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INFORMATION SYSTEMS FOR CONGRESS—
REVISITED

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INFORMATION SYSTEMS FOR CONGRESS— REVISITED

(By Kenneth Janda, Northwestern University)

Nearly eight years ago, in the summer of 1965, I contributed a paper entitled "Information Systems for Congress" to a symposium on the topic of strengthening the legislative branch with respect to the executive in the functioning of our government.¹ The symposium, which was sponsored by the American Enterprise Institute for Public Policy Research, occurred when the Presidency was held by the Democrats. Most of the participants felt then, as I do still, that the issue of strengthening Congress was one which transcends party lines and that the genius in our government lay in maintaining a bold counterpoint between the two branches charged with making and administering public policy—regardless of party control of either.

If the Congressional melody was being drowned out by the Presidential theme, I believed this was due in part to the concentration of information resources within the executive and the failure of Congress to develop its own independent information processing capability. So I addressed myself to suggesting some ways in which electronic equipment and computers can help congressmen perform their jobs better and thus improve Congress' performance of its role. Coming at what proved to be the beginning of a period of interest and activity in information support for the Congress, my paper attracted more attention than I had expected. It gave rise to a number of newspaper articles, and I was invited to deliver it to the national convention of the Association for Computing Machinery in 1966.² Soon afterward, I was asked to advise the Illinois Commission on the Organization of the General Assembly on information systems for the state legislature,³ and in 1967 the American Enterprise Institute invited me to a conference, organized around the theme of information support for the Congress.⁴

But since 1967, I have produced nothing original on the topic of information systems for Congress, have been only marginally involved in any research activity,⁵ and have not really even kept up with read-

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¹The paper was published in monograph form in 1965 by the American Enterprise Institute for Public Policy Research, Washington, D.C. It was later included in the symposium volume, edited by Alfred de Grazia, *Congress: The First Branch of Government* (Washington: American Enterprise Institute, 1966), pp. 415-456.

²Later published as "Features of an Information System for Congress," in *Proceedings of the A.C.M. National Meeting* (Washington: Thompson Book Co., 1966), pp. 361-372.

³My suggestions were contained in the Illinois Commission on the Organization of the General Assembly, *Improving the State Legislature* (Urbana: University of Illinois Press, 1967), pp. 44-48.

⁴The conference proceedings were later published in Robert L. Chartrand, Kenneth Janda, and Michael Hugo (eds.), *Information Support, Program Budgeting, and the Congress* (Washington: Spartan Books, 1968).

⁵I served briefly in 1970 as a consultant to the Working Group on Automatic Data Processing for the House of Representatives but then left Northwestern for a year's leave of absence, spending part of the year in England. While there in 1971, I consulted on one occasion with staff members of the Library of the House of Commons concerning their plans for computerizing their information support activities.

ing in the field. My major—and almost my sole—professional activity since then has been in conjunction with a world-wide study of political parties, sponsored by the National Science Foundation. Therefore, because I have been both ignorant and innocent of developments during the past five to eight years, I feel eminently qualified to comment on the current state of information processing within the Congress from the standpoint of progress in the interim.

I see my role in appearing on this panel as that of the Outside Evaluator. As an outsider, I may be able to offer some perspectives that differ from those of the insiders within Congress and the Congressional Research Service. As an outsider who has returned to the subject, after a long absence, I may be able to sense changes in the landscape that might impress an infrequent visitor but which may escape the notice of a native. In an effort to prepare myself for this role, I have been trying within recent weeks to catch up on my reading in the field—and have been assisted in this task by material supplied by Robert Chartrand of the Congressional Research Service. While I cannot claim to have regained the coverage of the field I had since abandoning the subject, I believe that I have learned enough of recent developments to volunteer some observations on the state of affairs, then and now.

The first impression that strikes me on revisiting the scene is the bustle of activity surrounding modern information processing technology within the Congress—when before there was none. My survey of governmental use of computers in information processing activities in 1965 found numerous applications even then—but all were in the executive branch.¹ Out of more than 160 governmental projects in information processing reported by the National Science Foundation in November, 1964, not a single one was either undertaken by Congress nor even sponsored by Congress.² Out of more than one billion dollars expended by the national government for automatic data processing equipment and services in 1965, virtually none of it was spent for congressional information needs.³ In short, congressional involvement in modern information technology in 1965 was literally zero.

