

## INTRODUCTION TO THE SEMINAR

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### INTRODUCTION

Interest in computing's potential contribution to local governments has increasingly become international as well as national, and in the past decade a number of major international conferences and symposia have been convened to compare, and share, experiences with computing and information systems at the local government level [1]. This symposium presents selected papers from a recent international seminar entitled "Municipal Information Systems, Pacific Area Community" (MISPAC). The seminar took place at the East-West Center in Honolulu, Hawaii in July 1983. The seminar was organized by the Public Policy Research Organization (PPRO) of the University of California, Irvine and the Local Authorities Systems Development Center (LASDEC) of Japan (see Notes).

### GENESIS OF THE SEMINAR

The MISPAC seminar is the outgrowth of recognition by academics and practitioners in the U.S. and Japan of the growing importance of the Pacific Area Community in world affairs. From the standpoint of world affairs, a primary concern of governmental policy in both countries is the promotion of political stability in the Pacific region through the sharing of technology between the developed nations and the newly industrialized nations of the area. Although many kinds of technology are potentially involved, information technology is expected to be a major part of technology sharing.

In December 1980, and again in March 1982, PPRO and LASDEC conducted a 3-day seminar on municipal information in the U.S. and Japan (MISUJI I and II—Municipal Information Systems, U.S.—Japan Interchange). These seminars brought together approximately 32 academics and practitioners from the 2 countries to share research on the management of computing, examine case studies on the application of computers to local government affairs, explore continued information exchange, and develop ideas for future research projects [1].

The MISPAC seminar is an outgrowth of these bi-lateral meetings and is aimed at continuing this tradition of combining first rate research with the transfer of knowledge useful to practitioner communities by extending it to multi-lateral meetings throughout the Pacific Area Community. The specific purpose of the MISPAC Seminar is information exchange and development of mutual understanding among the participants. Such exchange is expected to lead to: (1) understanding of the state of the art of government information systems in the developed, the newly industrialized, and the developing countries in the region; (2) identification of possibilities for technology transfer between and among the participating countries; (3) identification of future requirements for applications or specialized features of the technology; and (4) development of future research projects.

Attendants from Canada, Hong Kong, Malaysia, Philippines, Korea, Singapore, Thailand and New Zealand complemented delegations from Japan and the United States. Over 50 academics and practitioners participated in the 3-day seminar.

### OVERVIEW OF THE MISPAC SEMINAR PAPERS

As indicated above, this symposium issue presents *selected* papers from the MISPAC Seminar. Consequently, this introduction will briefly cover all the papers rather than only those included herein. The full text of papers not included here can be found in MISPAC 1983 [2].

#### *Evolution of computing*

To provide a background and a benchmark for further discussion, several papers presented

accounts of the historical development and use of information systems in local governments. Kraemer and King [3] present a framework for a model of computing evolution in organizations. By developing an accurate model it is possible to tie together the experiences of organizations to date. Wellar [4] provides a comprehensive assessment of computerized systems in Canadian local government, past and future. Based on this assessment, he suggests that in the next 15 yr, the greatest challenge/opportunity for local governments will reside in direct, interactive relationships between City Hall and its increasingly technically capable public.

Lau [5] traces the evolution of computer use in the city-state government of Hong Kong. Motiwalla and Lee [6] provide historical perspective on another city-state, Singapore. They focus on the political and economic developments behind Singapore's Civil Service Computerization Program which is aimed at establishing Singapore as a regional software center for the Pacific community. Nanjo [7] presents a vivid picture of how a high level of user demand which is uncontrolled results in proliferation, fragmentation and incompatibility impacts on computing in San Francisco.

Kume [8] rounds out this overview section by a quantitative characterization of computing in Japanese local governments. He reports that there are 3278 municipalities in Japan and that 93% were computer users in 1982, with a growing proportion installing their own equipment in preference to using outside service bureaus. The focus of computer use is routine, large volume processing in the areas of taxation, payroll, finance, accounting, personnel, resident registration and public housing. A very small proportion of Japanese municipalities have as yet computerized management and planning applications. However, Kume reports that the uses of on-line systems and database systems increased 3-fold between 1978 and 1982.

#### *Planning and decision support systems*

Given their currently limited computing capabilities, the applications of greatest use to developing countries tend to be in the areas of planning and decision support rather than in operational information systems. Consequently, the seminar devoted considerable discussion to these topics.

Sadowsky [9] describes the work of the United Nations Statistical Office in sharing micro-computer technology and experience with developing countries. Projects in Africa, East Asia and China are described along with insights about microcomputer applications transfer to developing countries.

Loy [10] describes pilot projects of the central government to computerize land and real property administration data in the local governments of Malaysia. These pilot projects are expected to be implemented throughout Malaysian local governments thereby creating a national land data bank. Putterill [11] compares the stage of computer adoption of New Zealand with other countries and discusses the challenge of developing advanced road maintenance management systems for local governments. Kawasaki [12] presents the future directions of the Planning Information Analysis System (PIAS) for Hyogo Prefecture. These involve developing computer support that enables planners to reconcile long-range comprehensive plans with shorter-term work programs. Izumida [13] details an administrative data bank developed to support planning and decision making in Osaka Prefecture.

Lockfield [14] describes the progress made in Santa Clara County over 20 yr with the use of geographic analysis and display for urban and regional planning. Applications have been as diverse as police beat analysis, school attendance area determination, paramedic service area design and evaluation, and consolidation of social services offices. He concludes that the powerful new microcomputers can now be used for such applications whereas previously mainframes and microcomputers were required.

Dueker [15] presents the notion that different types of computer capabilities are required by regional planning agencies, and that these types can be defined by the characteristics (such as the volume, frequency of use and form of data storage) of the planning data they use.

