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FUTUROLOGY AND PUBLIC
SYSTEMS ANALYSIS:
A MAJOR SOCIAL NEED

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ABSTRACT (within 250 words)

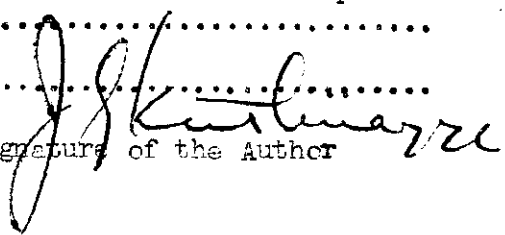
The rate of social and technological change is overtaking our problem-solving capability.

There is urgent social need for institutions which will more effectively work on the analysis of public policy and design of public systems along with surveys of the alternative futures which may befall us.

Can such Rand-type institutions be created in India? The success of state, federal and local governments in outpacing change may depend upon it.

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FUTUROLOGY AND PUBLIC SYSTEMS ANALYSIS:
A MAJOR SOCIAL NEED

J. G. Krishnayya

Alvin Toffler's book "Future Shock" has made many readers aware of the rate of social & technological change that is overtaking the world. Today even India has a national Panel on Futurology. Various projections have been made by some researchers of India in the year 2000. For the state of Tamil Nadu, for instance, one of these predicted that by 2000 AD one in every three families would have a motor car. May be. My purpose in this essay is to point to the urgent social need for institutions which will effectively work on the analysis of public policy and design of public systems along with surveys of the alternative futures which may befall us.

The Indian intelligentsia may be timid in some matters, but it has never shrunk from the establishment of new research institutions. Thus, a brief glance at the Ahmedabad telephone directory reveals the Institute for Cooperative Management, the Gujarat Institute for Area Planning, The Sardar Patel Institute of Economic & Social Research, all new since 1968, alongside such venerable bodies as the IIMA and the University. In other capital cities throughout India there are Social Institutes and Economics Institutes and Political Science Institutes, all doing research on the problems of growth, economic development and social change. A sympathetic review of their work would find a lot of solid data on the way things are (or were) and some analyses and judgments on who is benefitting how much, and why. A critical review on the other hand, might assess the facts and framework as static and past-oriented and the reports as reflecting a judicial and "outsider-critic" posture rather than that of a participant who faces all the constraints of the real-world situation.

Have these institutions, has this economic and social and political research had an influence on public policy in India? Surely it has had some influence (for example Dandekar & Rath's report, in focussing attention on poverty in India). But has it had influence in the sense of bringing about policy A as against policy B? After an exhaustive study of social science research in India over the past two decades, the economist Raj Krishna, at least, has come to the conclusion that the influence has been marginal.*

Characteristics of Effective Institutions

On the other hand, there have been institutions abroad, conducting what might appear to be similar research, which are generally accepted to have had a significant effect upon public policy. These are the Rand Corporation, the Institute for Defence Analyses, the Urban Institute, and Resources for the Future in the USA and such organizations as the Weizmann Institute in Israel, the Nomura Institute in Japan, the International Institute for the Management of Technology in Italy, the Institute of Development Studies, the Science Policy Research Unit and the Institute for Operational Research (Tavistock Institute) in UK. What is it about these organizations that distinguishes them? One analyst** calls them a 'social invention', which happened in order to provide analytic assistance to government agencies in the resolution of public policy issues. They have certain other common characteristics: They are independent of government though concerned for policy issues; they are non-profit by charter; they are not primarily educational in purpose; they have a broad study charter; they are multidisciplinary in staff; they are future-oriented; they use a systems approach; they develop and maintain long term relations with one or more agencies of government.

* Raj Krishna: Economic Research in India, Paper for the 1974 Bellagio Conference on Social Science Research, Feb 1974.

**Roger E Levien "Independent Public Policy Analysis Organisations-- A Major Social Invention. Rand P-4231, 1971.

These characteristics do also fit to a large extent some existing institutions in India, most notably the Centre for Management in Agriculture (CMA) at IIMA and the National Council for Applied Economic Research (NCAER) in Delhi. What then is missing? In this observer's view, the two missing elements relate to objective and methodology: The objective in most current research is analysis, whereas it needs to be design, in which analysis, or understanding, is an important step. When systems design is the objective, an intricate merging of insights and methods from several contributing disciplines - true interdisciplinary work is needed; it is not enough for each discipline specialist to view the problem from his own point of view and then to loosely stitch together the resultant appreciations, to produce what we might call multidisciplinary research and analysis. Yet another important process variable is self consciousness about the need for continual refinement and improvement of methodology. "In the land of the blind, the one-eyed man is king" goes the adage, spelling out the trap that lurks before innovating organizations. (But there is no complacency at the Rand Corporation. There every report is critiqued in writing by two analysts outside the research team before it is approved for publication, and completed analyses are regularly restudied in internal professional development seminars.)

Type of Systems Analysis needed

We have only to think of the doubling of India's population in the next thirty years to raise a host of issues requiring both analysis and systems design. These relate not only to resources and allocations, but even to the means of transport and communication and distribution and also to community structures. It is likely that the technology needed for maintaining essential services, including food and housing will interact in new ways with the patterns of life traditional to India.