Granting that congressional activity in information processing could only have gone up since 1965, I am still struck by the level of activity that has been reached by now—particularly in view of the fact that the Congress waited several more years before judging that the time was ripe to enter the field. The first bills relating to congressional use of computers were introduced in 1966 in conjunction with legislative reorganization, but they were not enacted.⁴ Instead, the first computer installed in Congress came upon the initiative of the Clerk of the House, who imported a small computer in 1967 to handle payroll and accounting tasks.⁵ Not until 1969, when the Special Subcommittee on Electrical and Mechanical Office Equipment of the Committee on House Administration established a Working Group

¹ My survey relied on the National Science Foundation series, *Current Research and Development in Scientific Documentation*, which began in 1957.

² Janda, "Information Systems for Congress," pp. 432-434.

³ Robert L. Chartrand, "Automatic Data Processing for the Congress," Library of Congress, Legislative Reference Service, Report TK 6565 C/SP 106 (April 6, 1966), p. 8.

⁴ *First Progress Report of the Special Subcommittee on Electrical and Mechanical Office Equipment*, prepared by the Working Group on Automatic Data Processing for the House of Representatives (October 1969), p. 52.

⁵ *Ibid.*, p. 46.

on Computers for the Congress, did the Congress plunge in directly. In less than four years since then, remarkable progress has been made.

Some appreciation of this progress can be gained by reviewing, in outline form, the main features of the information system I envisioned for Congress in 1965 and comparing current applications with that proposed checklist. I conceived of an information system for Congress being organized according to four different levels: serving Congress as a whole, each chamber separately, committees within Congress, and individual congressmen. Several applications were suggested for each of those levels:

Congress as a whole:

1. Informing congressmen of relevant bills.
2. Disseminating information about lobbyists.
3. Communicating with the Legislative Reference Service (now the Congressional Research Service).
4. Searching the U.S. Code.

Each Chamber of Congress:

1. Locating bills in the legislative process.
2. Providing information about votes.
3. Providing for automated voting.

Individual Congressmen:

1. Deciding how to vote (personalized information base).
2. Maintaining relations with his constituency (mass mailings).
3. Reading and analyzing written material.

Congressional committees:

1. Compiling histories of committee action.
2. Processing data on subjects under committee jurisdiction.
3. Controlling the administration (primarily budgetary review).

To some people at the time, these proposals seemed infeasible, if not wildly unrealistic, because of various problems in implementation—including cost, equipment limitations, and political complications from disturbing the distribution of knowledge within Congress.¹ However, I have learned from Chartrand's summary of the current status of computerized information support for Congress that a number of these "blue-sky" features either have been or are being implemented in the Congress today.² Chartrand points out that both chambers now have computer facilities and that additional facilities to serve Congress are located in the Library of Congress and the General Accounting Office. At least nine of my thirteen illustrative applications are being pursued—probably independently of my own suggestions—using one or more of these computer facilities.

My purpose is not to describe current applications in detail. Briefly, however, one finds that the Congressional Research Service now operates a current awareness service on a subscription basis that notifies congressmen of bills and other material that is relevant to their interest. CRS also performs overnight searches for topical requests.³ The House of Representatives has begun to operate a "bill status" system; the Senate is developing member voting record files; the House has

¹ Some of these considerations are reflected in the discussion of my paper reported in Chartrand, Janda, and Hugo, pp. 88-96.

² Robert L. Chartrand, "Regimenting Congressional Information Support," *Jurimetrics Journal*, 11 (June 1971), 165-178.

³ *Ibid.*, p. 175.

already installed an electronic voting system; and the Senate provides an addressing and mailing service for constituency relations.¹ Committees in the House receive help in preparing their legislative calendars; the House Committee on Banking and Currency has used the computer to prepare annual reports on financial institutions;² and the General Accounting Office has begun to provide committees with budgetary and fiscal information for their specific needs.³

My feeling on surveying the scene as it has unfolded within the last few years is one of surprise and satisfaction. Perhaps some of the people engaged in the design and operation of these systems may despair over what they perceive as a lack of progress in implementing their projects as they conceive it. But to an outsider who last saw the landscape when it was an untamed wilderness, I see land cleared and crops planted. Moreover, I sense that learning is occurring as experience is being gained. Congressmen, their personal staff members, the committee staff members, the support staff in the Library of Congress and the General Accounting Office—all of the main actors in the legislative process are learning what computers can do easily, what they can do with some difficulty, and what they cannot do at the present state of the art. Congress cannot adapt overnight to a gigantic, integrated information system. The transition from manual to automated methods must inevitably be gradual. The pace may seem frustratingly slow to the technically competent who see clearly what they feel should be done next. But Congress constitutes a *system* with interrelated parts as much as the information *system* that the information processing specialists would press upon it. Both sides need to be mindful of the systemic character of the setting as well as the service.

