Plan for Private Capital Inducement is an action program for private investment on infrastructure for a specific year. The main elements of *The 1996 Basic Plan for Private Capital Inducement* are as follows:

1) System for Directing Private Capital

Basic Directions

- Expand and enhance infrastructure development by active private participation
- Introduce creativity and efficiency into the public sector
- Consider national investment priorities and the mid- and long-term plans for improving infrastructure
- Manage private participation with open and clear procedures to encourage competition

Management of Private Capital Inducement Projects

- Promote selected infrastructure projects approved by the competent authorities based on the Private Capital Inducements Act
- Promote selected infrastructure projects based on individual Acts when their application is more beneficial than that of the Private Capital Inducement Act
- Manage the total amount of private investment on infrastructure appropriately for the balance of investment by sectors, and, in principle, encourage private firms to initiate projects according to their own plans.

Procedure for establishing the Basic Plan

- The Minister of the relevant central government agency (e.g. Minister of MOCT) prepares the list of expected infrastructure projects for the next 3 years and reports it to the Minister of MOFE by the end of the year.

- The Minister of MOFE should establish and promulgate a Basic Plan in consultation with the PCIC for the following year.
- The competent central government authority should establish and promulgate a Basic Program for each specific selected infrastructure project.
- Any private firm, which intends to carry out an infrastructure project should prepare a master plan according to the Basic Program, and submit it to the competent authority for designation as a franchisee based on the Basic Plan.
- The competent authority may designate an applicant firm as a franchisee after evaluating the master plan submitted. In this case, the Committee deliberates on the master plan when its total amount in investment exceeds 500 billion won.

2) General Guidelines for Privately-Funded Projects

Ownership

- Primary facilities belong to central and local governments upon completion, while secondary facilities belong to the private franchisee. However, secondary facilities may be reverted to the government for public need, if necessary.

Franchise

- In principle, the franchising period is based on the time necessary to recover total cost, not exceeding 50 years.
- Each project applicant uses his own discount rate.

After the end of the franchise period, the public sector manages the facilities concerned or entrusts their management to the private sector.

Incidental business is permitted only for recovering losses from management of a main facility and is limited to nine businesses specified by the PCIA.

Franchisee

- A franchisee should be a private or private/public corporation.
- In the case of a private/public corporation, neither the public nor the private stockholder's investment for secondary facilities should exceed 50 per cent of the total investment. Private stockholders have priority on profit dividends.
- Franchisee can be chosen by:
  - Open bidding process, or
  - Through negotiation, especially when there is only one applicant.

Institutional Arrangements for securing the faithful execution of projects

- The competent authority may supervise the franchisee and take action, if necessary. In particular, in the case of legal violations and public interest, the competent authority may change the franchisee.
- The competent authority can force a franchisee to be under supervision, and can establish a security deposit, a guaranty from security companies, and joint liability on guarantees.
- The competent authority may impose a fine when the franchisee does not complete facilities by the due date.

Tax Incentives for Private Investment on Infrastructure

Tax exemptions are very important for attracting private investment for infrastructure development. Article 50 of the PCIA stipulates *"The central and local governments may exempt the franchisee from taxes or grant it tax reductions in order to induce private investment in accordance with the provisions of the Tax Reduction and Exemption Control Act."* In Article 49, the Act provides that *"The franchisee may be exempted from all or part of the charges."* To attract private investment on infrastructure, the following tax incentives are possible.

- Exemption from a special value-added tax: 50 per cent of a special value-added tax on induced transfer profits when the franchisee transfers lands and buildings to the government. The franchisee may be exempt in accordance with the provisions of the Tax Reduction and Exemption Act.

- Exemption from corporate tax: 15 per cent of the total private investment may be regarded as a pecuniary loss in accordance with the provisions of the Tax Reduction and Exemption Act.

Others include:

- Exemption from the tax for extra profits from land
- Exemption from charges for occupying agricultural lands or forests

Provisions of Private Participation Procedures for Infrastructure Development

<u>Qualifications of Franchisee</u>

The franchisee should be a private corporation or a private-public corporation. Foreign corporations may also be franchisees. This is to say, the public sector (central government, local governments, public corporation, etc.) cannot be the only franchisee. Private/public sector corporation means an entity, which is established by joint investment of the private sector and public sector.

Project applicants may establish an independent corporation after being designated as a franchisee, and the franchisee may transfer the franchisee status to a newly established corporation after receiving permission from the competent authority. In addition, the public sector should invest 50 per cent or less of total investment when it invests in the secondary facilities.

Applicants for the Project

A firm which intends to apply for an infrastructure project should prepare a master plan based on the Basic Program and submit it to the competent authority. The period from notification to submission is at least three months. The submitted master plan is evaluated by an evaluation committee of the competent authority.

The competent authority may ask the franchisee to submit a statement of investment guarantee, guarantee deposit for project implementation and security, or a statement for faithful project completion.

Designation of the Franchisee

The competent authority selects a franchisee based on the Project Evaluation Committee's evaluation. When there is only one applicant, the competent authority may designate that applicant as the franchisee if the applicant has satisfied all conditions of the franchise.

Government Commitment, Support and Management

Role of Government

In privately-funded infrastructure projects, the role of the government consists of the following:

- Planner: The government constructs and announces the Basic Plan for Private Capital Inducement.
- Owner of the facilities: In principle, infrastructure facilities (the primary facilities) constructed by the private sector are owned by the government upon completion.
- Supervisor: The government supervises the process of the infrastructure development from planning to completion of the project.
- Supporter: The government supports the franchisee in various ways to assist the project.

Supporting System of Government

The government's current support system is classified into four types: administrative support, financial support, tax favors, and support for land use acquisition.

Administrative support means providing various kinds of administrative systems for infrastructure development. This will be explained in detail in the next section.

1) Financial support

The government may provide the franchisee with financial grants or long-term loans following deliberation by the Committee within the limits of the fiscal budget when:

- It is necessary to prevent the dissolution of the corporation
- It is necessary to maintain user fees for the facilities at reasonable levels

2) Support by Monetary Circulation

In the case where a company among the 10 major company groups (called Chae-bul) acquires the real estate to carry out projects for "the primary infrastructure facilities", the government may not require admittance of its major bank.

The government may allow the introduction of a foreign commercial loan in the amount of US$100 million a year to carry out an infrastructure project.

When issuing a bond to raise funding for an infrastructure project, the franchisee may receive favorable rates from the government.

3) Support for Land Acquisition

The government may give a franchisee authority for the expropriation of lands.

A franchisee may transfer the responsibility for the purchase of lands, compensation and resettlement of residents to the competent authority or local government.

National or public properties in a selected infrastructure project area should not be sold for any other purpose, and may be sold to the franchisee through a private contract.

The central or local government may permit the franchisee to use national or public properties free of charge in order to construct buildings or facilities without having to relinquish ownership of those buildings or facilities, notwithstanding the provisions of the National Property Act or the Local Finance Act.

The Infrastructure Credit Guarantee Fund is to be established in order to guarantee the credit of a franchisee who raised funds through loans to carry out the selected infrastructure project.

4) Other Support

In the case of a company among the major business group (called Chae-bul) investing in primary facilities, the regulation which limits the total amount of investment may not be applied for 20 years.

Administrative Systems

Administrative systems for infrastructure development under the current order are divided into two parts: MOFE and other competent authorities.

1) Ministry of Finance and Economy (MOFE)

The role of MOFE is to establish the *Basic Plan for Private Capital Inducement* and to manage PCIC (Private Capital Inducement Committee).

(1) Establishment of the Basic Plan for Private Capital Inducement

MOFE constructs a draft for the *Basic Plan for Private Capital Inducement* based on the reports from the competent authorities and on public opinion, and deliberates with the PCIC.

(2) Composition and Management of the PCIC

PCIC is to be established and managed by MOFE.

- The Chairman: Minister of Finance and Economy
- The Committee: Minister of Home Affairs
  Minister of Culture and Sports
  Minister of Agriculture, and Forestry
  Ministry of Trade, Industry and Energy
  Minister of Construction and Transportation
  Minister of Information and Communication
  Minister of Environment
- The Entrusting Committee: Other individuals who possess the appropriate knowledge and experience commissioned by the chairman.

PCIC handles the following issues:

- Major policies related to the inducement of private investment
- Establishment and revision of the Basic Plan for Private Capital Inducement
- Establishment and revision of the Basic Program for large-scale infrastructure projects

2) Competent Authority

A competent authority means the head of the administrative agency, such as the Ministry of Construction and Transportation, responsible for any infrastructure project.

The role of the competent authority is summarized as follows:

- Selection of the franchisee
- Approval of the franchisee's implementation program for the project
- Supervision of the working process and examination of the project upon completion

Procedures for Infrastructure Development with Private Capital

The management procedures for private capital inducement projects and the relevant authority's roles are explained in the previous section. This section describes the general procedures for infrastructure projects with private investment.

Submission of Proposal and Application for the Franchise

A private corporation that is willing to participate in the private capital inducement project must submit a master plan for the project and apply for the franchise.

Designation of the Franchise

The competent authority may select a franchisee through an open competition and bidding process. But in the case where there is only one applicant the authority may designate a franchise through negotiation with the applicant.

Especially when only one consortium applies for a large-scale project, the authority negotiates with the applicant the major terms of the project implementation such as tolls/fares/charges, discount rate, terms of franchise, etc. This was the case for the Inchon International Airport Express Highway project started in late 1995.

Application for the Approval of the Implementation Program

The private corporation designated as a franchisee must establish the implementation plan and apply for the approval of the implementation plan within one year. It can be delayed six months when the authority acknowledges a special reason. The authority must decide whether to approve or reject the plan within six months.

The franchisee must include an incidental business program in the implementation plan when needed.

Confirmation of the Completion of Facilities

Construction is to begin on the date the implementation plan is approved. When the construction is completed, the franchisee must acquire the confirmation of completion from the authority. The facility can not be used without the confirmation of completion.

Acquisition of the Franchise

The franchisee takes the franchise and the operation rights of the facility as soon as the competent authority has confirmed completion.

