Session Report:

URBAN DEVELOPMENT

Chairperson: Shigeru MORICHI (University of Tokyo, Japan)
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Prof. Shigeru Morichi

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Urban Development in Japan
by Prof. Takeshi Kurokawa (Tokyo Institute of Technology, Japan)
Transportation Development in Metro Manila
by Prof. Primitivo C. Cal (University of the Philippines, Philippines)
A New Paradigm for the Development of Seoul Metropolitan Region
by Prof. Kun-Hyuck Ahn (Seoul National University, Korea)
Urban Infrastructure Development in Singapore
by Prof. Tien Fang Fwa (National University of Singapore, Singapore)
Urban Growth Management in Asian Megacities
by Dr. Shizuo Iwata (ALMEC Corporation, Japan)

Prof. Takeshi Kurokawa

Prof. Primitivo C. Cal

Prof. Kun-Hyuck Ahn

Prof. Tien Fang Fwa

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1. Summary

This summary outlines the key themes from the five papers given in this session on Urban Development within the theme of Infrastructure and Innovative Technology. The five papers were complementary as they included historical perspectives on successful approaches to managing urban development, identification of current trends from across the region, and some specific challenges caused by rapid urban growth in Seoul and Manila.

The papers by Prof. Kurokawa and Prof. Fwa (delivered by Dr. Nishioka by proxy) described approaches to management of urban planning and urban growth in Japan and Singapore respectively. Covering a period of decades, they described the important policy and planning steps that have led to relatively smooth accommodation of urban expansion in their countries.

The clearest lessons from Japan and Singapore seem to be the need for visionary long-term strategic plans and the development of infrastructure ahead of demand. Mass transit infrastructure, in particular, could be used to guide the spatial pattern of urban expansion, not only to provide a good quality living environment, but to support a strategic approach to economic development. The satellite development of high-rise public housing in Singapore gave resonance to Prof. Ahn's case for "New Town" development to overcome an impending housing shortage in metropolitan Seoul.

Sometimes, theoretical ideals just cannot be followed as closely as we would like. In the developing countries of our Region, the sobering facts of economic reality force compromise strategies to be followed, as Prof. Cal demonstrated for metropolitan Manila. Whilst a highly strategic approach to the management of sustainable urban growth may be the aim, the final form of the strategies must be shaped not only by what is desirable, but also by what is possible. This is perhaps the greatest challenge in innovation facing planners and engineers in our region today; how well can we make the possible resemble the ideal?

2. Presentation Highlights

We saw in Prof. Kurokawa's presentation and Prof. Fwa's paper that Japan and Singapore achieved some similar outcomes to urban growth management, albeit with some differences in the approach and at greatly different scales. One very clear similarity was that both embraced strong centralized planning. Japan followed a policy of concentrated public investment following WWII to stimulate and support private investment for industrial and economic growth. Expressways and the Shinkansen were key infrastructure investments. Since this caused geographic concentration of economic growth, subsequent investment policies sought to correct the regional disparities leading to distribution of the manufacturing sector throughout the country. Development of a national transport network was again critical. The urban growth that followed industrialization was characterized in Japan by private

development of railways ahead of urban development along the railway. So, in a sense, we saw that the most distinctive aspect of the Japanese approach to urban growth has been its close tie to industrial development, and that both were underpinned by strategic development of transport infrastructure by both government and the private sector.

Singapore's approach has been even more centrally directed than that of Japan. It has followed successive master plans for managing urban growth that have involved greater direct government implementation than almost anywhere. Successful decentralization was achieved through the creation of publicly funded high-rise satellite estates supported by expressways and a rapid transit rail system. Guiding much of this change was, and continues to be, Singapore's pursuit of segregation of major land uses; the central business area for commerce, satellite residential suburbs, and specific areas for industry. Recent land use initiatives include land intensification to accommodate growth in the "new" information technology economy, and massive land reclamation to accommodate heavy industry. Singapore has also been thorough in its approach, as demonstrated by the 1992 Singapore Green Plan, its considerable past investment in environmental infrastructure, and the current initiative to completely replace the city's sewerage system.

Prof. Ahn and Prof. Cal spoke of specific urban growth issues confronting metropolitan Seoul and Metro Manila respectively. Both cities have very large and growing populations. Seoul faces a housing shortage and associated urban congestion whilst Manila faces a transportation crisis.

Prof. Ahn presented a convincing case for the development of large-scale, publicly supported "newtown" developments supported by a new, efficient mass transport system. This proposal would seem to have strong parallels with the Singapore approach to population relocation. As Prof. Ahn argued, and Singapore seems to have demonstrated, successful decentralization can only be achieved when conducted at a large enough scale through direct government investment to provide both housing and social and urban amenities. By simply using land use zoning and allowing private sector development we can stimulate housing, but this does not guarantee the provision of necessary transport or social infrastructure.

Prof. Cal discussed how the rapid rate of increase in car ownership in Metro Manila had already created heavy traffic congestion that was only projected to deteriorate into a major transport disaster without major infrastructure investment. The ideal plan involved construction of primary and secondary arterial roads, expressways and a rail mass transit system, totaling an estimated US$30 billion. With this well beyond that which could be supported, it was shown that alternative strategies would need to be followed including car travel demand management, encouragement of private investment in transport infrastructure, and substantial government intervention to effect decentralization and greater sharing of

population growth with other growth centers.

3. Conclusion

Through these discussions we can see the relationship between the different stages of economic growth and social infrastructure and its effect on urban development. Inadequate social infrastructure commonly causes constraints to economic growth because economic acceleration in major utilized areas, especially urban areas, always leads to over-concentration of population and transportation. These cause problems such as housing shortage, traffic congestion and environmental problems. Investment in social infrastructure promotes economic growth, but, on the other hand, it can also stimulate inflation and financial problems for government. So we cannot always expect as much investment as may be necessary to address these aspects of urban development.

With this understanding, we can take two approaches. The first approach is to take a nation-wide perspective. Urban problems in large metropolitan areas cannot be solved through a single solution because of the complicated relationships between different urban areas, and also because budget constraints limit the effectiveness of what can be attempted. The second approach is to adopt new technical measures using information technologies such as ALS, ITS and telecommuting.

We, as civil engineers, take a giant role in developing social infrastructure to decentralize metropolitan areas as contributors to long-term policy. Each of us can only take a small part of projects and policy development, but collaboration between individuals and organizations in each sector can contribute much to the development of solutions to these kinds of issues.

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