The thrust of these comments suggests that some degree of diversity of approaches and perspectives within the congressional information processing environment is not only to be tolerated but actually applauded. Thus I laud the free play of imagination and initiative during the early stages of identifying problems and proposing solutions. But I also recognize that these diverse systems must be drawn together before they go too far their separate ways, and I am concerned about how coordination and integration will be achieved.

I wonder who will provide the central services for the Congress as a whole. Can the House and Senate operations—which now appear to be separate and distinct—be coordinated to provide such services? Indeed, should they be merged into a joint House-Senate facility? My outsider status gives me no advantage in making such judgments. In fact, my status handicaps my evaluation of this important issue. But I believe that there is value in continuing a separation between the House and Senate information systems, especially as they relate to chamber housekeeping operations. I also expect that the Congressional Research Service and perhaps the General Accounting Office—each within their own traditional areas of expertise—will assume the major responsibilities for providing central services, avoiding some

¹ Robert L. Chartrand, "Computer Support of Congressional Operations—Selected References: Revised," Congressional Research Service, Report TK 6563 C/73-103 SP (June 1, 1973), p. 2.

² Chartrand, "Redimensioning Congressional Information Support," p. 174.

³ Comptroller General of the United States, "Budgetary and Fiscal Information Needs of the Congress," Report to the Congress. B-115398 (Nov. 10, 1972).

of the costs of duplication of effort within each chamber. In any event, it seems to me obvious that computer activities in and for Congress have progressed to the point where top-level dialogue on overall planning should be pursued in earnest, assuming it has already begun.

In addition to my concern about the extent of overall planning in the development of an information system for Congress, I have one other concern about the application of information processing technology to the information problems confronting Congress. I am concerned that the current activity focuses too narrowly—I would say almost exclusively—on digital computers in systems design without considering microfilm and videotape technology. Both microfilm and videotape systems have advantages over all-computer systems in handling large amounts of printed material—the staple food that fires most congressional action.

Despite my deep involvement in various applications of pure computer technology to information processing problems, I long ago recognized the limitations of computer hardware for handling tasks that required large amounts of textual material. In fact, I abandoned an all-computer approach to my research on political parties across the world in 1964 in favor of a specialized microfilm information retrieval system that was better suited to the storage and retrieval of library-type material on political parties.¹ In the course of my research, I assembled an information file consisting of more than 70,000 pages from over 3,500 documents on political parties in fifty countries.² Each of these pages has been tagged with one or more indexing codes that allows instantaneous retrieval of information on parties in any given country at a searching speed of one hundred pages a second. It would have required a staggering effort to keypunch all the words on these 70,000 pages for input to the computer. The resulting file would have been colossal, and prohibitive amounts of computer time would have been required to search the file to retrieve information of interest—even granting the development of suitable programming. For my research purposes—and I suspect for many other purposes—microfilm technology was clearly superior to that of the digital computer.

This is not the place for me to describe the microfilm technology at length as an alternative to computer technology. But existing microfilm systems have definite advantages in storage, ease of use, low cost, and—which is important for archival purposes—degree of permanency in retaining the quality of stored records. Two disadvantages of microfilm are the difficulty in editing material once entered and no telecommunications capability. A more recent and little-used alternative to microfilm is videotape, which allows for easy editing and provides for telecommunications—e.g., transmission over telephone lines. The promise of videotape is great (in my opinion, it is enormous) but unfortunately so is the cost of a videotape information retrieval system.

¹ Kenneth Janda, "Political Research with MIRACODE: A 16mm Microfilm Information Retrieval System," *Social Science Information*, 6 (April-June 1967), 169-181.

² My research was supported with National Science Foundation funds from 1967 to 1972 (grants GS-1418, GS-2533, and GS-27081). Other support has come from the Northwestern University Research Committee, the Foreign Policy Research Institute in Philadelphia, and the American Enterprise Institute. I am only now reaching the conclusion of my research, the results of which will be published by The Free Press in five volumes. The first volume, *Comparative Political Parties: A Cross-National Handbook* will appear in 1974. The second volume, *American Political Parties in World Perspective*, should appear later the same year. The next three volumes will be published during the next three years.

I am convinced that some information retrieval problems confronting Congress will not be handled without the imaginative use of hybrid systems that combine computer technology with microfilm and videotape as storage media.¹ I should like to see the Congress look beyond what is now conventional computer technology to find the technology that it needs to grapple with its unique problems. And if the technology does not exist, then the Congress should ask for it to be developed. Many executive agencies would not be shy about soliciting proposals for systems to be built to their specifications; I believe Congress should be at least as expansive in treating its own needs as it rises to the challenge presented by the executive.

¹ One such example is the New York Times Information Bank, which uses microfilm to store the text of newspaper articles and computers to do the searching of codes by which the articles are indexed.