THE INTEGRATED PLANNING PROCESS IN KOREA

Prepared by

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THE INTEGRATED PLANNING PROCESS IN KOREA

Infrastructure planning, by nature, needs integration and coordination processes between various planning and implementing subjects. This is mainly because:

- It is concerned with a few spatial planning units and, subsequently, overlapped by a series of spatial planning procedures;
- It is complicated by political and administrative intervention and thus needs coordination between the central and local governments, among local governments, and even among various ministries of the central government, and
- It requires such a large amount of money that new methods to attract and encourage private sector participation are constantly sought.

The concept of integration and coordination is becoming more and more important in the case of Korea. It is just two years since local autonomy was adopted by the Korean political system. Thus in its transition period from a centralized to a local system, a set of general principles for dividing roles among a few tiers of spatial planners, between the central and local governments, and between the public and private sectors must be established.

I will present the Korean integrated planning process within this framework:

- Integration among a series of spatial planning processes;
- Integration between the central and local governments, and
- Integration between the public and private sectors.

Integration among Spatial Planning Processes

Generally, infrastructure planning is shaped by a series of spatial planning processes from national to regional levels. The regular spatial planning processes in Korea are composed of a hierarchical structure including national, provincial, and country/city plans. This structure is supported by the Law for the National Comprehensive Development Plan enacted in 1963. The National Comprehensive Development Plan is a long-term (10 years so far), physical plan for the whole country which covers the spheres of spatial structure, land use, industrial location, etc., as well as infrastructure planning.

There are also special programs of spatial planning which have specific purposes. The capital region, which is composed of the city of Seoul and its surrounding areas, is given special care by the Capital Region Management Plan in order to manage the region's tendency toward over-crowding. For the regional economic centers outside of the capital region, Enlarged Economic Area Development plans are to be established for designated areas. This program is intended to give impetus to the regional economy bases. For under-developed areas, development promotion district plans are to be formulated for designated areas. These areas include abandoned mining areas and those which have been experiencing continual under-development.

To date, there have been no major conflicts between any of the aforementioned programs and, therefore, no big problems in their integration. Infrastructure planning has been generally dominated by the central government and, subsequently, infrastructure plans set at the national level have been accepted and used as general guidelines for the lower-level plans.

In future infrastructure planning, however, more attention will be paid to the integration process. The basic principle of planning will be geared more to a 'bottom-up' rather than a 'top-down' approach. Even higher-level plans cannot ignore lower plans and should try to minimize or eliminate the potential for conflict among lower level plans, or even between lower and higher plans.

Integration between Central and Local Governments

There have not been many conflicts so far between the central and local governments in infrastructure planning. Most of the major infrastructure planning has been carried out by the central government. Even when local infrastructure planning is promoted at the local level, it is supervised by the central government in the planning and implementation stages. For example, the construction of provincial, city or county roads is planned by the respective local governments, but coordinated by the central government.

As local autonomy is increasing, more coordination is required. Every local government searches for a higher quality of life for its own residents and tries to construct new infrastructure for this purpose. For example, some local governments try to attract within their boundaries high-speed railway stations, which have high development potential, sometimes inducing conflicts with surrounding localities. In one case, a highway routing plan, established by the central government, was rejected at the local level because the highway would not be connected to the area by an interchange, but would just pass through.

One of the tools to integrate planning procedures at the local level is financing. Local governments are weak in their financial positions and highly dependent on the central government. The self-financing rate of local governments is 78% on average; it is more than 90% for most metropolitan cities, but as little as 68% for provinces, and 36% on average for the counties.

There is also need for integration within the central government. The Ministry of Construction and Transportation (MOCT) establishes and implements infrastructure plans, while the Ministry of Finance and Economy (MOFE) finances their implementation and sets priority among the projects. In infrastructure planning, MOCT also cooperates with the Ministries of Environment, Agriculture and Forestry, Maritime and Fisheries, etc.

Integration between the Public and Private Sectors

So far, infrastructure construction and planning have been dominated by the public sector because the public nature of infrastructure has been emphasized. The need for involving the private sector in infrastructure projects is becoming more critical. The construction and management of infrastructure facilities require large amount of money, but public sourcing has limitations. The private sector can bring creative ideas and management skills to the process.

In order to promote private sector participation, the Private Capital Inducement Act (PCIA) was enacted recently. According to this Act, a basic Private Capital Inducement Plan is released every year by the central government to provide information on infrastructure projects for the coming years. A private firm may propose the inclusion of an infrastructure project in the Basic Plan. Joint participation by the private and public sectors in infrastructure planning does not create any big problem because private participation is planned by the central government each year and supported by some incentive systems.

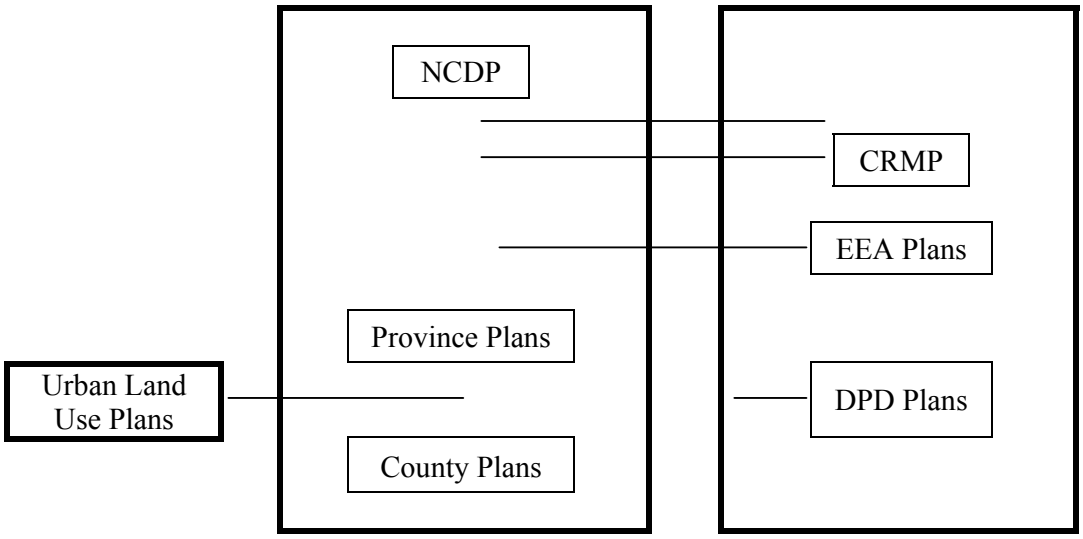
The applicant can be a private company, consortium of a few companies, or a consortium composed of the private and public sector entities. The applicant submits a master plan based on the released Basic Plan and an evaluation committee selects a developer. After the developer has built the facility, it franchises and operates the facility for the designated period before transferring all properties to the government (BOT system). In order to compensate for the large investment and long return period, the developer is allowed to engage in incidental business, such as housing district development, urban redevelopment, freight terminal business, etc.

Private participation has been growing and is expected to continue to grow rapidly in the near future.

- In 1995, 12 projects were initiated by the PCIA with 9.74 trillion won (about US$11 billion) investment.
- In 1996, 13 projects were initiated by the PCIA with 9.23 trillion won (about US$10.5 billion) investment.
- In 1997, 15 projects were initiated by the PCIA with 8.08 trillion won (about US$9 billion) investment.

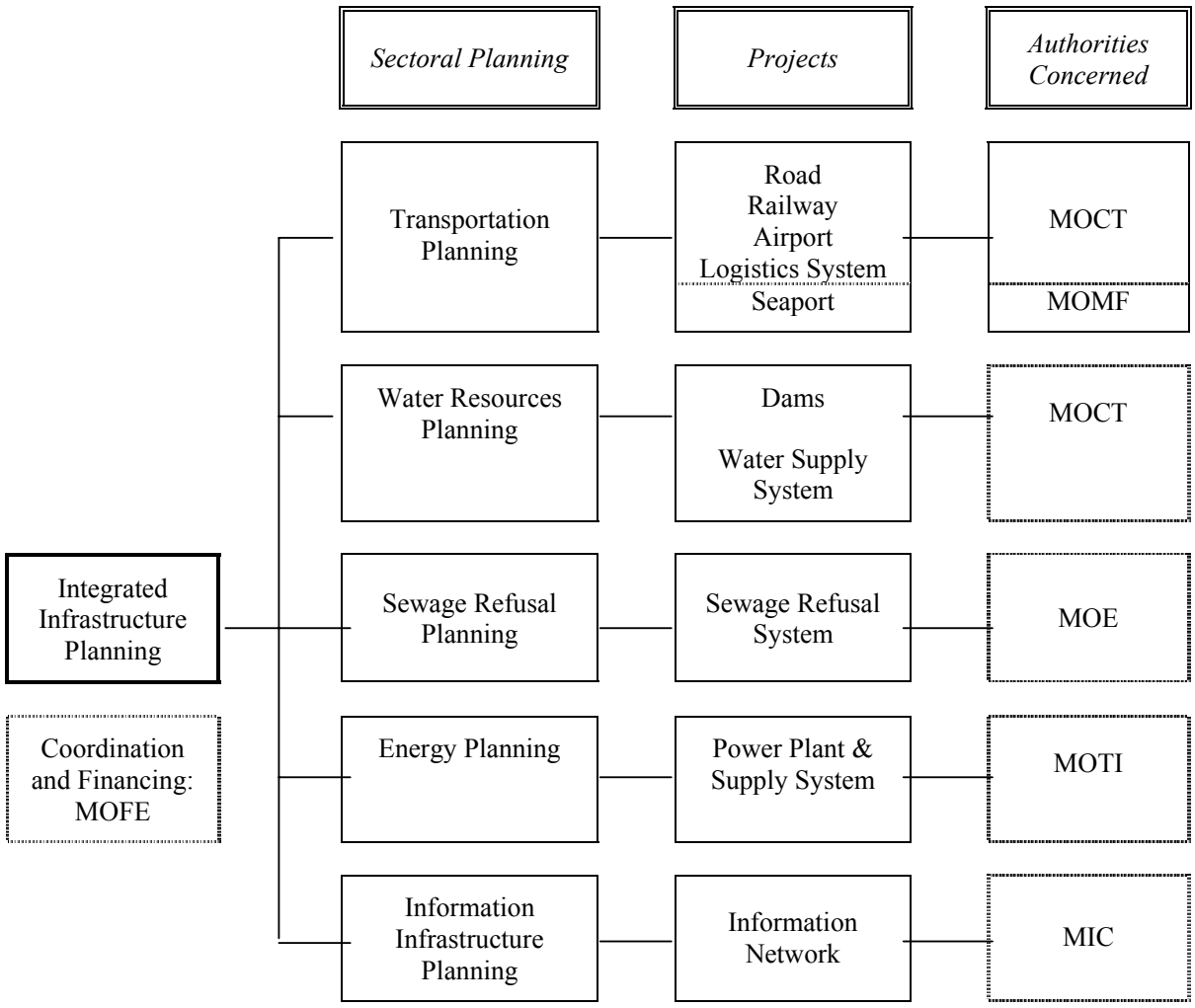
The private sector should be encouraged to take the initiative in proposing infrastructure projects and establishing a real meaningful partnership with the public sector. Most of the projects in which the private sector has participated so far have been initiated by the government. The private sector may propose the inclusion of infrastructure projects in the Basic Plan for the Private Capital Inducement, but this practice needs to be encouraged and expanded by the government.

