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Integrating Information System/Information Technology In Regional Development Planning In Malaysia:
A Quick Review

By

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Integrating Information System/Information Technology in Regional Development Planning in Malaysia: A Quick Review

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I. Introduction

It is the objective of this short paper to highlight the state of the art in integrating information system (IS)/information technology (IT) in regional economic development planning (RDP) in Malaysia. This paper is not intended to provide a rigorous analysis of the current state of affairs, and neither is it intended to give a comprehensive review of the current state of the art. It does highlight some of the major issues, constraints and deficiencies of the current situation surrounding the efforts at integrating IS/IT in RDP in Malaysia and suggest some measures to improve the integration effort.

1. This is a Note prepared for the Expert Group Meeting on Integrating IS/IT in Local/Regional Development Planning, sponsored by UNCRD and AMIC, in Singapore, October 31-November 5, 1988.

2. The writer is the Director, Regional Economic Section, The Economic Planning Unit, Prime Minister's Department, Kuala Lumpur, Malaysia.
II. The Context for IS/IT in Malaysia

2.1. The principal focus of development policy in Malaysia since the 1960s, given the resource endowment and ethnic diversities, was initially to strive for a high rate of economic growth and later for equitable distribution of the benefits of growth. Actions were taken to diversify the economic base, increase exports in order to generate sufficient foreign exchange and export surplus to further accelerate the growth process. Simultaneously, heavy investment in socio-economic infrastructure facilities particularly in the rural sector, was initiated to modernize the rural agricultural sector, to facilitate access to markets and to intensify the exploitation of the varied natural resources available for growth.

2.2. The economic development strategies adopted prior to the 1970s succeeded in accelerating the growth process but the success appeared to be distributionally inequitable viewed from the perspective of the actual sharing of the growth cake ethnically and spatially. So, beginning with the Second Malaysia Plan (1971-75), the New Economic Policy (NEP), which is a redistributive policy, was launched. The focus then was on growth with equity. Accordingly the role of the government, and consequently the size of the public sector, increased. During the 1985-86 recession, the Government again reevaluated the policy and took a second look at the
strategies and subsequently adopted a policy of growth with stability in the Fifth Malaysia Plan (FMP) (1986-90) to counter the recession and steer the country out of the recession.

2.3. The shift in orientation and emphasis of the core policy is reflected in the focus for IS/IT in the planning process. The priority accorded to regional economic development is still high despite the reorientation of policy focus. In Malaysia the end objective of RDP is correcting disparities in income and economic opportunities open to the people - ethnically and spatially - so that a united, prosperous and stable Malaysian society in which everyone would equitably benefit from the growth process could be created. It is the primary task of the IS/IT to provide the data and information, quantitatively and qualitatively, on the state of affairs surrounding the economy, particularly in terms of growth and its impact on equity and how best could any possible trade-off be minimized.

III. A Review of Existing Statistical Activities

3.1. Regional planning and regional project identification at levels of Government below the national level have been hampered by the difficulty in obtaining resources and socio-economic data sufficiently disaggregated for planning purposes. The data needs cover a wide area ranging over
general socio-economic and physical planning aggregates to more specific sectoral and regional informations. The IS should also be current, adequately disaggregated and as reliable as possible. The approach for the type of IS/IT suitable for RDP is to concentrate on a minimum collection for planning requirements, selecting the best sources for each area, and then to improve the reliability and usefulness of these sources. Some relevant data are made available by the Department of Statistics (DOS). Other sources are partial, frequently outdated and insufficiently disaggregated. Hence, further disaggregation, updating and validation are necessary before any rigorous analysis could be done.

3.2. The Economic Planning Unit (EPU) regularly provides projections of the States gross domestic product (GDP) (supply side projection) by disaggregating national macro aggregates employing some trend analyses using production data by sectors as well as proxies to disaggregate the macro figures. The EPU also, with the assistance and data back-up of the DOS, provides projections on population, employment (and unemployment), and labour force by States. These projections are used by the State\(^3\) (SEPUs) for macro-planning at the State level. For the purpose of sectoral and regional planning at the State level, information is required on regional income,

\[^3\] SEPUs = State Economic Planning Units. The SEPUs are expected to effectively play the role of State level macro-planners to complement the EPU. They are also expected to support regional planning functions of the EPU.
commodity flows, and sources of inputs to enable programmes and projects to be formulated effectively to diversify the local economy and plan sectoral development. This demands a much more elaborate IS with data sufficiently disaggregated and detailed than currently available.

