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Ministère des Communications

AN ANALYSIS OF PROGRAM DELIVERY:
FOR THE EVALUATION OF
THE OFFICE COMMUNICATIONS
SYSTEMS PROGRAM

Background Study

Etude de base

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PROGRAM EVALUATION SERIES

This is one of seven Background Studies that form part of the evaluation of the Office Communications Systems Program.

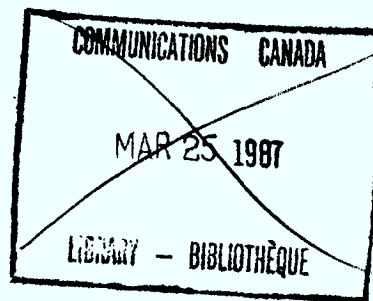
The Study was prepared by Price Waterhouse Associates for the Program Evaluation Division of the Department of Communications, Canada.

The views expressed herein are those of the author and do not necessarily represent the views or policies of the Department of Communications.

DEPARTMENT OF COMMUNICATIONS

AN ANALYSIS OF PROGRAM DELIVERY:
OFFICE COMMUNICATIONS SYSTEM PROGRAM:
FINAL REPORT

SEPTEMBER 1985



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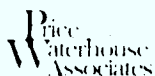
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DEPARTMENT OF COMMUNICATIONS

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DEPARTMENT OF COMMUNICATIONS

AN ANALYSIS OF PROGRAM DELIVERY:
OFFICE COMMUNICATIONS SYSTEM PROGRAM

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EXECUTIVE SUMMARY

This report presents the findings of an implementation analysis of the Office Communications Systems Program. The central questions examined in this study were:

1. To what extent was the program implemented as originally designed?
2. Which factors account for facilitating or impeding program implementation?
3. What were the consequences of the implementation process?

The analytical framework for the study included: the policy-making process that led to the program, the design of the program, the implementation process itself, consequences, and the influence of environmental factors (e.g., developments in the industry) and interested constituencies (host departments, vendors, Treasury Board, Department of Communications, Department of Supply and Services, and the Department of Industry, Trade and Commerce.).

The report provides an extensive background for understanding the implementation issues. It provides an historical overview of the OCS Program. There is also a discussion of the objectives (explicit and implicit) and strategy of each component of the OCS Program: field trials, behavioural research, impact assessments, promotion, and leading-edge research.

The major findings are the following:

- . the meaning of integrated office communication systems changed and there was a major shift in the orientation of the field trials from developing functional specifications and integratable products to developing integrated products (i.e., multiple functions within a product).

- . the implementation of the field trials were seriously delayed because: the OCS Program and the vendors misjudged the state of readiness of the technology and the required development time; contracting problems with DSS; turnover of personnel in the host departments; and changing expectations of host departments.

- . there was no overall plan for the OCS Program which evolved according to: circumstances, preferences of vendors, interests of host departments, and decisions by management on matters requiring attention.

- . the impact assessments were initiated late and their focus changed from examining effects of office automation to assessing issues related to implementing office automation, users' needs and systems performance.

The report presents lessons learned from this implementation analysis for future field trials.

1. The specificity of the primary objective (i.e., industries development) facilitated implementation.

2. There is a need for an overall framework.

3. There should be planned decision points.

4. The feasibility of a program requires careful analysis.

5. Formal agreements should be developed to formalize cooperative arrangements among departments.

6. The sunset nature of a program encourages timely completion.

7. Greater employment security is needed for staff working for sunset programs.
8. There is a need to ensure the presence of staff qualifications for each area of the program.
9. It is important that vendors are accountable to users.

SOMMAIRE EXECUTIF

Ce rapport présente les résultats d'une analyse sur l'application du Programme de la bureautique. Les principales questions examinées dans cette étude sont les suivantes:

1. Dans quelle mesure le programme a-t-il été exécuté comme originalement conçu?
2. Quels sont les facteurs qui ont facilité ou gêné l'application du programme?
3. Quelles ont été les conséquences du processus d'application?

La structure analytique de l'étude comprend les facteurs suivants: le processus décisionnel qui a mené au programme, la conception du programme, le processus d'application lui-même, et les conséquences et l'influence de facteurs environnementaux (par exemple les développements dans l'industrie) et les parties intéressées (ministères hôtes, vendeurs, Conseil du trésor, ministère des Communications, ministère des Approvisionnements et Services et ministère de l'Industrie et du Commerce).

Le rapport fournit une documentation approfondie qui permet de mieux comprendre les questions relatives à l'application. Il donne un aperçu historique du Programme de la bureautique. Il examine aussi les objectifs (explicites et implicites) et la stratégie de chacune des composantes du Programme de la bureautique: essais sur le terrain, recherche behavioriste, évaluations d'impact, publicité et recherche de pointe.

Les principales conclusions sont les suivantes:

- la signification des systèmes de bureautique intégrés a changé, et il y a eu un déplacement important dans l'orientation des essais sur le terrain, allant du développement de caractéristiques fonctionnelles et de produits intégrables au développement de produits intégrés (c'est-à-dire de produits à fonctions multiples).

- . l'application des essais sur le terrain a été sérieusement retardée en raison d'une mauvaise évaluation, de la part du Programme de la bureautique et des vendeurs, de la maturité de la technologie et du temps de développement nécessaire, de problèmes de contrats avec le ministère des Approvisionnements et Services, du roulement de personnel au sein des ministères hôtes et des attentes changeantes des ministères hôtes.
- . il n'y avait aucun plan global pour le Programme de la bureautique, qui s'est développé selon les circonstances, les préférences des vendeurs, les intérêts des ministères hôtes et les décisions de la direction quant aux questions importantes.
- . les évaluations d'impact ont été amorçées tard et leur point de mire a changé, passant de l'étude des répercussions de la bureautique à l'évaluation de questions relatives à l'application de la bureautique, aux besoins des usagers et au rendement des systèmes.