Figure 1. Korean System of Spatial Planning



NCDP: National Comprehensive Development Plan
CRMP: Capital Region Management Plan
EEA: Enlarged Economic Area
DPD: Development Promotion Districts

Figure 2 Sectors and Authorities of Integrated Infrastructure Planning



MOFE: Ministry of Finance and Economy
MOCT: Ministry of Construction and Transportation
MOMF: Ministry of Maritime and Fisheries
MOE: Ministry of Environment
MOTI: Ministry of Trade and Industry
MIC: Ministry of Information and Communication

MALAYSIA'S EXPERIENCE IN INTEGRATED INFRASTRUCTURE DEVELOPMENT PLANNING

A MACRO PERSPECTIVE

Prepared by

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MALAYSIA'S EXPERIENCE IN INTEGRATED INFRASTRUCTURE DEVELOPMENT PLANNING

Introduction

Planning has an inherent appeal due to its promise of a better or more desirable outcome. In as much as planning ensures optimal use of limited resources, it is also economically logical. The clarity with which every point within the whole planning process is identified and stipulated increases the probability that stated objectives will be achieved. The absence of reliable market mechanisms also makes a strong case for the need to plan. Planning can be undertaken formally or less so, extensively, or on a more limited basis. Integrated planning as a qualitative enhancement of the process brings optimum results by ensuring that consideration is given to all aspects having a bearing on the process.

The Planning Process in Malaysia

Malaysia has a long tradition in development planning which started even before she obtained her full independence as the then Federation of Malaya in 1957. We are now in the midst of the Seventh Malaysia Plan 1996-2000. The growth of the economy as reflected in GDP performance has been high by international standards. In the 1970's, the GDP grew by 7.5 per cent, in the 1980's by 5.9 percent, and for the Sixth Plan we grew at 8.7 per cent. The target for the Seventh Plan is a modest 8.0 per cent. In 1970 the per capita income of Malaysians was RM1,109 (US$360). This rose to RM6,099 (US$2,255) in 1990 and an estimated RM11,023 (US$4,374) in 1996. During the period of high growth since 1987 inflation has been kept to a low level of less than five per cent per annum. From these performances, we can conclude that we have been vindicated in our faith in development planning.

Many countries undertake the same kind of development effort through planning but do not manage to achieve similar levels of growth. The explanation can be attributed to many factors to be sure, but the most important is Malaysia's need for plans to be implemented. Fortunately for Malaysia, the existence of a stable government with a pragmatic approach has ensured what has been planned has been implemented. The best-laid plan is meaningless when there is little possibility of it getting off the ground. The key to Malaysia's success is our having practicable development plans.

The process of planning has changed over the years as we have evolved as an economy. It has become more comprehensive and more integrated. This fact has also contributed to the development of more workable plans. Firstly, planning in Malaysia is a two-way interactive process between the central agencies on the one hand, and the line ministries and agencies on the other. This implies a top-down and bottom-up process. Planning from the top which is confined to setting macro-level parameters is undertaken by the central agencies, including the Economic Planning Unit, Implementation Coordination Unit, Malaysian Administrative Planning Unit,

Department of Statistics, the Treasury, and the Central Bank, as well as planning cells within various ministries and agencies. The establishment of Inter Agency Planning Groups (IAPGs) has allowed intensive discussion and coordination to take place. Beyond this, each IAPG often forms working committees or task forces to deliberate further on specific issues where representatives from such groups as academia and the private sector can be involved. This mechanism of allowing input from a broad cross section of society has produced more integrated planning documents.

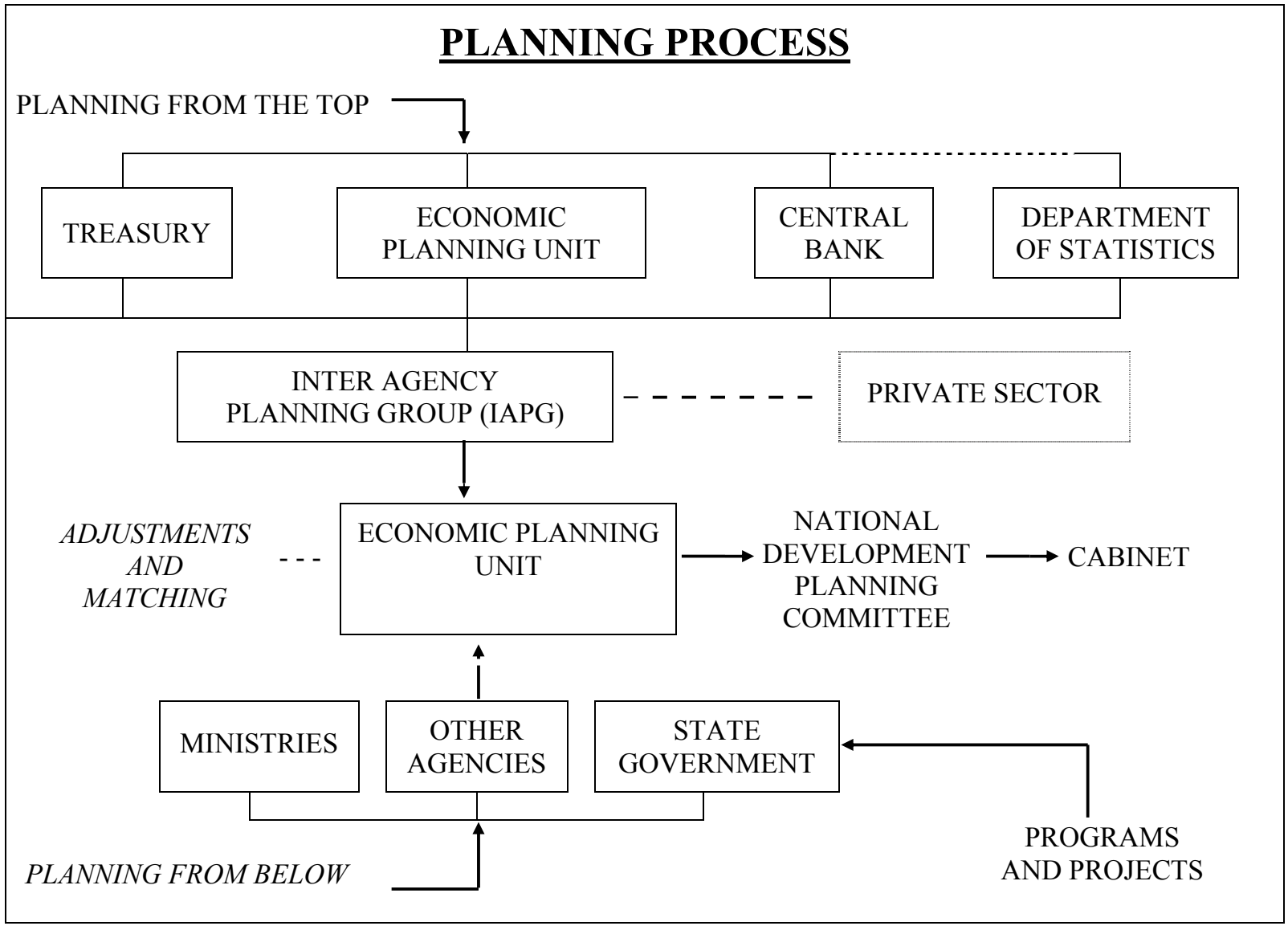
Planning from the bottom, essentially involves the line ministries, agencies and the state government (as well as, through it, the local government) which translate macro parameters into sectoral plans, programs and projects. These are then transmitted to the EPU for matching macro-level programs and projects with the macro-level plans for each economic sector. The whole process can be visualized from Chart 1. Each plan document therefore, while addressing the whole economy, provides specific chapters to address major sectors or areas of concern. In this sense the Malaysia Plan can be said to have well integrated its components. In line with the continuous strong commitment toward infrastructure development by the government, infrastructure has always secured a special focus within the plan. As such, infrastructure development always has been accorded a central role in Malaysia's planning process for development.

The Role of the Private Sector

The second most remarkable feature of planning in Malaysia is the opportunities provided for participation by the private sector, especially after 1980. This fits well with the government strategy of having private sector-led growth. In 1982, the government introduced the Malaysia Incorporated concept as a basis to engender cooperation between the public sector and the private sector. Under this concept the orientation of the civil service has been molded toward facilitating fully the activities of the private sector by reducing bureaucratic obstacles and ineptitude. This resulted in a continuous process of administrative improvements and liberalization conducive to private sector involvement in the economy. This was followed by the Privatization Policy in the following year, paving the way for the private sector to be responsible for the implementation of projects or provision of services that would otherwise be undertaken by the government. The adoption of the two policies represented a paradigm shift in the thrust of the nation's development.

The need for this paradigm shift was necessitated by limited public sector resources and the need to expand infrastructure capacities at an accelerated pace. The private sector was encouraged to play an active role in the development of infrastructure projects. In this manner, public sector resources were freed and directed to other projects not viable or appropriate for private sector participation. Privatization not only promotes increased competition and efficiency but also improvements in productivity. The responsibility for implementing the privatization policy and programs was given to the Economic Planning Unit (EPU) with the active participation of the relevant agencies.

