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To: Members of the Committee on
Executive Board Administrative Matters

From: The Committee Secretary

Subject: Electronic Data Processing (EDP) Support for
Executive Directors' Offices--Summary of Main Issues

In connection with the paper Electronic Data Processing (EDP) Support for Executive Directors' Offices--Requirements Study (EB/CAM/86/21, 3/26/86), the staff has prepared the attached Summary of Main Issues. Both papers will be brought to the agenda of the Committee for discussion on a date to be announced.

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INTERNATIONAL MONETARY FUND

Electronic Data Processing (EDP) Support for
Executive Directors' Offices - Summary of Main Issues

Prepared by the Staff

March 25, 1986

1. Introduction

In the past two years several Executive Directors' offices have expressed strong interest in being provided with enhanced EDP support. Following discussions in the Committee on Executive Board Administrative Matters (CAM) 1/ a detailed study of requirements was undertaken and a report has been circulated as EB/CAM/86/21 (3/26/86). The purpose of this paper is to summarize the main issues raised by that report with a view to facilitating discussion in the CAM.

2. Consultant's Findings

(a) Between two-thirds and three quarters of Executive Directors' offices expressed either strong or active interest in automated systems to meet the following requirements:

- on-line access to Fund data and econometric software,
- access to the centralized Document Management Facility (DMF) currently being developed,
- additions and/or enhancements to current word processing capabilities.

(b) Between one third and one half of the offices have expressed active or strong interest in:

- a dedicated facsimile system,
- access to World Bank data, particularly the Debt Statistics Database,
- access to the Cable Room system currently under development.

(c) Fewer than 25 percent of Executive Directors expressed a strong or active requirement for automation of communications to their staff, other Executive Directors' offices, Fund staff or the systems of organizations external to the Fund via electronic mail or file transfer capabilities. Even fewer offices expressed an interest in office services functions such as calendar maintenance, scheduling, tickler files, etc.

1/ EB/CAM/Meeting/85/2 (2/28/85) and EB/CAM/Meeting/85/3 (6/27/85).

(d) The consultants concluded that, in several of the areas in which interest had been expressed, substantial improvements in both the quantity and the quality of work could be achieved through automation. The areas identified as having most potential for improvement were:

(i) Word processing (including document and form production) and filing, searching for and retrieving information--for each of these activities more efficient automated procedures and new capabilities could achieve considerable gains in productivity.

(ii) Research and analysis--automated access to Fund data, text, and other electronic sources of information could enhance the range and quality of the analytical work of Executive Directors' offices.

(iii) Communications--increased access to facsimile facilities and a centralized Fund document distribution system could improve communications with constituent countries.

(e) The consultants emphasized the need to augment the training and other forms of support provided in connection with existing automation in Executive Directors' offices. Expanded automation would necessitate a high level of ongoing support.

3. Possible approaches to meeting requirements

(a) In analyzing possible approaches, the consultants were guided by four general principles:

(i) Each Executive Director's office should control its own automated system, including the media for the storage of documents and data. Several Executive Directors had expressed concern about the security and other risks associated with automated systems shared by more than one office. The consultants therefore concentrated on approaches which would provide independent systems over which each office would have physical control. However, approaches under which offices would share a large, centrally located system would probably be substantially less expensive than ones involving independent systems for each office and it is not clear that the security and other risks of a centralized system would be significantly greater.

(ii) All Executive Directors' offices should have equal opportunity to have EDP facilities installed. Although requirements were found to vary from office to office, the same basic level of EDP support could be made available to all offices through a "baseline" system which would provide additional word processing capacity, some capabilities for econometric and statistical analysis, and access to Fund databases and systems. In addition, a few "multi-user" systems could be developed; these systems would provide additional capabilities to a large number of users in each office and would be likely to differ both in cost and in some functional aspects from office to office.

(iii) It should be possible at a later stage to upgrade a "baseline" system to a "multi-user" system without discarding hardware, making major changes in software, or necessitating major retraining of personnel. However, if an office were to use word processing software other than specified for the "multi-user" system, training would be required.

(iv) Any system proposed for Executive Directors' offices should be consistent with the Fund data processing strategy and, to the maximum extent possible, compatible with systems planned for Executive Directors' offices in the World Bank. The Fund's EDP strategy is still evolving, but the general directions are clear and they have been an important element in evaluating possible approaches to meeting the needs of Executive Directors' offices. A status report on the overall EDP strategy for the Fund will be provided for the information of Executive Directors as soon as practicable.