Le rapport fait état de leçons tirées de l'analyse de l'application qui pourraient être utiles en vue de futurs essais sur le terrain.

1. La précision d'objectif premier (c'est-à-dire le développement des industries) a facilité l'application.
2. Une structure globale s'impose.
3. Des périodes de décision devraient être prévues.
4. La possibilité de la réalisation d'un programme nécessite une analyse approfondie.
5. Des accords en bonne et due forme devraient être préparés afin de formaliser les règlements coopératifs entre ministères.
6. La nature d'un programme temporarisation en favorise l'achèvement opportun.

7. Une plus grande sécurité d'emploi est nécessaire pour le personnel qui travaille au sein des programme temporarisations.
8. Il faut assurer la compétence du personnel dans chaque secteur du programme.
9. Il est important que les vendeurs soient responsables face aux usagers.

DEPARTMENT OF COMMUNICATIONS

AN ANALYSIS OF PROGRAM DELIVERY: OFFICE COMMUNICATIONS SYSTEM PROGRAM

INTRODUCTION

"The article of faith that unites implementation analysts is that the carrying out of a policy, the installation of the technology, the realization of a plan, or the enforcement of a law is neither automatic or assured."¹

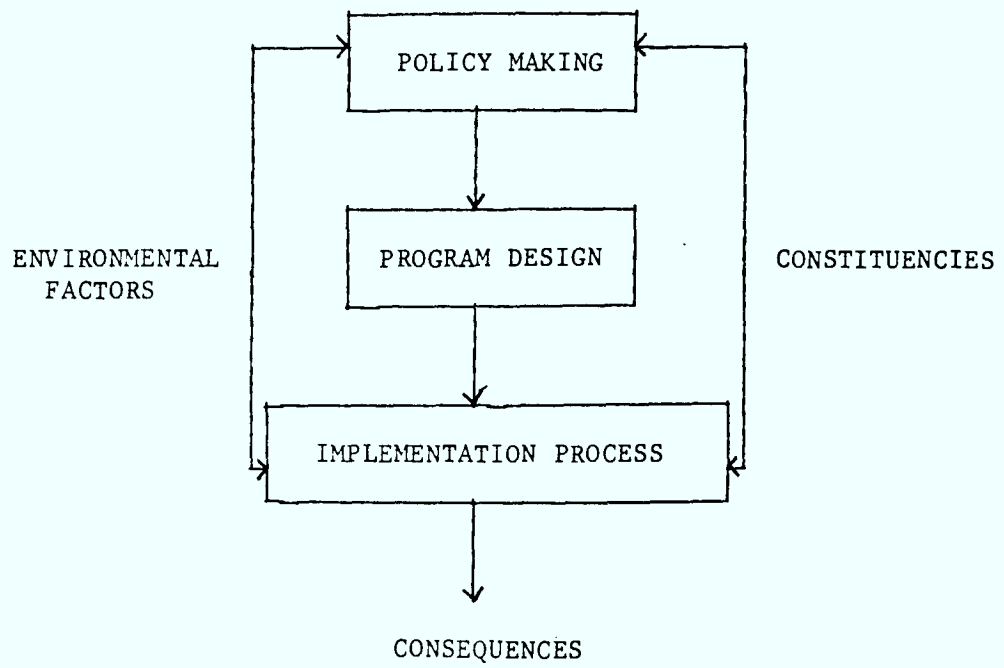
In recent years there has been growing recognition that major difficulties occur in implementing new programs in their prescribed manner. This has given rise to the conduct of studies which focus on the implementation process. Such studies generally examine the following issues:

1. the extent to which the program was implemented as originally designed;
2. factors that account for facilitating or impeding program implementation; and
3. the effects or consequences of the implementation process.

There are several benefits from the conduct of studies which focus on program implementation. First, the interests of accountability are served by documenting the extent to which the program was implemented in accordance with the formally approved mandate. Second, the lessons learned from an implementation study can be used to avoid such problems for similar programs in the future. Third, the results of this study can contribute towards the overall evaluation of the effectiveness of the Office Communications Systems Program (OCS Program).

¹Paul Berman, "The Study of Macro and Micro Implementation," Public Policy, Volume 26, No. 2 (Spring 1978), p. 160.

FRAMEWORK FOR THE STUDY



FOCUS AND SCOPE

The framework for this study is shown in Exhibit 1 opposite . The specific focus of the study is the actual implementation process. However, the analysis attempts to identify the factors that influenced its implementation as well as the consequences of the implementation process. We examined the policy-making process to determine how the program was developed and the factors that influenced the decision to have particular features of the program. This analysis sheds light on the rationale for the program, the key actors who influenced the design and obtained approval for it, and the extent to which the policy development process affected the implementation process.

The Office Communications Systems Program is a separate focus for analysis because the design and characteristics of the program can have important implications for program implementation. We examined several factors in relation to the program design, including: the objectives, the nature of the program activities (particularly to determine whether they were sufficiently clear to provide direction for implementation), the degree of cooperation required with different groups and organizations to implement the program, the adequacy of the resources (financial and human) and the sunset nature of the program.

The examination of the implementation process covers the role of the OCS Program in various activities which characterized the program: field trials, behavioural and economic research, public awareness activities and impact assessments. Several important questions were examined. Were there clear directions for implementing the program activities? How did the program carry out its responsibilities during the implementation process? Were there adequate monitoring and control procedures to ensure that the program was implemented as intended? To what extent did the implementation process result in changes to the program objectives and initially approved program activities?

some stage of its development and operation. We also prepared a set of questions which consultants conducting the separate studies on the vendors and host departments were asked to address. The information which they obtained on our behalf is also included in this analysis.