CHART 1


PLANNING PROCESS
PLANNING FROM THE TOP
TREASURY
ECONOMIC PLANNING UNIT
CENTRAL BANK
DEPARTMENT OF STATISTICS
INTER AGENCY PLANNING GROUP (IAPG)
PRIVATE SECTOR
ADJUSTMENTS AND MATCHING
ECONOMIC PLANNING UNIT
NATIONAL DEVELOPMENT PLANNING COMMITTEE
CABINET
MINISTRIES
OTHER AGENCIES
STATE GOVERNMENT
PROGRAMS AND PROJECTS
PLANNING FROM BELOW

The success of the private sector-led growth strategy is due to regular consultation and coordination between the public and private sectors in the spirit of the Malaysia Incorporated policy. Various mechanisms have been established to encourage private sector participation in the development of the economy. The Malaysia Incorporated concept also gave birth to the establishment of the Malaysian Business Council (MBC) in 1991. Under this Council, the Prime Minister along with senior members of the government deliberate with the captains of industry on major policy issues pertaining to the nation's future. Their creative consultation and meaningful dialogue covers a wide range of concerns as reflected in the primary objectives of the MBC. Among others, they include:

i. To facilitate a productive flow of information among the key actors of Malaysia Inc;
ii. To act as a forum to address the ever-increasing needs and complex nature of the problems that challenge industrial development;
iii. To remove misunderstanding, enhance mutual respect, and help forge the healthiest of private sectors, and
iv. To promote productive cooperation and healthy collaboration between the three key actors in our drive towards a developed nation.

The MBC has to date created nine Working Committees, namely:

i. Committee on Malaysia Inc. and the Role of the Government and the Private Sector;
ii. Committee on International Trade, Industry and Investment;
iii. Committee on Infrastructure;
iv. Committee on Managerial, Leadership and Entrepreneurial Development;
v. Committee on Monetary and Financial Management;
vi. Committee on Human Resource Development;
vii. Committee on Bumiputra Economic Progress and Participation;
viii. Committee on Services and Information-Rich Society, and
ix. Committee on Industrial Technology, the Environmental and Sustainable Growth.

The government also provides other channels for the private sector to convey their views pertaining to matters that may be of their immediate or shorter-term interest. This is mainly done through the annual dialogues organized by the Ministry of Finance, Ministry of International Trade and Industry, and Bank Negara (Central Bank) providing further avenues for interaction. These annual dialogues can be regarded as occasions for fine-tuning the planning and development process, touching upon policies, programs and even specific projects. Here, complaints on the inadequacies of infrastructure, among others, could be brought for immediate government response.

Privatization

Under the Seventh Malaysia Plan privatization will be accelerated. This strong commitment demonstrates the responsibility that has been attached to the private sector in spearheading Malaysia's development. Privatization in Malaysia encompasses existing entities or projects as well as completely new projects. Its implementation has taken many forms. These included:

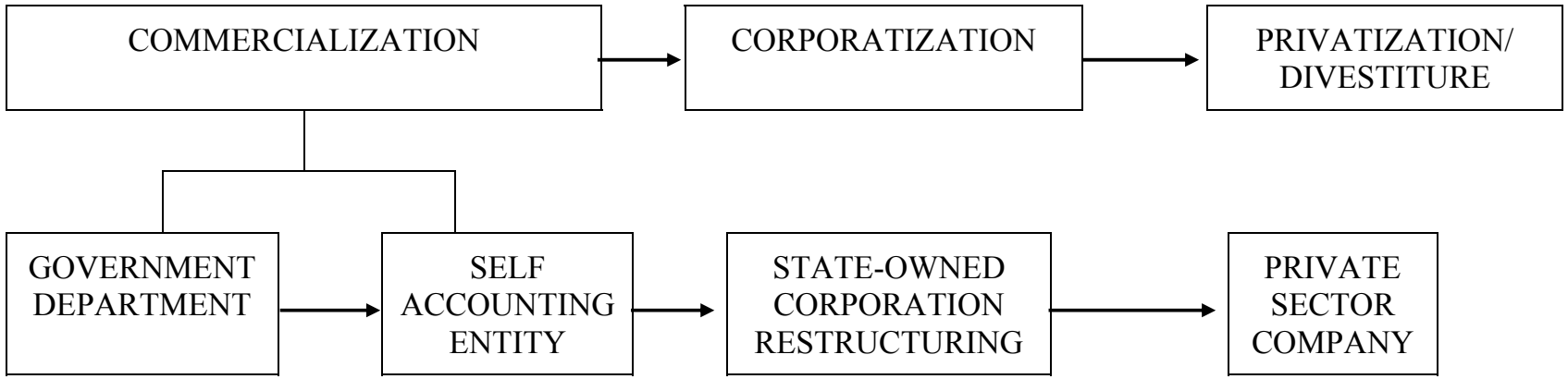
Mode	Examples of Entities
a) Sale of equity	National Electricity Board, Cement Industries Malaysia, Malaysia Airlines System (MAS) and Malaysian International Shipping Corporation (MISC).
b) Sale of assets	Quarries in Selangor, Pulau Pinang and Perak.
c) Lease of Assets	Port Klang, Malaysian Airports, Bintulu, Johor Port
d) Management Contract	Semenyih Dam.
e) Build-Operate-Transfer (BOT) Transfer (BOT)	North-South Expressway.
f) Build-Own-Operate (BOO)	Independent Power Generation Plant, Light Rail Transit.
g) Build-Operate (BO)	Sistem Televisyen Malaysia (TV3).
h) Management-Buy-Out (MBO)	Pernas, K.K. Industries.

In most cases of public monopolies or entities in the public sector, the government undertakes corporatization first before privatizing as shown in Chart 2. Such an approach enables the organization to be restructured to place the entity on a commercial basis, with focus on improved efficiency and productivity. Such an approach was adopted in privatizing the various utilities such as power and telecommunications. Before the corporatized entity can be considered for listing on the local stock market, the revamped entity will normally have to show profits for three consecutive years. This rule provides the motivation for employees to upgrade their productivity and efficiency, as well as make the entity more amenable to full privatization, and, in the process, fetch a higher price upon its listing on the local bourse. However, the Securities Commission has allowed exceptions to Infrastructure Project Companies (IPC) with projects costing more than RM500 million provided the IPCs can show a constant and steady stream of income over the concession period of not less than 18 years.

In the case of specific projects, the government also considers private sector proposals on a first-come, first-served basis. In such cases, if the concept proposed is acceptable to the government, the private party concerned will be required to submit a detailed proposal for consideration. Upon acceptance of this detailed proposal, negotiations are undertaken to prepare the necessary concession agreement. An important consideration in evaluation of the proposals is the project viability.

CHART 2

STRAGES TOWARDS PRIVATIZATION FOR EXISTING GOVERNMENT AGENCIES



In situations where specific projects have been identified by the government for privatization, proposals are invited from the private sector. In this case, appropriate tender documents are prepared for the private sector to submit proposals. The whole process from evaluation to negotiation as shown in Chart 3 is undertaken by a privatization committee at the EPU with the assistance of the relevant ministries and agencies. Working groups for finance, technical, land and concession agreement under the different ministries and agencies study each aspect in detail. This procedure helps to facilitate project implementation at the later stage, particularly on land and licensing issues. Consequently, privatized projects get implemented and completed faster.

In line with the government policy to accelerate the pace of privatization, the Privatization Master Plan was adopted in 1991. The Master Plan touches upon the policy framework, procedures for implementation, priorities among candidates, achievable results, and steps needed to sustain the program. A two-year rolling plan called Privatization Action Plan (PAP), which covers over 200 projects for 1995-96, was also formulated. It contains a list of feasible projects to be privatized and is reviewed at the end of each year. Naturally infrastructure has been a major target of the policy. The total number of projects by sector and mode are shown in Table 1.

During this period, intensification of the privatization program saw a number of large infrastructure projects being undertaken by private sector. The privatized projects are multi-sectoral and cover all types of infrastructure. In roads, the North-South Expressway became the first major highway to be privatized. This 847-kilometers, world-class highway was completed 15 months ahead of schedule. To date, a total of 26 highways have been approved for construction via privatization and most of them are expected to be completed by the end of the Seventh Plan. In the rail sector, the government owned railway was corporatized and now operates on a commercial basis with some support from the government. Two privatized Light Rail Transit projects are under construction with the first phase of one of them operational at the end of 1996, and private construction of a monorail project has just begun. These projects will provide Kuala Lumpur & the Klang Valley with a metropolitan rail transport system.

Table 1

Distribution of Privatized Infrastructure Projects
(1991 – 1996)

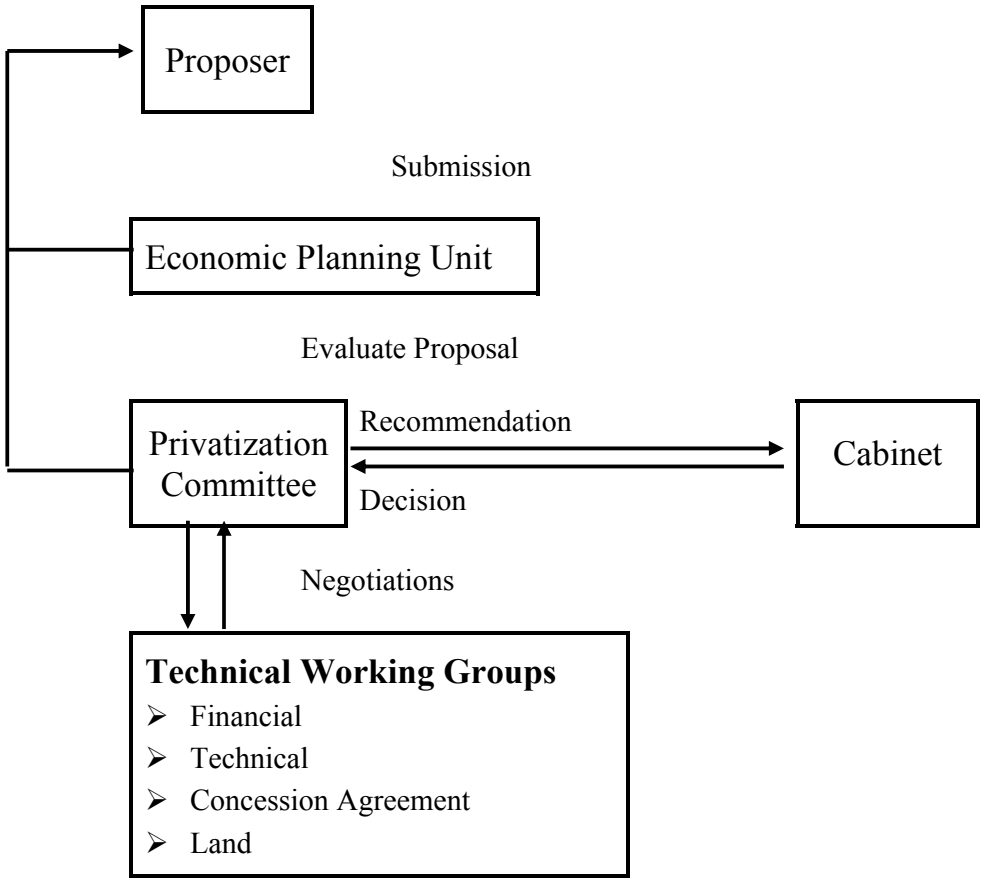
Sub-sectors	Number	(%)
Infrastructure		
Construction	50	20.7
Electricity, Gas, & Water	15	6.2
Transport & Communication	31	12.8
Others	16	6.6
Sub-Total	**114**	**47.1**
Non-Infrastructure	128	52.9
Total	**242**	**100**

Source: Economic Planning Unit, Malaysia.