(b) Based on a thorough analysis of the proposals submitted by IBM, NBI, and DEC, the consultants concluded that:

(i) The IBM PCXT should be selected as the baseline system. This would be a comparatively low cost and low risk means of meeting many of the major requirements that had been identified. However, no baseline system would meet all of the requirements, or be able to provide the range of user friendly capabilities that would be available with a multi-user system.

(ii) The baseline system should be installed in all Executive Directors' offices which wish to utilize it. However, the baseline system should be seen as an interim step toward the acquisition of multi-user systems.

(iii) Up to three pilot projects should be established for testing and evaluating under working conditions the costs and benefits of a multi-user system. The consultants provisionally recommended the DEC Microvax II as the basis for the multi-user system. However, this recommendation was conditional on the testing of a DEC based, multi-user, pilot system scheduled to take place in FY 1987.

4. Access to databases and systems

(a) Expanded access to Fund data would have several general implications including:

(i) The staff believe that some current sources of data (e.g. member countries) could decide to cease, curtail, or delay the submission of raw data to the Fund if access to that data is made available to all Executive Directors' offices. The staff is particularly concerned about the need to safeguard the confidentiality of statistics on international banking, of some Fund accounts data, and of some disaggregated data used in developing estimates and projections for World Economic Outlook exercises. Any impairment of security could lead to losses of information in areas vital to the Fund.

(ii) Executive Directors expressed widely differing views about the sensitivity of data from the countries they represent and about the possible effects of expanded access upon the security of that data.

(iii) The staff believe that in order to make effective use of facilities to access Fund databases, the staff of most Executive Directors'

offices would require considerable training in the use of databases and the associated software.

(iv) Some Executive Directors were concerned that if a number of offices regularly exploited facilities for constructing alternative econometric scenarios, discussions in the Board could become less policy oriented.

(b) The two databases of most interest to Executive Directors are the Economic Information System (EIS) and the Treasurer's Integrated Financial Systems (TIFS). The fact that these major databases are still in the process of development increases the difficulty of weighing possible options regarding access to them. For each of these systems the consultants, nevertheless, reviewed the advantages and disadvantages of three possible options for providing access (for EIS see pages 62-65 and for TIFS see pages 69-72 of EB/CAM/86/). It would be for the Committee to decide which of the options, if any, it wishes to recommend for implementation. It should also be noted that the options for access to EIS reflect only those data currently available from the Data Fund System (DFS). No access to country desk data, staff estimates or projections are envisioned in the options presented in the consultants' report.^{1/}

(c) The consultants also reviewed the advantages and disadvantages of providing access to the Document Management Facility (ibid. pages 74-75), the Cable Room System (ibid. pages 76-77), the Joint Library Information System (ibid. pages 78-79), and the World Bank Debt Statistics Database (ibid. pages 79-80). Again, it would be for the Committee to make recommendations to the Executive Board on the implementation of access and the timing of such implementation.

(d) The consultants thought it was likely that savings and improvements in efficiency could be achieved by centralizing the distribution to member countries of official Fund documents. They suggested that a detailed study be carried out to assess the feasibility of such a system (ibid. pages 83-85).

5. Implementation

(a) Phased implementation for the installation of office systems equipment and for providing access to Fund data and systems is necessary because:

(i) Many Fund systems to which access has been requested, are in development or early operational stages and thus subject to difficulties.

(ii) Training requirements for staff in Executive Directors' offices will be large and disruptive to the work of those offices.

(iii) Time is needed to plan and coordinate implementation and to develop adequate support arrangements.

^{1/} Country desk data and staff estimates and projections are not currently available in a form that permits accessing them through a computer system.

(b) As the first step, the baseline system should be installed in as many Executive Directors' offices as wish to take advantage of it. This will provide an opportunity for offices to acquire expertise in the application of automated tools and will be valuable in assessing the merits of further automation (ibid. page 86).

(c) Depending on progress in developing and testing multi-user systems, up to three such systems could be installed to evaluate the costs and benefits of the system. Criteria are suggested for selecting the offices to receive the pilot systems and a procedure is proposed for assessing the pilots and reporting to CAM (ibid. pages 87-88).