Certain important precautions about implementation studies should be noted. First, implementation problems inevitably occur for innovative programs. Therefore, the nature of and extent to which implementation problems occurred are the relevant issues rather than the fact that such problems were encountered. Second, it is not difficult to use hindsight for identifying implementation problems and showing how they could have been avoided. The OCS Program was complex and took place in a dynamic environment. Program officials involved in the process did not have the same luxury as our consulting team to witness the events and to identify issues. Third, it is often difficult to determine the cause for implementation problems. To the extent possible, an attempt is made to provide such explanations by describing events and circumstances as well as providing opinions and viewpoints of key participants.

HISTORICAL OVERVIEW OF THE OCS PROGRAM

There are historical precedents to the OCS Program which appear to have had an important influence on the original design of the Program. The Department of Communications had a Task Force on Infomatics in the mid 1970's which appeared to lay one groundwork for the OCS Program. Mr. H.H. Brune, a departmental official, was involved with the Task Force and he developed some ideas about the computer industry as a result of this experience. In 1978, Mr. Brune had discussions with the Board of the Canadian Advanced Technology Association (CATA) on ways of following up the Task Force recommendations. The companies who were members of CATA had an interest in the idea of field trials and agreed to government support for such ventures. About this time the Cable Television Research Institute was looking into future office communication and initiated contact with the Department of Communication. Its views were that the type of research necessary for developing such future office communication required the

collaboration of several companies. It then formed OCRA which originally included -- CNCP, Cable Telecommunications Research Institute (Skyline Cablevision, Ottawa Cablevision, Télécable Laurentian), Mitel, Gandalf, and Nabu.

In late 1979, DOC commissioned the Office Communications Systems Study Project with CN-CP Telecommunications and AES Data Ltd. to develop concepts for the Office Communications Systems Sector. Information produced by the funded research was used in the submission to the Minister of the Department of Communications and the Cabinet for the OCS Program.

Treasury Board approval for the OCS Program was obtained on October 16, 1980. The proposal for the OCS Program included two phases. Phase 1 was expected to last until the fiscal year 1981/82 and it received \$2.5 million and three person years. In fiscal year 1980/81, the budget breakdown was as follows:

- . development of functional specifications for possible products and integrated systems and limited field trials of partial systems -- \$600,000;
- . behavioural studies to determine impact of automation on the office environment -- \$200,000; and
- . program management and planning -- \$200,000.

In the second year, \$1 million would be spent for the continuation and completion of the partial system field trials and the remaining \$500,000 would be equally split between behavioural/human factor studies and program management. This proposal for Phase I also described the next phase.

There was an estimate that Phase 2 would last three years and the resources required for this phase would be under \$10 million. It was viewed as a sunset program and there would be no commitment from, or liability against, the government beyond that point.

The environment (including organizational location) of the program and the various constituencies or stakeholders who are involved with it normally have an important influence on the policy development process, the design of the program, and the implementation process. We consider the influence of such environmental factors as developments in the office automation industry and general developments in the economy. We also determine the influence on the implementation process of various stakeholders including: the host Departments, the vendor companies, Treasury Board, Department of Supply and Services, the Department of Industry, Trade and Commerce, and the Department of Communications (DOC) itself.

This study also attempted to identify the consequences of the implementation process such as: delays, costs to various participants of the program, and the failure to carry out the intended activities. The examination of consequences is not meant to produce findings on program effectiveness. Other studies in the overall program evaluation of the OCS Program examined this issue. We were simply concerned with the consequences of the implementation process.

APPROACH

The overall approach taken to this implementation analysis can best be characterized as a case study. We obtained a description of the historical developments from the Director of the OCS Program through several interviews. We then reviewed the extensive documentation that was made available to us, including: Treasury Board submissions, the Operational Planning Framework, memoranda of understandings, news releases, internal reports, presentations by staff, publications, minutes of committees, budget breakdowns, and other relevant documents.

The interview with the Director of the OCS Program and review of documents provided us with sufficient basis for developing a structured interview guide which included questions that focussed on particular issues that we had surfaced. (The guide is in Appendix A.) We used this interview guide for our discussions with individuals who had some involvement in the OCS Program at

The proposal for Phase 1 included conditions which were to be met before proceeding to the second phase. These included:

- . industry organize itself in such a way that the participating companies are working effectively towards the transformation of the functional specifications into specific product planning and development;
- . companies in the industry approach Industry, Trade and Commerce (ITC) for EDP support to develop specific pieces of equipment within the systems concepts defined in the first phase; and
- . the market and technology continued to develop in the way that it is now going and is expected to be going.

The objective stated for the OCS Program was:

"to influence the ability of Canadian industry to participate in the rapidly growing "office of the future" marketplace".

The role of government would be to encourage Canadian industry to organize itself. The government would develop interconnection standards as well as overall systems concepts. It would also serve as the catalyst in getting companies to work together.

Providing an opportunity for field testing was a critical feature of the OCS Program since it was considered as an important bridge between product development and commercialization of the product. The host departments would provide this opportunity for industry to test their products. Benefits were identified for the vendors, host departments, the federal government as a whole, and the Canadian economy. The industry would increase its competitiveness and be able to grow with the market for products that were developed. The host departments would be able to take the lead in introducing advanced office equipment and this experience could be applied to other departments. There were also major economic benefits identified such as high level jobs created (in management, marketing, production and engineering) and increased export earnings stemming the flow of imports of office communication equipment.

Phase 1 started in January, 1981, when the Director and Field Trial Manager of the OCS Program were appointed. Their initial responsibilities were to establish the office and to plan the implementation of activities which were outlined for Phase 1. Among the early tasks carried out was the creation of a OCS Users' Group Committee and an OCS Industry Consultative Committee.