CHART 3

PRIVATIZATION EVALUATION PROCEDURES

(New Projects)



During the same period, the ports of Johor and West Port of Port Klang were privatized, while Bintulu and Penang were corporatized. In the airport sub-sector, almost all Malaysian airports were corporatized under the management of one single entity, namely Malaysia Airports Berhard. Meanwhile, the national airline, which was formally owned and controlled by the government was divested and sold to the private sector. The telecommunications sector is completely privatized with the listing of Telekom Malaysia Berhard (TMB) in 1992. The sector was also liberalized with the entrance of new players in the provision of basic network, international gateway, public and mobile radio, satellite and other services. With regards to the electricity sector, Tenaga Nasional Berhard (TNB) was also privatized in 1993 with its listing in the local bourse. As in the case of the telecommunications sector, the electricity sector was further liberalized with the emergence of nine independent power producers (IPPS) for the period 1991 – August 1996.

The total savings in capital expenditures from privatized projects amounted to RM51.6 billion, 70.9 per cent of the RM96.2 billion in savings from privatization since 1983. The savings in annual operating expenditures were RM7.0 billion. Not only did this method of implementing projects release public sector finances but also made it possible to implement more projects in a shorter time frame, thus benefiting all sectors of the economy. Although the objective of privatization is not to generate revenue for the government, the program has contributed RM22.2 billion from the sale of equity and assets, over and above corporate tax. A survey of 17 privatized companies showed that corporate tax attributable from privatization between 1991-95 amounted to RM2.3 billion. As of 31 December 1996, market capitalization of privatized companies on the Kuala Lumpur Stock Exchange (KLSE) amounted to RM165.45 billion or 20.5 per cent of the total capitalization of the KLSE.

Integrating Infrastructure Development

There can be different perceptions of integrated planning for infrastructure development. But within the Malaysian planning process as explained, integrated implies the bringing together of major aspects into a total national development plan. Some aspects are given prominence in one plan period, some are given less, and some are being newly acknowledged. For instance, environmental aspects have emerged as a vital component of the national development plan. Similarly, the Seventh Plan has included a special chapter on privatization for the first time. On the other hand, infrastructure has always been an important aspect under every development plan. Infrastructure also has continuously received a large share of the development allocation as shown in Table 2. In this sense, we can conclude that infrastructure development is well integrated within Malaysia's national development planning.

Table 2

Ratio of Infrastructure to Total Development Expenditure, 1956 – 2000

Plan	Total	Infra	%
1st Malaya, 1956–60	1.007	0.520	51
2nd Malaya, 1961–65	3.109	1.467	47
1st Malaysia, 1966–70	4.550	1.538	34
2nd Malaysia, 1971–75	11.457	3.121	27
3rd Malaysia, 1976–80	32.075	7.007	21
4th Malaysia, 1981–85	59.669	9.714	16
5th Malaysia, 1986–90	40.075	12.115	30
6th Malaysia, 1991–95	58.500	14.462	25
7th Malaysia, 1996–2000	67.500	19.220	28

There is of course the current fad on private sector involvement. Here, again, the business-friendly stance taken by government has enabled the private sector to play a determining role in the country's development for the long, medium, and short term. And since infrastructure is a key aspect of overall development, by extension we can again conclude that the private sector will assume a major role in infrastructure planning, as well. During the Seventh Plan, out of a total expected investment of RM87.5 billion in infrastructure, excluding oil and gas, the private sector share is estimated to be RM68.3 billion, or 79 per cent, indicating an even more dominant private sector role in the economy.

In the context of our long-term objectives as spelt out in Vision 202, infrastructure development must continue at an accelerated pace to sustain economic growth. The international environment, with the creation of the World Trade Organization, promises greater opportunities through more liberalized trade regimes, intensifying trade globalization. Hence, infrastructure must be adequate, reliable and efficient to ensure the nation's competitive edge. More than that, Malaysia must strive to produce world class infrastructure which will enhance her image and her ability to attract more foreign investment as well as retain that which has already been made. In the end, infrastructure improvements will contribute towards an improved quality of life, consistent with the concept of a caring society. It has been estimated that between 1993 and the year 2000, a total US$1,400 billion will be required for infrastructure development in the ESCAP region. Future infrastructure development must address all these requirements. Malaysia will obviously be contributing substantially to this undertaking.

From now until 2020 Malaysia's economic growth is expected to continue at an average of seven per cent per annum. The population is projected to grow at two per cent per annum reaching 32 million in 2020. To meet the growing population's increasing demand for public services and facilities, and to sustain growth momentum, new infrastructure facilities must be accelerated and expanded continuously, and existing ones upgraded. This must be an on-going exercise if we are to meet the demands for efficiency, reliability, improved delivery and sophistication expected in and befitting a developed country.

The private sector which is more responsive and sensitive to changing needs and environment can play an active role in initiating and introducing new and advanced technologies that will accelerate construction time. Infrastructure facilities, which take time to construct, should no longer be based on demand. Rather, they should be supply driven**.** In other words, new facilities will have to be built even before demand has materialized. This has been the underlying concept for some of the mega projects, such as the Kuala Lumpur International Airport (KLIA) in Sepang and Bakun Hydroelectric Power project in Sarawak, currently undertaken by the government. Toward this end, the East-Coast Highway, a parallel to the North-South Expressway in West Peninsular Malaysia, is in the planning stage although current traffic studies indicate certain stretches are relatively less viable. It has again been left to the ingenuity of the private sector to come up with viable options in non-recourse projects where dependence on cash-flow stream per se is not commercially viable.

Conclusion

The need to provide adequate infrastructure to support economic development has always been recognized. Consequently, the planning process has integrated infrastructure development as an essential component. This integration has assumed an even broader dimension when the private sector in Malaysia has been given a vital role in planning the country's development policies, programs, and projects.

MEXICO CITY AIRPORT

MEXICO CITY AIRPORT

Background

Mexico City's airport was built in the mid 1950s. It was constructed to accommodate the smaller aircraft built at the time. The facility has since adapted to meet the operational demands resulting from increased air traffic and the larger aircraft of today. The international terminal was extended in the early 1990s.

The airport was not constructed according to a defined master plan. As a result, its development and growth have not been orderly and it has never functioned efficiently.

Current Situation

Today, the airport has two parallel runways (330 meters apart) that do not permit simultaneous operations. Only sequential operations can be undertaken.

It has a maximum capacity of 60 operations per hour or 792 operations per day. It handles 16 million passengers and 242,000 operations annually.

Mexico City is one of the busiest airports in the world. However, the facility is reaching saturation level, both in the terminals (and related services) and on the runways. The airport must be improved and made more efficient.

Important decisions must be taken on revamping, upgrading, and restructuring the airport so that it can offer quality service of the highest standard. These decisions will require billions of dollars in investments.

Airport Business Worldwide

For airport managers and owners, both in the public and private sectors, there is no escaping the fact that the airport business is changing. The need to attract more customers, cope with constraints on capacity, and rely on profits to fund the enterprise are today's realities. Past certainties can no longer be taken for granted.

The challenge for today's airports is to provide a better service to passengers, at a lower cost to the airlines. The concerns of environmental groups must also be taken into account.

The Mexican government has decided to involve the private sector in the process of improving the airport. It has considered the possibility of an IPO, as well as a public bid and privatization. The government recognizes that timing is critical and fears that if action is put off, these options may no longer be feasible.

Constraints

In developing the Mexico City airport project, the government has identified the following constraints:

- The challenge to airports is a worldwide reality

- Competition is tough, and increasing all the time, especially in securing the services of international operations: there are only seven or eight serious contenders

- Funds for airport projects are limited and Mexico has to compete with other countries with a higher credit rating

- Federal security is a key element in the decision-making process

- Airports are about politics, economics, ecology, construction, administration, real estate security and financing – all under one roof. Extensive consultation is needed to bring all the parties together.

- Airports are under extraordinary pressure from all sides, but the decisions taken must be based on 100% commitment to the airport business

Airport Project

Based on a conservative estimate of 1.2% annual growth, by the year 2015, Mexico City's airport will need to be able to handle approximately 35 million passengers and close to 400,000 operations a year (90/hr).

The government is considering two options to meet the projected demand:

- Construction of a third runway at the existing facility. This would increase capacity by about 30% to 78 operations per hour (1,029 operations a day; 375,000 operations annually), and

- Construction of a new facility at Texcoco-Caracol with four runways. This would allow for simultaneous operations, and increased capacity to 116 operations an hour (1,531 operations a day; 650,000 annually).