#### *Resident registration systems*

One of the most rapidly growing areas of computing application throughout the Pacific is population information systems, illustrated at the local level by resident registration systems.

Kawabata [16] describes approaches to the computerization of the basic resident register, which is a responsibility of cities throughout Japan as it is in some European countries. Contents of the register, organized by household, include such things as seal identification, voting registration, health insurance eligibility, national annuity qualification, and children allowance qualification. Yasutake [17] describes in detail the resident registration system in Hiroshima, a city with a population of 900,000.

#### *Security, privacy and data protection*

As more and more local government operations and databases become computerized, concerns for security, privacy and data protection invariably arise. Murai [18] describes computing developments in the Saitama Prefecture (1983 population of 5.6 million) and recent steps taken by the prefecture to minimize the impact of disaster on computing facilities. These steps include flooring reinforcement, safeguards against equipment tumbling, hander type storage of tapes, agreements with other prefectures to standardize equipment, fire proof safes for magnetic files, and tight control over entry and exit to computer facilities. Yasuda [19] describes computing in Meguro Ward, a relatively small unit within the Tokyo Metropolitan Government. Meguro Ward, which began using computers in 1967, currently uses an IBM 4341 computer to provide data processing support for 26 different areas of municipal administration. The increasing use of databases and communications has led to the Ward introducing a special ordinance for protection of privacy.

Kling [20] introduces the value conflicts which accompany computerization. These conflicts include, for example, the ways in which data subjects' privacy is affected by the collection of data themselves, the extent to which clients of computer systems are buffered from input or programming errors, and the extent to which the distribution of computing resources exacerbates social inequities. He concludes that proposals for computerization need to take explicit account of the values sacrificed or compromised as well as those fostered by new systems.

#### *Productivity tools in development and transfer of computer applications*

As software has become the dominant component of information systems costs, governments have increasingly sought tools for increasing productivity in the development, maintenance and transfer of computer applications. Nunamaker [21] examines current productivity tools and ongoing research efforts to improve these tools in the U.S. Saito [22] provides a synopsis of systems available for increasing productivity in software development projects. As an example, he discusses STEPS (Standardized Technology and Engineering for Programming Support) which used in Japan and has been responsible for doubling software productivity. Waltrip [23] describes the information center as a tool for gaining increased productivity in the direct use of computing by end users, and in the development of applications by end users. The HOBO (Hands On Basic Office System) in Sacramento County provides self-service end user computing for applications such as text and data processing, business graphics and electronic mail. In addition, HOBO provides a budget preparation application which facilitates analysis, text preparation and composition of budget documents by all country departments.

#### *Future of information systems*

To a considerable extent, the past is the future of information systems in the sense that existing systems and old arrangements will continue into the future. However, information systems in local government also will be shaped by new developments. Metzgar [24] looks into the future shape of information systems in local government and concludes that future developments point towards widespread applications of concepts such as data administration, data dictionaries and inventories, subject and operational databases, mixed installations of mainframe, mini- and microcomputers, paperless/imageless records, and a high level of connection between elements linked together by a network. Reineremann [25] examines the future of regional cooperative computer centers for the public sector using the 70 such centers in the Federal Republic of Germany as cases for study. He concludes that cooperatives have shown high potential to transfer computer applications to many units of local government quickly and at low cost; but he also describes technological, organizational and political problems which can limit their future utility.

Vitalari and Venkatesh [26] focus on the potential interfaces of computing in the home and

government provision of services. Several types of public services might be provided by governments to citizens via home computers, including electronic mail, information access and retrieval, emergency services, opinion polling, political process facilitation, and automated bill paying for government services. Vitalari and Venkatesh identify areas which require government policy makers' attention in order to overcome current constraints to greater involvement in this area by local governments. Also in a futuristic vein, Kumata [27] proposes using information technology to facilitate citizen participation, especially in smaller-scale neighborhood planning projects.

## CONCLUSION

Perhaps the most penetrating conclusion from the MISPAC seminar, as from those that preceded it, is that the experiences of the last two decades have taught us to abandon the quest for grandiose "universal computing solutions" to urban and regional problems, and to focus on development of efficient and effective systems to assist in routine operations of the government and in the well-defined management and planning problems. Indeed, this conclusion is closely related to the second: technology transfer between the developed and developing countries, whether in the form of hardware, applications or knowledge transfer, is best carried out on a small scale and in a highly focused manner.

As might be expected by anyone who has participated in such personally enriching international meetings, a third major conclusion of the seminar was the call for a second MISPAC Seminar. It was decided that MISPAC II would be held in Tokyo, Japan in 1985 coincident with Japan's EXPO 85 at Tsukuba.

## NOTES

Prefectures in Japan are similar to counties in the U.S. Tokyo Metropolitan Government is a consolidated government similar to Dade County, Florida in the U.S. or Toronto in Canada. Wards are administrative subdivisions of the Tokyo Metropolitan Government.

## REFERENCES

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  2. *Municipal Information Systems in the Pacific Area Community Seminar (MISPAC)*. Local Authorities Systems Development Center (LASDEC, Tokyo (1983).
- The following articles can all be found in Ref. [2] above.
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  4. Wellar G. S. The evolution of information technology in Canadian local governments: past, present and future.
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  8. Kume M. The evolution of computing in Japanese local governments.
  9. Sadowsky G. Transfer of computing technology to developing countries.
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  13. Izumida Y. Case study of planning and decision support systems in Osaka Prefecture.
  14. Lockfeld F. Geographic applications on a microcomputer in Santa Clara County.
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  20. Kling R. Value conflicts in computing developments.
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