Arrangements were made to obtain consulting services to explore the feasibility of field trials and to develop methods of operationalizing them. The research activities began with the award of four contracts. There were also mini field trials implemented during this period.

Mr. H. Brune whose vision for the OCS Program was reflected in the proposed design for Phase 1, left the Department of Communications in September 1981 to join OCRA. About 2 months later OCRA submitted a proposal for operating a field trial.

The OCS Program management had decided to support several field trials rather than limit the funds to a single trial by one group. While there were no formal criteria for selection of vendors, major factors considered included: the financial health of the company, the type and quality of product proposed, and perceived ability to deliver the system.

In organizing these field trials, the management of the OCS Program accepted the role as broker between the suppliers and interested departments. The major event in this broker role was the arrangement of a meeting in December 1981, at which six vendors made presentations to representatives of 20 different departments. Eight departments volunteered to act as a host for a field trial and six companies made proposals to conduct such a field trial. There were meetings between the vendors and interested departments to explore the compatibility of their interests. In addition to acting as a broker, the OCS Program provided funds to companies for the purpose of conducting feasibility studies of field trials in the interested departments. BNR received \$73,550 to conduct surveys in several government departments to identify an appropriate

department in which to conduct a field trial of its system. This process led to agreements in principle by four host departments and four vendors.

Program management decided to cut Phase 1 short by one year which would save \$1.5 million because of its strategic decision to concentrate on fewer projects than originally envisioned in the Phase 1 plan. The proposal for Phase 2 indicated that the feasible and desirable way of proceeding would be with the field trials approach which had been confirmed in Phase 1. Moreover, there were already agreements in existence between host departments and the vendors to carry out field trials. Although the Program was about 5 months behind schedule, primarily due to staffing shortages according to the submission, the delay had resulted in a forward cash flow adjustment of \$1.25 million from the 1981-82 to the 1982-83 fiscal year.

The Phase 2 proposal also included the addition of objectives concerning the behavioral and social impact of office communications systems. These were the result of a groundswell of concern regarding the potential impacts of office automation by women's groups, labor groups and others.

Cabinet approved funding for Phase 2 on April 6, 1982 and a public announcement of Phase 2 was made on June 8, 1982 at a press conference by Ministers' Fox, Gray and Erola. Treasury Board approved funds but no PY allocation for Phase 2 in July 1982. In November 1982, Treasury Board's approval was obtained for 30 person years over 3 years to staff the OCS Program.

The program was staffed with seven professionals by January 1983. The OCS Program had initiated a total of 20 studies covering behavioural, economic, marketing, feasibility, and field trial activities at an expenditure of \$400,000.

Phase 2 included a two-fold strategy. The first strategy focussed on a series of major field trials in federal departments to take place over four fiscal years commencing in 1982-83 and terminating in 1985-86. The estimated cost for the major field trials was \$9 million and \$17.25 million for the whole program.

FIELD TRIAL PARTICIPANTS AND BUDGETS

Host Department	Vendor	Field Trial Budget	Contractor for Impact Assessment	Impact Assessment Budget
Customs & Excise	Bell Northern Research	\$3.0 M	Engel and Townsend	\$147,500
Environment Canada	OCRA Communications Inc.	\$3.0 M	Wescan	\$151,500
Department of Communications	Bytec-Comterm	\$500 K	Mount St. Vincent	\$103,722
Department of National Defence	Systemhouse	\$2.8 M	Abt Associates	\$150,000
Energy, Mines and Resources	Officesmiths	\$700 K	Socioscope	\$ 40,000

The second strategy would involve research into leading edge technologies and was estimated to cost \$9.5 million. However, funding for the second strategy was to be a subject of a separate memorandum to Cabinet in 1982 when planning was further advanced.

The proposal for Phase 2 made reference to an intervention strategy to address behavioural and human factors to aid the field trial implementation. The performance of the OCS Program would be monitored and the performance criteria mentioned were the following: the number of products, systems and applications packages developed and tested, quantity sold, revenue generated, exports generated, and employment created directly and indirectly.

A special field trial was also proposed for the Department of Communications where senior departmental officials expressed the desire to implement and test integrated office automation systems to meet administrative requirements throughout the Department.

Phase 2 of the OCS Program involved the funding of field trials in host departments, impact assessments of these trials, continued funding of research projects, and public information activities. Impact assessments of the field trial were planned for Phase 2 and \$350,000 was budgeted for this research. In March, 1983 the impact assessment budget was doubled by management to \$700,000. Exhibit 2 (opposite) summarizes the arrangements as well as field trial and impact assessment budgets.

In March of 1984, a one-year extension to the OCS Program involving no allocation of person years and no additional resources was approved by Treasury Board. All of the field trials are planned to be completed prior to this final sunset date.

ANALYSIS OF PROGRAM IMPLEMENTATION

The analysis of program implementation begins with a description of the objectives of the OCS Program in order to provide an understanding of the

intended accomplishments or achievements of the Program. The discussion also addresses issues related to the objectives which have implications for program implementation. The analysis then shifts to the program strategy which includes the following major types of activities:

- . field trials;
- . behavioral research;
- . impact assessment;
- . promotion; and
- . leading-edge research.

The discussion of these program activities covers such concerns as: whether the activities were implemented as originally intended; how the activities changed over time; and factors that account for implementation problems.

The final area covered by the analysis is the consequences of the implementation process. The identified consequences are not intended to serve as indicators of program success or failure because this study did not attempt to determine program effectiveness by assessing the extent to which the OCS Program's objectives were achieved. The goal was more modest: to document the consequences associated with the implementation process.