(d) A plan should be established for gradually providing access to Fund databases and systems. The length of time required for developing the plan and putting it into effect will depend on decisions by the Committee and the Executive Board regarding the various options for providing access as well as on the status of Fund-wide computer systems developments. Once those decisions have been taken, the plan would indicate requirements for training, software development, and security procedures (ibid. pages 88-89).

(e) The implementation process will be complicated and time consuming. It will require careful coordination and substantial technical and organizational support. The coordination effort should be centralized and there should be a mechanism for obtaining systematically the views of Executive Directors and their staff on the evolution of automation in their offices (ibid. pages 89-91).

6. Costs and Benefits

(a) Installation of the hardware and software suggested by the consultants would probably result in cost savings from reduced support staff overtime and from termination of leases on existing equipment. Although a detailed analysis had not been made, prima facie it seemed likely that a centralized and partially automated system for distributing official Fund documents would also be likely to achieve cost savings. Automated word processing and text editing capabilities provided by the multi-user system could lead to further savings in support staff time. However, expenditure on equipment, training, and support would offset the total savings that might be achieved.

(b) Qualitative benefits would include improved availability of information, enhanced research and analysis capabilities, faster and more secure communications, faster turnaround time for text preparation. These benefits would probably be more important than any cost savings and productivity gains. However, utilization of the enhanced research and analysis capabilities could entail additional work.

(c) The total first year cost for installing the baseline system, in all 22 Executive Directors' offices is estimated at \$374,852. In addition, the total first year cost for installing multi-user systems in three offices is estimated at \$382,354.

(d) It is projected that if multi-user systems were installed in all 22 offices, the maximum net cost (i.e. after taking account both of the prospective savings and productivity gains, and of the costs for training, support, supplies, etc.) would amount to \$2,637,566 over five years (ibid. page 99, exhibit 4-3). The comparable net five-year cost for 22 multi-user systems based on a shared, central processor (i.e. each office would not have physical control over its own system) would amount to \$1,675,367 (ibid. page 103, exhibit 4-5).

7. Conclusion

(a) The consultants' report raises a number of difficult technical and policy issues. These can perhaps be summarized in a list of questions:

(i) Is the analysis of the requirements of Executive Directors' offices sufficiently realistic and comprehensive?

(ii) Are the four guiding principles that shaped the analysis of possible approaches to meeting the requirements appropriate? In particular, should each office have physical control over its own multi-user system or would a shared central processor be acceptable?

(iii) Would the approaches suggested satisfy the requirements of Executive Directors' offices and are they technically sound?

(iv) Is the phased approach (i.e. baseline system, pilots for multi-user systems, and gradual implementation of access) feasible and acceptable? What should be the timing for the various phases?

(v) Is the analysis of the various options for providing access to Fund databases and systems an adequate basis for CAM to formulate specific recommendations to the Executive Board and for the Board to instruct the staff with regard to the extent and timing of access?

(vi) Are the implementation plans, including the criteria for locating the pilot multi-user systems, acceptable?

(vii) Because some key systems (in particular EIS, TIFS, and DMF) are still in development stages and because decisions have not yet been taken with regard to the design of the interfaces with those systems, is it premature to undertake the development of linkages with those systems for Executive Directors' offices?

(viii) Do the prospective benefits justify the likely costs (intangible as well as tangible) of installing baseline systems and pilot multi-user systems and providing either partial or full access to Fund databases and systems?

(b) The above list only covers the broad questions on which the Committee will need to reach decisions. For several of the questions there are a number of sub issues. For example, the consultants' report indicated some of the technical and cost implications of different levels of access to Fund databases, but it touched only in general terms on the security implications and the difficulties of defining the sensitivity of different

data elements. Concern has been expressed by some staff that a Fund-wide policy for information security should be established 1/ prior to evaluating options for access to Fund databases by Executive Directors' offices. Some Executive Directors also have expressed concern about the security of data and the Committee may therefore wish to consider issues of confidentiality before coming to any decisions on access to data bases.

1/ It is expected that the Managing Director will issue in the near future a statement delineating security policies for departments, bureaus, and offices. The statement will be an important step toward the early implementation of more coordinated and comprehensive standards, procedures, and guidelines for security.