Responsibility for the airport project is envisioned as follows:

Private Sector:

- Construct new runways and terminal facilities

- Operate the airport facilities, except for air traffic control and access roads

- Coordinate private financing
- Improve the overall quality of passenger service.
- Increase the airport's profitability; reverse the current non-aeronautical revenue stream

Government:

- Manage land acquisition
- Develop and enforce regulations governing
    - overall fee structures (must lead to competitive market standards)
    - the definition of current co-investments
    - agreements with labor unions
    - the operations transfer program
    - fueling of aircraft
    - other regulatory issues

SECTORAL INFRASTRUCTURE PLAN OF CHINESE TAIPEI

A PLAN FOR DEVELOPMENT INTO THE NEXT CENTURY AND COMPREHENSIVE DEVELOPMENT PLAN

Prepared by

Chris Hanlon, International Affairs Branch
Environment Canada

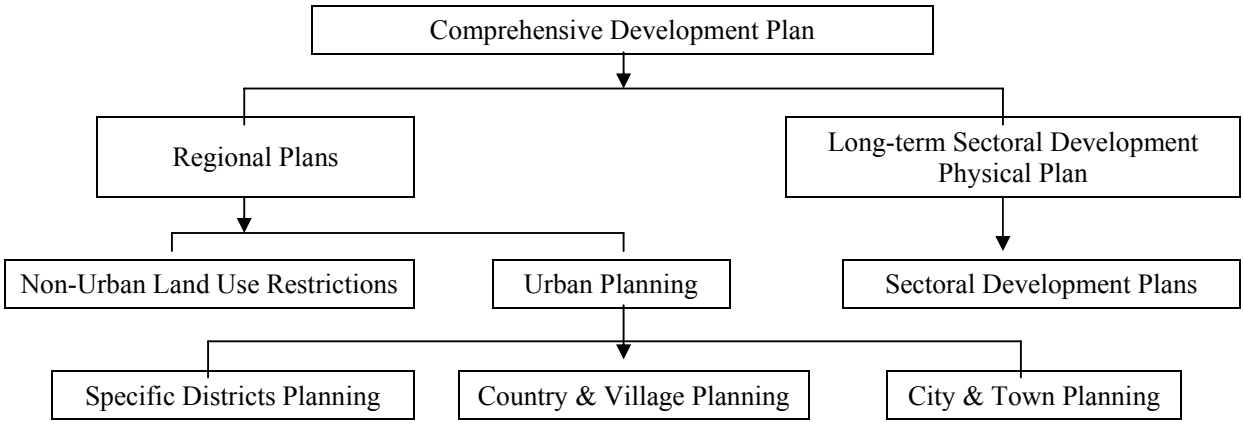
SECTORAL INFRASTRUCTURE PLAN OF CHINESE TAIPEI

A Plan for Development into the Next Century

Development is the lifeblood of the economy and a vital support for economic planning. The 21st century will hold many challenges, such as the need to adjust to change in the domestic industrial structure, to gear up for rapid growth in the Asia-Pacific region, and to respond to intensifying competition in an era of liberalized world trade. To meet these challenges, in January 1995 Chinese Taipei announced an ambitious plan to develop into an Asia-Pacific regional operations center. Drawing impetus from rapid regional growth and capitalizing on her own strategic location and economic strengths, Chinese Taipei plans to make herself a hub for the integration of regional resources and technologies, and further the pursuit of industrial upgrading and sustainable development.

In order to coordinate this plan with other development blueprints within Chinese Taipei, the "Comprehensive Development Plan" (CDP) was launched in November 1996. This plan creates a cohesive system of agencies to maximize the management of land and natural resources, as well as to aid the development of sectoral plans (e.g., transportation, industry, housing, environmental protection, and recreation), that will equitably balance the needs of industry and society in the development of infrastructure, housing, and industry and in the allocation of land, water, and other natural resources. This long-term plan will provide valuable guidelines and goals for future developmental policies. This concept is illustrated in Figure 1. The entire plan is to create an orderly framework within which natural resources, living standards, and production efficiency can all be enhanced while operating within the bounds of sustainable development.

Figure 1: Comprehensive Development Framework



Framework of the Comprehensive Development Plan

The goal of the Comprehensive Development Plan is to most effectively use Chinese Taipei's limited land resources to meet high ecological, living, and productivity standards. It will also guide both the government and the private sector in implementing the physical plans. The fundamental spatial structure of the Comprehensive Development Plan is presented in Table 1.

Table 1: Spatial Structure of CDP

Spatial Structure		Structure Content
International Level		Asia-Pacific Regional Operations Center
Economy Level		Western growth management Eastern strategic development Off-shore islands revitalization
Regional Level		The northern, central, and southern megalopolises
Local Level (20 Living Perimeters)	Metropolitan Living Perimeters	Taipei, Taoyuan, Hsinchu, Taichung, Tainan, Kaohsiung
	General Living Perimeters	Ilan, Keelung, Maioli, Changhua, Nantao, Yunlin, Chiayi, Hsinyin, Pingtung, Taitung, Hualien
	Off-shore Living Perimeters	Penghu, Kinmen, Machu

International Level

Planning to establish Chinese Taipei as an Asia-Pacific Regional Operations Center by:

- Setting up intelligent industrial parks, linking these and conventional industrial parks, and developing as a manufacturing center. By also accelerating the development of high-tech industries, Chinese Taipei will build herself up as an island of science and technology.
- A Sea Transition (transshipment) Center will be established in Kaohsiung and supported by ports in Taichung and Keelung. The port and city of Kaohsiung will be jointly redeveloped following an integrated planning process.
- CKS International Airport will be expanded to serve as an air transportation center. The Taoyuan area will be developed into an Aviation City that provides all support services for the airport.
- A financial center will be developed by liberalizing the movement of capital and promoting the globalization of financial services.
- A telecommunications center will be developed by liberalizing the telecommunications industry and building world-class information networks.
- High-tech media parks will be established to position Chinese Taipei as a media center that has high production capabilities for the television and movie industries.

Economy Level

Changes will be made to the traditional pattern whereby economic activities and development in Chinese Taipei have followed separate courses in the western corridor and along the eastern fringe.

In the western corridor, rapid economic development has resulted in environmental pollution and a deteriorating quality of life emerging as major problems. In the future, economic growth and the quality of the environment will be accorded equal importance. In eastern Chinese Taipei, emphasis will be placed on environmental and ecological protection. In addition to the promotion of tourism in this region, efforts will be made to induce low-polluting industries to relocate there from the west, so that more balanced development may take place.

In the outlying islands, local industries will be assisted to increase job opportunities, and plans will be made to improve water, electricity and telecommunications systems, so that residents may enjoy the same quality of life as those living on the main island of Chinese Taipei.

Regional Level

The western corridor will be developed into three megalopolitan regions. The northern megalopolitan region will include Keelung, Taipei, Taoyuan, Chungli, Hsinchu, and Taofen. The central region will include Fongyuan, Taichung, Chung-Hsing-Hsin-Tsun, Changhua, and Daoliu. The southern region will include Chiayi, Tainan, Kaohsiung, and Pingtung.

To fully develop these megalopolitan regions, the transportation and telecommunications networks interconnecting the urban centers and surrounding development perimeters will be strengthened, to offer residents quick and convenient access to services and facilities. The development emphases of these three megalopolises are listed in Table 2.

Local Level

The planning and construction of "Living Perimeters" will proceed. They will be designed to serve all the daily living needs of their occupants, in terms of employment, housing, recreation, schooling, medical services, shopping, and so on.

Chinese Taipei will be divided into 20 living perimeters, classified into three categories. Six will be metropolitan living perimeters, around Taipei, Taoyuan, Hsinchu, Taichung, Tainan, and Kaohsiung. Eleven will be general living perimeters, around Ilan, Keelung, Miaoli, Changhua, Nantao, Yunlin, Chiayi, Hsinyin, Pingtung, Hualien, and Taitung, and the other three will be the offshore-island living perimeters of Penghu, Kinmen, and Matsu.

Each living perimeter will have its own specific development emphasis. People in each living perimeter may expect to enjoy the same high quality of life, including comfortable homes, easy access to work, rich and diverse recreation, a full range of educational and medical facilities, and rapid and convenient transportation.

Table 2. The Development Emphases of Megalopolises

Megalopolis	Development Emphasis
Northern	1. Development as international gateway and as political and economic center. 2. Development as hub of international and domestic transportation, telecommunications, and tourism ("Triple T"). 3. Development as center for finance, air transportation and transshipment, telecommunications, media, value-added product manufacturing and R&D, corporate administration, and technical support.
Central	1. Development as center of provincial government and of regional administration for the central government. 2. Development as center for training, sea cargo transshipment and distribution, and value-added product manufacturing and R&D. 3. Development as aerospace technology center. 4. Development of production, tourism, and recreational facilities.
Southern	1. Development as port megalopolis. 2. Development as center for sea transportation and distribution , air cargo transshipment, technical support, and telecommunications switching. 3. Development as hub of international and domestic transportation and communications. 4. Development as regional administrative center. 5. Development and promotion of sustainable agricultural production.

Specific Provisions of the CDP

In line with its basic goals and rationale, the CDP first classifies all land into two categories -- either "restricted development area" or "developable area". Classification as a restricted development area is generally based on ecological and natural resources conservation criteria, or on security and defense considerations. In such areas, no use or development will be permitted except for that which is necessary for the protection of the environment or that which is essential for development of the economy and which has passed a strict environmental impact assessment. Each such area will be managed in accordance with a specific district plan drafted by the appropriate designated government agency.

In developable areas, proposed development projects must be submitted through a development permission system for approval. The system includes three separate stages of permission for planning, development, and construction. Provided that all necessary infrastructure is installed and all related fees paid by the developer, land can then be designated for the proposed development. This system enables developers to acquire suitably located land at a reasonable price for residential construction, community development, or commercial and industrial purposes. The benefit to developers is matched by the benefit to the public from the infrastructure that the developer must provide. The overall result is a contribution to the harmony, comfort and modernization of the living environment, enjoyed by the community as a whole.

Mid-Term and Long-Term Infrastructure Demand

Based on statistics from the Public Construction Commission, 273 engineering projects of NT$50 million or more will be under way in 1997. The total expenditure for these projects may be as high as NT$6.33 trillion. During past years, the capital expenditure on public construction projects reached an estimated NT$450 billion in each year 1993 and 1994, NT$510 billion in 1995, and NT$560 billion in 1996. If broken down by sector, the largest investment in 1996 was NT$232.9 billion in transportation and communications, representing 41.5% of the total amount. The second largest was NT$104.5 billion (18.6%) in energy resource development. A full breakdown of total expenditure for 1997 is shown in Figure 2.