During this period of rapid social change, all levels of government require to use a systems design capability because of the many new agencies to be created and new communication and information systems to be built. In the past, the initial design of new systems was not so crucial because they had time to evolve as new needs developed. The present rate of social change, however, requires that newly designed systems be capable of responding faster and more effectively to changes in the environment.

Government needs new sources of assistance in achieving these tasks. But the conventional institutions - government itself, private industry, even Universities and similar teaching bodies - are handicapped in various ways, as we shall see.

Today many agencies of government believe in creating their own in-house analysis group or 'think tank'. These are very useful, yet they cannot take the place of agencies outside of government. Firstly, in most government agencies it would be impossible to bring together the critical mass of people needed to provide a proper mix of skills. Secondly, offices in government rarely can be independent or flexible enough to develop new approaches to big issues. Thirdly, studies within government must always focus on the immediate problem, usually on a crash basis.

Management, engineering and accounting consulting firms are also a possibility. However the type of task-contract through which their services can be purchased is unsuitable where often the first task is to define the problem. This type of advice requires an extensive knowledge of the agency and its activities which in turn requires a continuous close relationship between the analysts and agency. However, the firm must also deploy its manpower wherever profitable opportunities arise. These considerations would reduce the suitability of profit-making consulting firms to provide policy analyses & systems designs to government.

Can Universities fill the need?

Universities are another possible source. Indeed departments of social science in many universities as well as autonomous bodies like the IITs and IIMs have accepted grants or contracts to work on issues related to public policy. Many professors serve as governmental advisers. Yet Universities do have a primary commitment to teaching and disciplinary research, and this conflicts with major requirements for assistance in government where issues are often technically unsophisticated and problem-related. Firstly, teaching institutions are not equipped to undertake long-term operational activities. Secondly, while faculty and students are anxious to perform activities that meet their own research and training interests, they rightly resist taking responsibility for day-to-day operations in a government agency. There are other problems, too, related to staffing and the incentive system. Public systems analysis requires not only faculty and student effort but also full time, operationally - oriented professional staff without faculty positions. At most Universities such persons feel like second class citizens. The experience at the IIMA with the specialist staff of the Agriculture Cooperatives Group and the Banking Studies Group is germane.

In addition, the techniques appropriate and useful in public systems analysis may be less formal than those appropriate to the academic literature. The results of policy analyses may not be published, or may be read only by government officials, not academics. Sometimes a separate institution is set up at a University to house the full time professional analysts. However, such bodies as MIT's Instrumentation Laboratory or Stanford Research Institute are no more than in name part of the University. Finally, the University faces the difficulty of providing the continuity of personal contact so essential to building trust and generating influence in government. Though average faculty turnover in India is low by Western standards, it is lowest in departments which do no outside work, and higher where professors involve themselves with applied research.

Faculty members must seek achievement and recognition in their discipline; committing long periods of time to interdisciplinary team work that is problem-centred will adversely affect their career prospects.

It is recognition of these disabilities of the conventional institutions which has led to the creation in so many countries abroad of the nonprofit, policy oriented, public systems analysts organisation. The incentive structure of these organisations is designed to encourage and reward work according to its relevance to policy-makers. As non profit organisations, their objective can be the public interest, without offending constituencies such as shareholders, faculty, students or alumni. With single-minded attention they can develop the long term close relations with government agencies leading to trust and influence, which in turn enables them to choose topics from within a broad study charter which is oriented to anticipating future problems. Unlike a management, engineering or accounting consultancy, they are not characterised by cashing in on the current problems of government, but on working to avert future systemic difficulties. Here especially, their commitment to interdisciplinary research is matched by their ability to develop their staffing and incentive system accordingly.

Can such Rand-type institutions be created in India? The success of state, federal and local governments in outpacing change may depend upon it. As the first group of persons whose training provides a multidisciplinary capability, the faculty & graduates of the management institutes will play an important role in the design and building of such organisations.

Related Readings

Averch, H.A. A Crisis of Ambiguity: Political and Economic Development in the Philippines, Rand Report R-473-AID
January, 1970

Now available in book form, this Report is based on the work of three skilled Analysts over 18 months time, and on numerous sub-studies. It is extremely readable and is illustrative of policy analysis based on interdisciplinary expertise.

Levien, Roger E. The Emerging Technology. McGraw Hill 1972, 540 pp

This is the final Report on a systems analysis of Instructional Uses of the Computer in Higher Education, sponsored by the Carnegie Commission on Higher Education and the RAND Corporation. The book assesses, with the help of seven other authors, the technological trends, University and College needs and experience, the pedagogy and economics of computer use in higher education.

Drake, A.W., R.L. Keeney and P.M. Morse, Editors, Analysis of Public Systems. MIT Press, 1972 532 pp.

Six general chapters lay out the field of public systems analysis as practised today in the USA. Seventeen other chapters describe applications - blood banks, libraries, fire brigades, Health Planning, etc. Two of the most interesting chapters are relevant to India: 'Puerto Rico's Citizen Feedback System' and 'Use of Decision Analysis in Airport Development for Mexico City.'

Prof. Morse was the founder of the O.R. Centre at MIT, where Dr. Drake is Associate Director, & Dr. Keeney is a staff member.