A. PROGRAM OBJECTIVES

The formal strategic objective of the OCS Program was stated in the 1980 Treasury Board submission as: "to provide a governmental focus and impetus which will lead to the development and sustenance of a Canadian based office automation industrial infrastructure." This emphasis on developing an industrial infrastructure existed throughout the program's history. However, the notion of an "integrated" electronic office system appears in the 1982 submission to Treasury Board: "to develop an industrial capability in Canada for supplying integrated electronic office systems for marketing domestically and internationally."

There were other objectives which were treated as secondary to the above concern with industrial development. These objectives were usually mentioned as benefits or advantages in formal documents we reviewed.

There were perceived benefits of the field trials to the Federal Government as a user of office automation. It could maintain a lead position in the application of new technology and avoid costly mistakes by identifying them in the field trial before the applications become widespread throughout government. Also, the government would be able to realize the productivity gains expected from the automated office systems.

There were implicit objectives for carrying out economic and behavioural research which were recognized at an early stage of the program's development. It would contribute toward social policy formulation by governments and aid suppliers in introducing office automation in a manner that minimizes resistance by users.

The public information program had two stated purposes: 1) to promote awareness and support for developing Canadian capability in the office of the future as well as awareness of the Government's role in this development; and 2) to generate awareness of the implications and changes that will result from large scale application of these new technologies.

The requirement for an impact assessment was recognized in the initial stages of the program's development and funds had been set aside for this purpose. However, objectives for this activity did not appear until later in the program's history when there was increased interest and concern about impact assessment. In a news release on April 12, 1984 about the awarding of contracts for conducting impact assessments, Minister F. Fox said: "One of the most important objectives of the OCS Program is to gain a better understanding of the effects of office automation on people and their organization." While the program had multiple objectives, implementation focussed primarily on the objective of industry stimulation.

There are several issues pertaining to the program objectives which provide a useful context for understanding the implementation problems. These are discussed below.

1. Relationship of Objectives to the Departmental Mandate.

The OCS Program was sponsored by the Ministers of the Department of Communications, Industry, Trade and Commerce, and Status of Women. The objective of developing an industrial infrastructure or capability is within the mandate of Industry, Trade and Commerce. It is not directly related to the mandate of the Department of Communications which has a broad interest in communications but no specific mandate for developing industrial capabilities. The Department of Communications Act of 1970 outlines the following duties and functions of the Minister of Communications:

- a) coordinate, promote and recommend national policies and programs with respect to communications services for Canada, including the Canada Post Office;
- b) promote the establishment, development and efficiency of communication systems and facilities for Canada;
- c) assist Canadian communication systems and facilities to adjust to changing domestic and international conditions;
- d) plan and coordinate telecommunications services for departments, branches and agencies of the Government of Canada;
- e) compile and keep up to date detailed information in respect to communication systems and facilities and of trends and developments in Canada and abroad relating to communication matters; and
- f) take such action as may be necessary to secure by international regulation or otherwise, the rights of Canada in communication matters.

Considering the industrial development objective of the OCS Program, why was it undertaken by the Department of Communications? There were several viewpoints expressed to us by the interviewees. Industry, Trade and Commerce did not have

much interest and involvement in office communications nor did it have a research and development thrust. The Department would soon undergo a major change and reorganization. In this context there was a primary concern with keeping things intact rather than launching new projects. The Minister of Communications had a broad mandate and the Department was considered to encompass a broad concern in the area of communications. In fact, the OCS Program was preceded by Telidon which also had a mandate to assist industry.

2. Focus on Industry Objective in the Field Trials

There is an important implication of this industry objective which deserves mention. The host departments had to tolerate the problems and delays in providing the office automation systems because the program was designed to assist the industry. In a normal procurement, the host departments could have sued the vendors for non-performance and failure to deliver the product contracted. This would have posed a threat to the survival of the projects. However, the industrial development objective provided the rationale for tolerating these problems.

3. Underlying Assumptions of the Objectives.

The underlying assumptions of a program's objectives must be understood to appreciate the rationale for the design and implementation of the program. There was an assumption that the trend toward office of the future would provide such benefits as improved administrative efficiency, increased productivity and reduced overhead cost. This trend was viewed to be driven by technological developments, largely under the control of multinational computer and office equipment suppliers. Success in this area would require strong technical and marketing capabilities as well as the ability to translate users' needs into appropriate products, systems and services. Many of these capabilities, in the view of the proponents of the OCS Program, were resident in Canada (particularly in word processing and telecommunications). The related assumptions are briefly discussed below.

3.1 Compatibility. The problem which the OCS Program aimed to address was spelled out in the 1980 Treasury Board submission as follows:

The fragmentation of production and services among a number of firms means that the equipment produced by them will be incompatible and difficult to integrate into a system. No one Canadian company had the size, resources and expertise to conceive, develop and produce a system in this country comprising several products and services to meet user needs.

The failure to develop a system which permits the integration of compatible products by having industry work in concert would result in the supremacy of major United States based multinationals. The resulting consequence was an estimated trade deficit of \$4.5 billion by the mid 1980's. The estimates were that Canadian industry had the potential to realize revenues of \$10.5 billion by 1990.

The government's role was to provide a test market for the vendors' product after the development stage and before commercialization. Such opportunities were considered to be available to major companies but denied to smaller ones.

The above role is based on an implicit assumption that there are products to test. The challenge was to make them compatible and fit them into a system.

3.2 Social Impacts. The behavioural impact research was based on an assumption that resistance to office automation is a major problem which had to be understood in order to facilitate the implementation of the field trials and large-scale operationalization. The leading-edge research would contribute in a similar way.

3.3 Impact Assessment. A field trial implicitly assumes some form of impact assessment. The lessons learned from the field trial could then be applied to large-scale operationalization of the office communication systems.