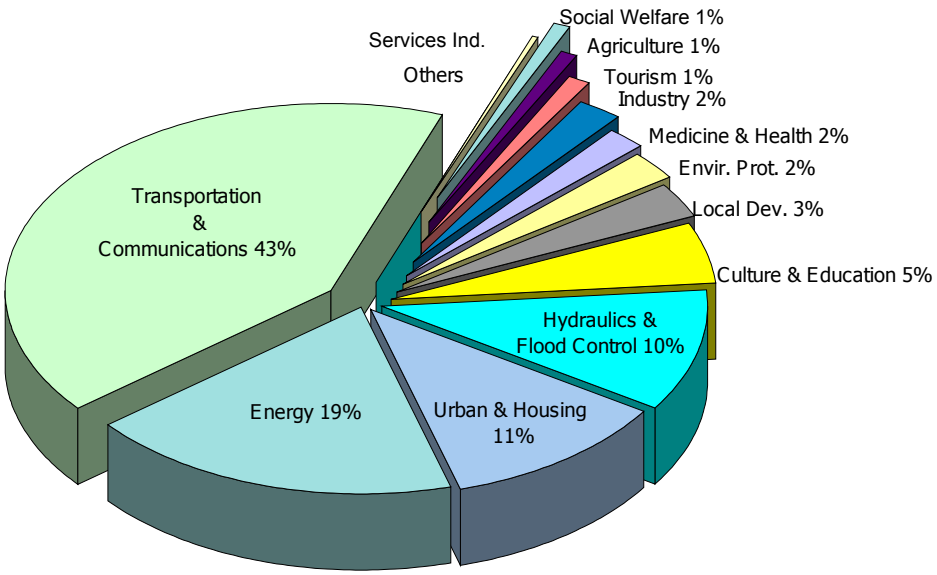


Fig. 2 : Sectoral Shares of Infrastructure Project Expenditure in 1997

It is estimated that the continuation of projects managed by the Public Construction Commission will require mid-term and long-term investment of NT$ 4.7 trillion, with transportation and communications accounting for the largest share (56%), followed by urban development & housing (21%) (see Figure 3).

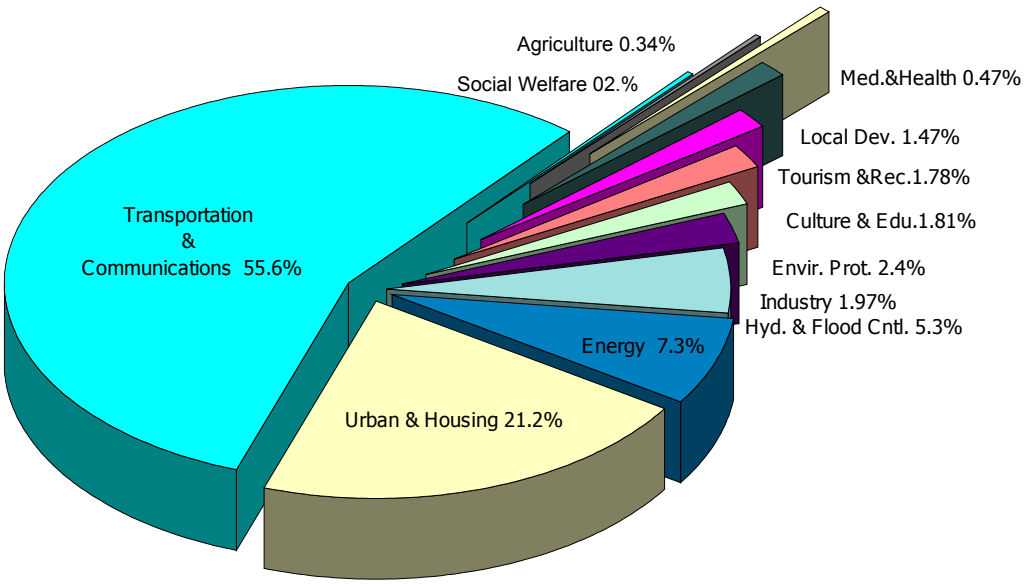


Fig. 3: Costs of Proposed Long-term Infrastructure Projects
(the total budget is estimated at N.T.$ 4.7 trillion)

It is estimated that, over the next decade, the demand for investment capital will be as high as NT$3.8 trillion (see Figure 4). Transportation and communications projects will take the lion's share of NT$ 2.2 trillion (58%), followed by NT$ 0.7 trillion for urban development & housing (18%). The major infrastructure projects include:

Transportation

- The area surrounding CKS International Airport will be developed into an aviation city. Domestic airports will also be improved.
- Kaohsiung Port will be developed into a sea transshipment center, with additional harbor facilities installed.
- Highways will be integrated into an islandwide network, with preference given to construction on a BOT basis.
- The North-South High-Speed Railway will be built on a BOT basis.
- A Rapid Transit System (RTS) will be built to connect CKS International Airport with Taipei. Metropolitan RTS projects in Taipei and Kaohsiung will be accelerated. RTS projects in Taichung, Tainan, Taoyuan, and Hsinchu will be constructed on a BOT basis.

Industry and Energy

- High-tech industrial parks will be developed.
- The Tainan Science Park will be developed, and the third-phase expansion of the Hsinchu Science-based Industrial Park will be carried out.
- Investment in power plants will be opened to the private sector (IPP).

Urban and Housing Development

- Work will be undertaken to balance urban and rural development. Needed infrastructure, such as sewerage systems and parking lots, will be constructed
- New towns will be planned and constructed. Public housing and accommodation for civil servants and teachers will be built.

Environment

- Waste-to-energy incinerators will be planned and built on a BOT or BOO basis.
- Sanitary sewerage systems will be constructed.
- Proper treatment of medical and industrial waste will be strengthened.

Since 1991, infrastructure projects have been largely financed by government bonds. This has resulted in a heavy financial burden on the government and put a constraint on infrastructure development. Effectively utilizing private sector resources in infrastructure construction has therefore become a very important policy issue. It is anticipated that increased participation by the private sector will not only relieve the financial burden on the government, but also lead to improved quality of work and a reduction of construction costs due to the efficient and competitive nature of the private sector.

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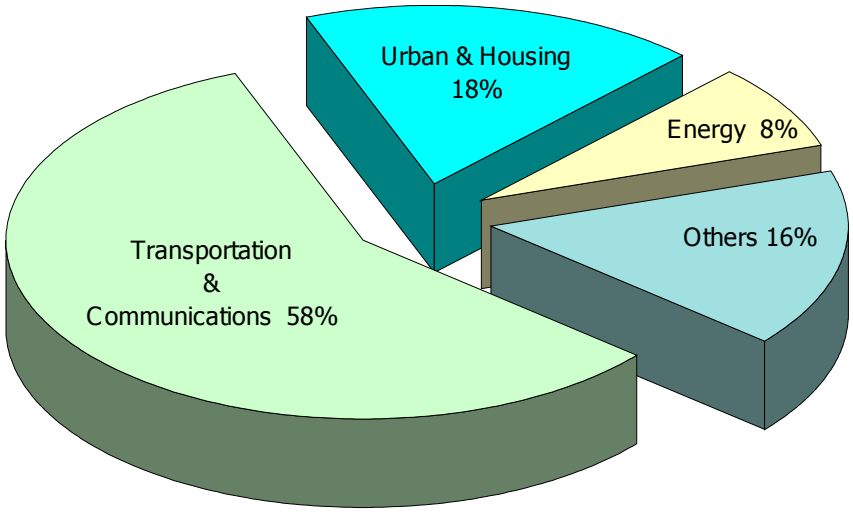

Fig. 4: Budgets of Continuing Projects into the Next decade
(total budget is estimated at N.T.$ 3.8 trillion)

Sectoral Infrastructure Plans:

In the future, improvements to infrastructure will be made through the establishment of living perimeters. Infrastructure projects and social services will be equitably distributed among all the living perimeters. Local resources will be properly utilized to stimulate local economies. Convenient transportation networks will be built to promote ease of travel in all parts, urban and rural, of each living perimeter. This will play an important role in narrowing the development gap between urban and rural areas, and creating a better living environment.

Table 3: Indices of Improvement in the Living Environment

Development Index		1993	2011
Public libraries	number	345	502
	service level (1000 people/library)	61	48
Museums	number	90	144
	service level (1000 people/museum)	233	168
Elementary and high schools	number	3627	4549
	service level (1000 people/school)	5.8	5.3
Piped water	ratio of population served (%)	85.4	94.5
Sewers	ratio of population served (%)	3.4	36.0
Waste treatment	proper treatment ratio (%)	66.5	100.0
Housing	per capita living area (m^2)	26.5	30.0
	per capita room number	1.15	1.30
Parks and green lands	per capita green land area (m^2)	1.81	3.81

Essential facilities within the living perimeters will include roads, mass transit systems, potable water, electricity, sewerage systems, wastewater treatment plants, storm-sewer systems, sanitary landfills, waste-to-energy incinerators, and so on. Social services facilities will include schools, cultural centers, recreational facilities, sanitation, health care, and other related services. The scale and distribution of such facilities will depend on the size, population, and industrial development of each living perimeter. The primary aim will be to put the facilities within easy reach of all residents, to conveniently meet everyone's various needs.

The strengthening of infrastructure to support production will be aimed at complementing Chinese Taipei's development as an Asia-Pacific Regional Operations Center. Substantial airport and harbor construction will be carried out, and passenger and cargo transportation and transshipment centers established. A North-South High-Speed Railway will be built, and highway construction and improvement carried out so that a comprehensive highway network serves all parts of the island. Rapid transit systems will be planned for the northern, central, and southern megalopolitan areas, road systems improved in each living perimeter, and complete information and communications networks developed. The coordination of air, sea, rail, highway, and telecommunications subsystems will form a complete transportation and communications network.

Adequate agricultural land will be maintained for self-sufficiency in rice production. Forestry resources conservation will be strengthened, to preserve land and water and protect the environment. Fisheries will be supported by increased investment in fishing-harbor facilities. The livestock industry will be developed with a view to meeting domestic demand for meat and dairy products.