3.3. Besides the DOS which is responsible for providing an efficient IS and making use of the most updated IT for the Government, statistical activity has proliferated and is now diversified. Practically all Government departments, statutory bodies and agencies have over the years developed their own mechanism and created their own machinery for data collection based on varied concept, definitions and methodologies. This situation arose because the DOS was not able to meet the IS needs of other user organizations which need to monitor progress towards attaining some stated organizational goals and as well as for surveillance of compliance of policies assigned to them. This is a major preoccupation of agencies assigned the function of implementing the NEP and regionally oriented programmes and projects.

3.4. The bulk of the required information relates to monitoring and evaluating the attainment of NEP goals and targets, translated spatially in terms of correcting regional imbalances in development and bridging the growth and benefit gaps between the urban and rural sectors as well as between ethnic groups. Thus equity related data requirements lead to
various agencies creating their own data bases in particular direction or focus. The very diversity and breadth of demands for data, accompanied by a pre-occupation for a high degree of statistical refinement leads to a situation where the IS, created by the DOS, is rendered in capable of producing data in volume, quality, timeliness and reliability expected of them. At the same time, because of the proliferation, problems of consistency and comparability accordingly increased.

3.5. Presently, adequate IS/IT has been created for the purpose of macro-economic analysis, monitoring and evaluating distributional policies across ethnic groups as well as for macro modelling. Deficiencies nevertheless exist for a reasonably disaggregated data for a more reliable sub-national, sectoral and regional macro-economic analysis, analysis of spatial impacts of distributional policies, strategies and programme and regional modelling. Given the limitations on resources and the need to control proliferation of such statistical activities and in order that some forms of data/information should nevertheless be collected for some purposes or other, existing IS/IT still need improvement. Priority will have to be given first to strengthening work on macro-economic and policy planning at the regional/state level, and second, analytical work required to service those charged with NEP monitoring and policy planning. The IS/IT should nonetheless be adjusted so that data could be
disaggregated sufficiently to cater for regional data needs for policy analysis, monitoring and evaluation. The EPU is now seriously considering the feasibility and efficacy of strengthening regional IS/IT for a more effective decentralized planning of socio-economic policy and programmes.

3.6. The proliferation of data collection, and its attendant implications, gives rise to three major problems. Firstly, given the varied and heterogeneous purposes for which data are collected, the different standards, concepts, and definitions employed have resulted in data of variable quality and further created problems of consistency, reliability and general utility. Second, there is a wealth of physical and socio-economic data available for analysing the spatial impacts of policies, strategies and programmes as well as evaluating sectoral performance by regions and states. But, these data are not systematically documented, updated and disseminated for other likely/potential users. Third, related to the documentation issue, existing data bases are both partial and fragmentary, since they are collected for a specific topic or specific objective and not for general use. At times, the urgency for such data demands some makeshift procedures and methodologies putting into question issues of reliability, validation and comparability.
3.7. The demand for data to plan policy, strategy and programme and the need for data to assist efforts at policy analysis and evaluation have expanded tremendously. Consequently, the DOS has not been able to meet the varied demand made by other user agencies, particularly those assigned the responsibilities of implementing NEP programmes in general and regional development in particular. The result is that many agencies take upon themselves the task of creating and maintaining their own IS with varying IT back-up. In order to minimize duplication and wastages of resources devoted to IS/IT and as well as to maximize the usefulness of existing IS the following measures were recommended by the World Bank (WB)⁴.