3.4 Promotion. The promotion objectives assumed that the field trials would prove successful and communication of the findings would help promote the office communication systems and provide recognition to the Federal Government as the sponsor of the OCS Program.

4. Changing Meaning of Integrated Electronic Office Systems.

Earlier we indicated that the strategic objective for the OCS Program included the development of a Canadian capability for supplying integrated electronic office systems. The meaning of "integrated" among those who were involved in the early history of the OCS Program was that various products could be interconnected into systems by meeting particular functional specifications. This meaning of integration was outlined in the 1980 Treasury Board submission.

The original leaders of the OCS Program left the Department and their replacements did not accept the initial interpretation of "integrated" and this term took on a different meaning in Phase II (although its new meaning was never precisely defined). Integration as reflected in the operation of the field trials was considered to entail the carrying out of several functions at one station. The original interpretation of the objective implied integratable products and the latter interpretation implied a product with integrated functions (e.g., spread sheet, word processing and electronic mail).

The major implication of the changing interpretation of the objective is in relation to the manner in which the field trials were designed and implemented, particularly in relation to the underlying assumption about the need to restructure the industry. This is elaborated later in this report.

5. Conflicting Goals of Field Trial Stakeholders

The main objective of the OCS Program was to stimulate industrial development through the implementation of field trials. Successful implementation of the

GOALS OF FIELD TRIAL STAKEHOLDERS

STAKEHOLDER	PARTICIPATION	OBJECTIVE
OCS Program	field trials research/impact assessment promotion	industry stimulation produce knowledge educate public and promote systems
Vendor	user needs analysis install and field test integrated office system	funding to test and develop system test site first account
Host	provide appropriate test - area - employees - activities	obtain systems recognition as innovator productivity, efficiency gains learn about OA
DSS	process contracts	ensure money is expended according to guidelines
IT & C	co-sponsor fund development no \$'s targetted	recognition as a sponsor fund

field trials required the participation of vendors and host departments, and the cooperation of DSS and IT&C. The goals of these stakeholders in participating in the field trials were at times conflict. The objectives of each group and type of participation required in the field trials are shown in Exhibit 3, opposite.

For vendors, participation in the field trials provided an opportunity to gain experience in the development and application of an integrated office system with a customer of their choice while receiving funding to cover some of the costs. The field trials were also intended to provide the vendor with a first customer who could be used as a reference. Although host departments were aware of the program objective of stimulating Canadian industrial development in office automation, their goals in participating in a field trials were primarily related to perceived benefits which they would derive from involvement such as obtaining "state of the art" equipment customized to their needs, receiving funding for this equipment for several years, and obtaining recognition for being at the leading edge of office automation. IT&C was to provide development funds to the vendors. DSS participation was required to process the contracts for the field trials. Their objective was to exercise a control function - to ensure that money is expended according to guidelines. The ultimate goal of both hosts and vendors was to have a customized functional integrated office system to buy/sell.

Many of the hosts' reasons for participating in the field trials were based on the assumption that operating automated office systems were developed and ready for installation. Without a functional system available early in the field trial period, hosts would not be able to benefit from participating in the trials - e.g. the funding of the equipment, improved worker productivity or efficiency, and a "high profile" as a department of the future. If the systems installed did not function well, the hosts had much to lose - e.g., staff morale, costs of training and retraining staff on the equipment. Although the installation of a functional system early in the trial was in the vendors best interests, the vendor could realize some benefit from the field trial even if the equipment installed did not function well since funding would still be

received for the development of the system and lessons learned from the problems encountered at the host site could be used to guide development.

B. PROGRAM STRATEGY

This section focusses on the program strategy of the OCS Program which includes the following activities:

- . Field trials - provide funds to host departments for field trials which involve a user needs analysis, design/implementation plan, and pilot. Officers of the OCS Program also served a liaison function.
- . Behavioural and economic research - the OCS Program approved and funded research projects; some of these projects were managed by OCS and others were managed by the Behavioural Research Group of DOC. There was also a proposal for leading-edge research activities with a budget of \$9.5 million. The findings of these research projects were expected to contribute toward the development of field trials.
- . Promotion - distribute pamphlets, make speeches, arrange for news releases, and handle visitors.
- . Impact assessment - studies of field trial results, including: productivity, behavioural considerations, operation of the system, and other factors.

Below we discuss the major issues associated with each of the activities which comprise the overall program strategy. We present the consequences of these issues in the next section.

1. Field Trials

The field trials were the major feature of the OCS Program and the other activities were meant to be supportive of the field trials in various ways.

1.1 Changes in the Basic Orientation of the Field Trials.

Earlier we discussed the changes in the meaning of integrated electronic office systems. This was also evident in the basic orientation or thrust of the field trials. The submission to the Treasury Board in 1980 asked for funding in Phase I to cover "one or more contracts to Canadian industry to develop proposed functional specifications for an integrated office of the future system." This submission also stated that a condition for the approval of Phase II was: "industry has organized itself in such a way that the participating companies are working effectively toward the transformation of the functional specifications into specific product planning and development."

A Technical Paper Memorandum produced in 1980 by the Behavioural Research Group showed that the output of Phase I was to be the development of product and service specifications, including the design of: common hardware/software, system hardware, and system software.

The type of field trials described above were not implemented. No serious attempt was made to develop the functional specifications and design a system to guide industry in developing their products. Instead, there were several mini-trials which were essentially in search of an application. Phase I was mainly product rather than systems oriented.

From discussion with the participants, it was difficult to account for the changed strategy from developing integratable products to integrated products. Whether or not the original notion of setting functional specifications for a system was feasible could not be established within the scope of this study. Regardless, there was no serious attempt to develop these functional specifications because of a shift in the overall strategy. There was no research input from CRC technical personnel. Informal contact may have been lessened by the location of the standards group in the research division of DOC under a different Assistant Deputy Minister than the OCS Program.