Industrial zones will be developed in line with changes in the structure of industry and to meet the needs of industrial upgrading. The main lines of development will be as follows:

1. Intelligent industrial parks:

- Science-based industrial parks: in the Hsinchu and Miaoli living perimeters in the north, and in the Tainan living perimeter in the south.
- Science and technology industrial parks: in the Hsinchu, Taichung, Yunlin, Chiayi, Tainan, and Hualien living perimeters.
- Software industrial parks: in the Taipei, Taichung, and Kaohsiung living perimeters.

2. Industrial-commercial integrated zones: to be planned in accordance with the needs of each living perimeter.

3. Primary/Coastal industrial zones: in the Taoyuan, Changhua, Yunlin, Chiayi, and Tainan living perimeters, to be planned for appropriate locations and in accordance with local needs.

Prioritizing land usage: Restrictions on urban land use will be reduced. Large factories and facilities will be encouraged to move out of urban areas, making more urban land available for commercial activities and service industries. Through implementation of the development permission system, the private sector will be encouraged to set up industrial-commercial integrated zones, to participate in infrastructure projects such as the rapid transit systems and the high-speed railway, and to play a part in constructing secondary metropolitan centers to provide more space for development of the commercial and service sectors.

Private Sector Participation in Large-Scale Infrastructure Projects

Traditionally, infrastructure projects undertaken by the private sector were either commercial investments or investments in government related public industries, such as parking lots, housing, and recreational, educational, cultural, and medical facilities. Government policy is now changing to include the private sector in the construction of major infrastructure projects, including transportation and environmental protection facilities. In order to facilitate this change in policy, the government has chosen 22 large scale infrastructure projects which are to be implemented by BOT. The following corresponding regulations have also been passed to lay the legal foundation for private sector participation in infrastructure projects: "Statute for the Encouragement of Private Participation in Transportation Infrastructure Projects", "Statute for Promoting the Upgrading of Industry", "Independent Power Plant Guidelines", and "Waste-to-Energy Incineration Plant BOO/BOT Promotion Program". Table 4 lists the 22 proposed projects and their respective implementation status. The largest projects are as follows:

1. Suao-Taocheng Freeway Construction:
   Total length: 24.4 km. Total investment: NT$ 36 billion. Implementation on a BOT basis.

2. The North-South High-Speed Railway:
   345 km of double-line standard high-speed railroad tracks will be constructed linking Taipei and Kaohsiung. The total investment is estimated at NT$441.9 billion, with less than 40% (NT$180 billion) coming from the private sector. This investment will include mechanical and electrical engineering, rail engineering, station construction, and civil engineering. The public bid was held on October 29, 1996. A committee will follow a two-stage process in selecting qualified companies.

3. Development of Industrial Zones:
   Changbin Industrial Zone: 3,634 ha.
   Yunlin Primary Industrial Zone: 13,568 ha.
   Hopin Cement Zone: 317.33 ha.
   Doliao Industrial Zone Expansion: 148 ha.
   Litze Industrial Zone in Ilan: 329 ha.

4. Industrial Waste Incinerators:
   Construction of a circulation-type incinerator with a daily capacity of 70 tons and a physical-chemical treatment plant with a daily capacity of 200 tons. A total area of 5.5 ha and an investment, inclusive of all accessory facilities, of NT$2.7 billion will be required

5. Mai-liau Industrial Harbor:
   An industrial harbor will be constructed at the Mai-liau reclaimed-land industrial zone, to meet the demands of importing and exporting large amounts of raw materials and products. The total area, including both land and water, will be 577 ha. The primary investment is estimated at NT$9.245 billion, to be raised by the developers.

6. Taichung Shopping Mall:
   The total planned area is 22.74 ha. A high-quality shopping mall with multiple functions, such as wholesale and retail shopping, tourism, recreation, offices, and entertainment will be built. The investment is estimated at NT$10 billion.

7. Yue-Mei Amusement Park:
   The park is planned for the Yue-Mei Farm, located in Holi town, Taichung County, adjacent to Taian Rest Station. It is proposed to cover an area of 198 ha. Following BOT guidelines, the Sugar Corporation will allow the private sector developer to operate the park for 50 years. When that period expires, the land and any development on the land will be returned to the Sugar Corporation. Fan-Ya International Development Co. Ltd. signed the contract in June 1996. Construction will start in June 1997, and the first stage of the project will be completed with the opening of the park in June 1999. The whole project will be completed by June 2003. Using this contract as a reference, total investment is estimated at NT$9.9 billion, to be raised by Fan-Ya Co. Ltd.

8. Independent Power Plants:
   Eleven power plants with a total capacity of 1.013 MTW have been approved by the government.

9. Waste-to-Energy Incineration Plant BOO/BOT Promotion Program:
   Under the initial experimental phase of the program, eight incineration plants with a total capacity of 4,500 T/D have been designated for construction on a BOT or BOO basis. Those at Longtan in Taoyuan, Tonhsiao in Miaoli, Wooje in Taichung, and Nantao City are designated for BOT, while those at Huko in Hsinchu, Changhua County, Daoliu in Yunlin, and Taitung County are designated for BOO. These eight projects are still in the planning stage.

10. Mass Transit System between CKS International Airport & Taipei City:
    A mass transit system with a commuting time of about 40 minutes from CKS International Airport to Taipei City is being planned. The total length of the MTS is estimated at 32~40 km. The bidding for this project took place on October 30, 1996. Initial bids were selected in March 1997. A second round of selections will take place at an appropriate time.

Long-Range Perspective and Prospects

The next three to four years will be of vital importance to the development of Chinese Taipei. Many challenges will be faced on the path to becoming a modern and developed country. We must not only keep up with the changes that are sweeping the globe, but we must coordinate our efforts to ride the crest of modernization. The plans we make today will become the blueprint that will transform Chinese Taipei into an economic leader in the coming century.

Bold, focused leadership will be required. This leadership must not only come from the government; it must also come from the private sector. The competition Chinese Taipei will be facing in the coming years will be fierce. A fair, honest and efficient government that is open to examination will be essential in organizing society to meet this challenge.

In order to achieve our goals of providing our citizens with world class infrastructure and a quality of life comparable to advanced countries, the participation of all elements of society will be required. Industry and commerce will work with social institutions to achieve these ends. Through our development into an Asia-Pacific Regional Operations Center, Chinese Taipei will join the ranks of advanced countries at the dawn of the 21st century.

Table 4: The Current Status of the 22 Infrastructure Projects Selected for BOT Development

Project	Main Content of the Project		Implementation Situation
	Investment (bln NT dlrs)	Construct-ion Period	
1. Suao-Taocheng Freeway Section	36	1998.01.01	Currently being planned. Independent of other sections, BOT can be used
2. Juangli-Daichia Freeway Section	5.8	1999.01.01	Currently being planned. Probably will be financed and constructed by the government in order to meet the schedule for opening of Second Freeway
3. Jurnan-Shihur Freeway Section	14.5		Currently being planned. Probably will be financed and constructed by the government to meet the schedule for opening of Second Freeway
4. Taiwan North-South High-Speed Railway Project	441.9	1990.7-2033.6	Bidding on 10/29/1996. Two companies participated in the bidding process and the result was announced in February 1997. The contract will be finalized by the end of June 1997.
5. Industrial District Development	68.2	1990-2001	50% of the 3643 ha Chang-Bin Industrial Zone has been completed
	300	1994-2116	Four projects -- Mai-Liau, Hsin-Hsing, Hsi-Hu, and Tai-Hsi -- will be developed, with a total area of 13568 ha
	7.2	1990-1998	Urban planning changes to be completed for the Ho-Pin Cement Zone. Of the total area of 317 ha, 50% has been completed to date
	6.7	1991-1997	Tao-Liao Industrial Zone Expansion of 590 ha. In the first stage of development 243 ha will be used by China Engineering Co. Ltd.
	8.5	1993-2000	Li-Je Industrial Zone of 329 ha, under development by China Engineering Co. Ltd. 35% has been completed to date
6. Da-Fa Industrial Waste Incinerator	2.7	1991-1998	Jon-Kon Co. Ltd. has been approved to start the project in 1998.
7. Mai-Liau Industrial Harbor	9.245	1993-1998	Ta-So has been approved to finance and construct the harbor
8. Taichung Shopping Mall	10	1993.1-1998.12	Land use rights for 10.91 ha. redesignated for urban use. Now in contracting process.

9. Yue-Mei Amusement Park	9.9	1991.7-2003.6	Construction will start in June 1997. The first stage of the project will be finished in 1999, and the whole project will be finished in 2003
10. Independent Power Plants	297.8	1997-2002	Eleven companies have been approved to construct plants, with a total capacity of 1.03 MTW. The projects are currently under construction
11. Waste-To-Energy Incineration Plant BOO/BOT Promotion Program	20	1996-2019	Eight demonstration plants with a total capacity of 4,500 T/D have been chosen. Planning will start in June 1997 after review by local councils.
12. Tankang Bridge and Access Road	5.1-24.6		Currently being planned.
13. Taichung and Tainan Underground Railway Station Terminal			Currently being planned.
14. Hsin-chu and Jia-I Railway Station Building			Awaiting start of construction
15. Tamshui Domestic Commercial Harbor	27.5	2000-2015	The EIA was completed on 1/28/1997
16. Ma-Ling-Kang Container Freight Station	(6.94)		The EIA cannot be completeded due to inappropriate location. Referred to Provincial Government for cancellation.
17. MTS Between CKS Airport & Taipei City	57-78	1996-2032	Bid results were announced on 10/30/1996. Since the results for requirement bids were announced in March 1997, the second stage of bidding has proceeded as planned
18. Joint Development of Kaohsiung MRT Station R9 with Central Park Underground Mall	1.4-2.1	1996-2002	Currently being planned
19. Kaohsiung City Northern District Incineration Plant			Canceled
20. Parking Tower on Chiu-Ju Rd and Wo-Lung Rd	(0.85)		Canceled because unable to comply with current regulations.
21. Chien-Chen No. 4 Parking Lot	0.81		Open to applications and bids.
22. Chien-Chen No. 7 Parking Lot	0.53	1997	Has been approved by the Interior Ministry. Construction can be started once the constructor pays the assurance fee.