(a) some responsibility of the DOS for primary data collection, file creation, processing etc may be devolved to other agencies,

(b) the coverage and frequency of surveys should be reduced by the DOS,

(c) for the purpose of monitoring and analysing developments, follow up actions on certain censuses/surveys need not be done,

⁴ See The Statistical System in Malaysia, Malaysia/World Bank; May 1984, p. 28
(d) data editing and validation procedures should be simplified to save time and resources; and

(e) a major review of the computer systems, IT requirements and data base maintenance system is needed to promote efficiency in data collection, processing, storage, and retrieval and analysis.

At the same time the WB Study indicated the need to upgrade the capacity and capability of the DOS and other agencies in IS/IT for macro-economic framework and to effectively coordinate and integrate data gathering functions of other public agencies.

3.8. Besides the availability of adequately disaggregated data for a RDP, effective RDP necessitated enhanced capability in data analysis. At the moment, the DOS and other data collecting organizations played only a limited role by providing preliminary analysis. Intensive and sophisticated analysis depend on the end use for the IS and the level of IT available. Analytical capability is found inadequate, especially considering the variety of data available in the myriads of files in data collecting agencies other than the DOS. One suggestion for improving data analytical capability, besides training, is dissemination of data for analysis by
other non-government users. One advantage of this is that unbiased interpretation of, and analysis on a different focus or perspective is possible.

IV. Maintaining an Efficient IS/IT for RDP

4.1. To improve the functioning of the statistical apparatus in Malaysia some proposals have been considered. In this context, there are two ways by which the required sets of data can be produced. First, tailor-made surveys may be carried out to acquire the necessary data for the type of IS deemed appropriate for RDP, and second, to derive the data by some process of approximation and obtain the data from existing data sources given the IS and IT, or modify the IS/IT such that existing data sources may be used to derive the data. For RDP in the Malaysian context, the second alternative is more cost-efficient since existing data sources are amenable to modifications or upgrading for more intensive and extensive use.

4.2. In order to ensure the effectiveness of the second alternative, it would be necessary to develop skills in synthesizing analyses from one or more surveys originally conducted for alternative purposes. The ability to develop separate estimates of the same concept, or obtain consistent estimates of similar ones, and thereby valid and useful analyses could be produced from data that seem at first sight
inappropriate or of poor quality an enhanced analytic capability is essential. If IS/IT were to depend on tailor-made surveys, data collection would be costly and the only feasible may to make it cost-effective is to design multi-purpose surveys whose results would take time to come out. The second alternative has the advantage of utilizing to the maximum existing IS/IT for RDP since considerable amount of relevant informations are available.

4.3. How good an IS is and what relevant IT is needed depend crucially on data uses which in turn are heavily dependent on whatever analytic capability available in any organization. This is true for RDP since the capacity and capability of agencies (eg. SEPU's) in RDP is far inferior to that of DOS and EPU. Data and analysis have close interaction. Implications and limitations of particular data sets intimately depend on how well the IS/IT answers a pertinent question or serve a specific objective. This necessitates enhanced analytic skills among users, especially among regional analysts and planners. Aside from documentation and dissemination of source materials, the analysts should be aware of the full spectrum of data available for RDP, understand the nature of data sources, as well as the basic characteristics of alternative statistical methodologies used in collection. Training is also needed in statistical methods, econometric techniques and the use of standard computer softwares. An effective integration of
IS/IT in RDP requires fostering the tradition of data analysis capabilities with local research institutions for the development of independent, authoritative analysis of public issues and policy concerns pertinent for RDP.

V. Early Thoughts on Upgrading the IS/IT for RDP

5.1. Coordinating Statistical Activities. The main consideration that must be borne in mind in any effort at upgrading the IS/IT for planning is that data collection, tabulation and analysis of results are all expensive activities. This is even more so if the IS/IT is intended to effectively serve RDP, the cost implications are enormous. But such statistical activities are essential not only to the formulation of overall policy and evaluation of policy objectives, strategies and programmes, but also to the effective functioning of all agencies responsible for implementing RD programmes and projects. These agencies which collect data for administrative purposes, are well-placed to engage in other, more broadly conceived, primary data collection activities. This built-in comparative advantages have to be fully and effectively exploited to upgrade the IS/IT. In order to create an integrated information base capable of producing adequate professional standards of statistical works, avoid wastage and confusion an effective coordination is vital. Coordination will ensure that proper standards and procedures are used, the data serve the best
needs of all governments, and documentation, access to, and dissemination of data are adequate and efficient.