The original notion of having industry meet functional specifications implied the need to work with a relatively large segment of the industry. This was inherent in the proposal by OCRA (a consortium) which requested the total budget for the OCS Program. Bell Northern Research (BNR) subsequently made a similar request. Senior management in the Department of Communications decided to fund a few trials rather than one large project or, at the other extreme, 25-30 small ones. There were several reasons provided for this decision. It would have been difficult to fund OCRA and to ignore BNR or vice versa. The option of combining their efforts was not seriously pursued. Having several trials would result in aid to more companies and the spread of risk or likelihood of success among these trials.

Once the decision was made to fund several trials, it was left to the vendors and host departments to determine the type of integrated office system should be developed and introduced. In other words, the host departments were given administrative control over the field trials.

The Department of Communications did not have a plan for funding trials to meet its priorities in office communications systems. There was no clear definition of integrated office communication systems and the vendors proposals for the field trials were quite vague in the type of product which it proposed to develop. The meaning of integrated office automation therefore became defined by the vendors and host departments as particular integrated products which could perform multiple functions at one work station. The types of functions reflected the uses which the host departments made of the technology.

1.2 Non-Involvement of Industry, Trade and Commerce.

Earlier we indicated that the OCS Program was co-sponsored with the Minister of Industry, Trade and Commerce and it is generally mentioned as a joint program of the two departments. Yet aside from having a representative of Industry, Trade and Commerce on the Users' Committee, it did not play a significant role in the OCS Program.

A condition of approval for Phase II was: "Companies in the industry approach IT&C for EDP support to develop specific pieces of equipment within the systems concepts defined in the first phase." It was expected that the direct program expenditures would be complemented by \$32 million through existing IT&C cost-shared programs and through office equipment procurement during the life of the project. A press release on November 11, 1980, said that the funding from IT&C for office automation would exceed the \$12.5 million from the Department of Communications.

The vendors did not receive funding support from IT&C for the field trials. There are several explanations which interviewees provided for the lack of involvement by Industry, Trade and Commerce. It did not enter into any formal agreement to support the companies involved in the field trials and the Enterprise Development Program (EDP) which provided support was an independent decision-making body. The program strategy changed and the condition in the Phase I Treasury Board submission for companies to obtain support from EDP to develop products that fit into function specifications no longer applied. The companies felt that they were further along in developing their products than was actually the case. The application process was viewed by the companies as lengthy (about 3 months to process). BNR's corporate policy was apparently opposed to applying for such aid and the Department didn't deal with consortia such as OCRA.

In summary, the assumption that the vendors would receive support from Industry, Trade and Commerce did not actually materialize. The scope of this study did not include interviews with industry and therefore we could not adequately assess the implications this had on the delays and costs to the vendors.

1.3 No Overall Plan for Field Trials

At inception a program is defined by its mandate, objectives, and broad program strategy. For purposes of implementation, mandate and objectives require

specification and the program strategy must be broken down into its operational activities.

The concept of field trials was present in the first proposal for the OCS Program. However, the precise nature and design of the trials were developed after the program was funded. The types of decisions which we discuss as elements of an overall plan include: the number, location, scale, organization, and type of field trials to be conducted.

The discussion below describes some of the program aspects for which the OCS Program did not have an overall plan. The major consequence was that the Program was allowed to evolve according to: circumstances, decisions taken by management on matters that required action, the preferences of vendors and the interests of host departments.

Number of field trials. The decision to fund several as opposed to one field trial was made in 1982. Several concerns guided this decision. Concentrating the funds in a single field trial could have had the potential benefits of encouraging a cross-section of industry groups to join together in a single trial, thus effecting the vertical restructuring of the industry referred to in early documents on the Program. Funding of several independent trials had the perceived advantage of: assisting a number of companies; ensuring that the Program as a whole would not succeed or fail based on a single field trial site; and enabling the testing and comparison of different techniques at different sites (optic fibre, coaxial cable, etc.).

Location of field trials. The strategy to locate the field trials in federal government departments had several potential benefits. First, by hosting trials, federal departments derive some of the benefits of participation noted earlier. Second, federal departments were likely to be more cooperative with the inconveniences of the trials than private sector firms. Additionally, the government does constitute one of the largest domestic markets for office equipment. However, a potential disadvantage to this location is that government offices may not be representative of the

export market which is desired by the industry. The ability to generalize from trials in government departments to the generic private industry office may be limited.

The final selection of specific host departments was left to the vendors. BNR recieved a grant to survey several government departments to identify the department that best fits its needs.

Scale and technical specifications for field trials. A strategy for the scale of the field trials in terms of the number of work stations, and the number and distance between locations within a department, was not developed. These factors were determined when the Memorandum of Agreement between the vendor and host was written. Likewise, technical assistance or standards for the office systems developed and tested were not identified, as originally planned, in Phase I of the program. Although the intention was to examine integrated office systems, the EMR trial does not involve a truly integrated system. It essentially entails automation of an office activity.

Organization of the field trials. The OCS Program was involved in matching vendors and hosts and overseeing the writing of the Memorandum of Understanding but it had no direct line authority over the operation of the trials. Once the trials were initiated, the OCS Program staff functioned as advisors on request.

Type of field trials. The field trials were originally designed to be application research trials to help manufacturers gain a greater understanding of generic office applications. Product development was not felt to be needed. Rather, the expectation was that off-the-shelf stand alone equipment would be linked through minor modifications and software integration.