5.2. **Upgrading the Role of DOS.** To effect a balance between central coordination based on statistical expertise (IT) and the collective interests of the Government, and the comparative advantages of decentralized IS, professionalism in IS/IT is necessary. The cooperation and rapport of the DOS vis-a-vis all agencies in IS/IT are of primary importance. The DOS should provide professional expertise in IS/IT so that the national statistical system can be upgraded and resource wastages are minimized and simultaneously establish an effective and efficient IS/IT for macro-economic analysis at national and regional level. The Government is now consistently doing its best to implement the menu of proposals prepared by the WB to upgrade the IS/IT. The role of other agencies involved in statistical activities is being reviewed and efforts directed at enhancing their role are underway.

5.3. **Dissemination of Statistical Information.** Given the array of statistical information available, the documentation of these data, especially those collected outside the DOS, is typically inadequate, and at times non-existent. Most agencies are not aware of what are available and where to obtain them. Hence, to upgrade IS/IT, the first task would be to document what exists and where to enquire for such and such information. Next, more important, is to upgrade to
professional standards the documentation of sources and methods for major data sets, and to publicise arrangements for enquiries. Here lies one of the major and intricate problems, the prevalence of departmental/organizational misunderstandings concerning exchange of, and access to, information. The Statistical Act of 1965 restrains the DOS to divulge information. The fact that risk aversion prevailed because of the unwanted consequences of indiscriminate dissemination of informations by the presence of the Official Secret Act of 1979, etc. the free flow of information for analysis by others is prevented.

5.4. Information withholding is a major obstacle to creating an effective and efficient IS/IT. This is particularly damaging when the analytical capacity and capability of government organizations are limited. Documentation and dissemination of statistical data are vital in any effort to upgrade the IS/IT, particularly if the IS/IT were to serve well RDP. Aside from the priority given to documentation, clearance and dissemination of data, there is the pressing need to coordinate, rationalize and develop statistical activity across government.

VI. Conclusion

6.1. The official statistical system in Malaysia should be able to serve government needs firstly, for a basis for policy
formulation; secondly, to facilitate effective monitoring and evaluation of policy impacts; and thirdly, to model the economy and simulate the likely effects of policy instruments and variables. An efficient IS, suitably supported by reliable and effective IT, is necessary to maximize the contribution of public sector agencies and programmes in the growth process and realign the private sector participation in generating and promoting growth. In the Malaysian context this is even more important given the political realities of the country and the need to strike an efficient balance between optimal national economic growth and the attainment of equitable ethnic and spatial balance in distribution of growth benefits.

6.2. There are inherent limitations in existing IS/IT considered in the light of the demands for information and the need to decentralize decision-making in formulating plan, as well as monitoring and evaluating strategies and programmes. Prospects are good for utilizing existing IS/IT for a more comprehensive and integrated use of the large array of data now available in many organizations to better supplement the possible deficiencies of the DOS and assist regional planning. At the same time a closer rapport between the EPU and SEPU, between the DOS and other data collecting agencies could be created so that an integrated IS/IT could be developed.
6.3. Even though there are a variety of sources of data for macro-economic analysis, projection and model building as well as for evaluating impacts of policies, strategies and socio-economic programmes on the assumption that substantial improvements of existing IS/IT are possible, adequate disaggregated data for regional macro-economic analyses of various sorts are still not consistently available. Much more need to be done to enhance IS/IT role in RDP and more so if IS/IT is to be integrated in RDP. This need is urgent in Malaysia because a detailed spatial impact evaluation of all policies, strategies and programmes is needed. One clear example of the pressing need for an efficient IS/IT is to resolve the problem of by-passed areas and poverty pockets despite the intensified and widespread poverty eradication programmes implemented since Independence.

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Reference


4. Malaysia/ADB; The Urban Sector Profile Study, 1986