2. Behavioural and Economic Research

Research on a variety of behavioural and economic topics was planned to provide information to guide the Program and the field trials. The Behavioural

Research Group prepared a Technical Memorandum in 1980 which outlined a comprehensive research plan for behavioural research and provided a flow chart for sequencing behavioural, economic and technical research with the field trials. This report was reviewed by the OCS and 31 research studies were funded by the Program. Of these 12 were managed by the Behavioural Research Group and 18 were managed by OCS Program staff.

2.1 Lack of Social Scientists in OCS Program

Although behavioural research was identified as an important component of the Program, there were no social scientists with expertise in this area on staff until fairly late in the Program (March, 1983). The Program relied on the involvement of the Behavioural Research Group to provide social science expertise. The OCS Program retained decision making power concerning funding of projects while the Behavioural Research provided consultation and managed some research projects. The absence of an allocation of person years to the Behavioural Research Group for participation in the OCS Program during the first few years of the program constrained their participation. The lack of social scientists on the OCS Program contributed to failure to make a linkage between research and the impact assessments and the late recognition of the potential value of integrating research and impact assessment with the trials.

2.2 Strategy for Behavioural Research not Fully Implemented

A strategy for behavioural research was developed in 1980 by the Behavioural Research Group and reviewed by the OCS Program. This strategy was never fully implemented with the result that the full scope of behavioural issues was not covered by the research program.

3. Impact Assessment

An inherent feature of a field trial is some type of impact assessment to measure the performance of the trial, to provide direction for modifying the

activities and operation of the trial as well as to influence decisions about the large-scale operationalization of the field trial in the host department and other organizations. In other words, the field trial provides an opportunity to learn about a particular innovation and the impact assessment is the formal procedure for documenting the lessons learned from a test situation.

3.1 Late Initiation of Impact Assessments

A Technical Memorandum circulated in 1980 by the Behavioural Research Group outlined a strategy for conducting impact assessments of the field trials. However, formal planning for the impact assessments did not begin until late in 1982.

The Request for Proposals required the collection of baseline data by the consultants or the vendors and departments, depending on the stage of the field trial. The purpose of having baseline data is to compare the effects of office automation to a before situation. The Impact Assessment Committee recognized the difficulty of obtaining "scientific truth" but expected "general conclusions to be drawn".

The fact that the impact assessments were initiated late meant that true baseline data could not be collected because there had already been attempts to introduce the technologies in the host departments. The difficulties of implementing a proven and stable technology meant that the impact assessments could not be expected to draw conclusions about the effects of particular kinds of office automation. Instead, the research could only be expected to address issues related to the implementation of office automation.

The field trial at Energy, Mines and Resources had not been fully developed in December 1983 and yet the impact assessment which had the objective of measuring effects was completed. The sunset deadline of March 31, 1985 had to be extended to December 9, 1985 to permit the completion of the evaluation assessments for the other trials. However, the objectives and requirements for

the impact assessments were not formally changed to reflect the revised expectations for the field trials which were experiencing implementation problems.

3.2 Formative and Summative Evaluation

Normally, formative research would precede a summative study. Formative research would facilitate changes to produce a program which would be held constant during a summative study. This would permit the summative evaluation to produce findings about a particular type of program. The terms of reference for the impact assessments called for the conduct of formative and summative assessment simultaneously. This makes it difficult to interpret changes from the baseline situation since several versions of a program may have occurred during the trial.

3.3 Broader Scope

The scope of the information requirements changed during the course of the field trials. The initial interest was primarily focussed on productivity and the operating system. There was a growing concern among interest groups and the general public in broader issues related to office automation such as job content, the role of women, the quality of working life, induced job loss, and other environmental concerns. These areas were included as requirements in the terms of reference for the impact assessments which provided justification for increasing the budget for those studies twofold.

4. Promotion

The public awareness portion of the OCS Program was implemented through:

- the production of information, brochures and pamphlets on office automation;
- yearly public meeting on office automation;

- . the provision of speakers, slide shows, video tapes on office automation and the OCS Program at conferences, conventions and meetings;
- . booths at conventions;
- . the publication of research projects conducted by the OCS Program;
- . the publication of a directory of office automation services in Canada;
- . a newsletter on the OCS Program; and
- . the maintenance of a library of information on office automation.

As the program and office automation technology developed, requests for information increased and requests from other government departments for advice on the selection, purchase and installation of integrated office systems at times placed strains on the program.

5. Leading-Edge Research

The Technical Memorandum (1980) prepared by the Behavioural Research Group in the Department of Communications outlined the need for leading edge analysis of behavioural problems as they occur in organizations at the leading edge, or forefront of office automation. The results of this research were expected to influence the development and assessment of the field trials. Yet the need for funds to conduct leading-edge research was described in the second Treasury Board submission. The estimated cost of \$9.5 million was to be submitted as a separate request. The funding was never requested for leading edge research.

C. CONSEQUENCES

This section presents the consequences of the implementation process. We do not attempt to establish whether or not these consequences are evidence of

program success or failure. Rather, the aim is to simply identify the implications of the important implementation issues which were discussed in the previous sections.

1. Delay of Field Trials

One consequence of the implementation of the OCS program was the delay of the field trials. The field trials which were planned for a two-year period, continued for three to four years and two trials are still underway. Several implementation and program design factors may be related to this delay in the field trials. The most frequently cited reason for delay is that the technology development required more time than was planned. Several other aspects of the program implementation appear to have also delayed the field trials. These include: DSS contracting problems; changing personnel in host departments; changing technology; and changing expectations of host departments. Each of these factors is discussed below.

1.1 Development of the Technology

Both the OCS Program and the vendors misjudged the state of readiness of the technology and the development time required. Time, expense and testing required to both develop components and integrate the office systems were greater than originally anticipated.

Delays in developing the technology resulted in delays in the field trials and a reorientation of the field trials from application trials to development trials.

1.2 DSS Contracting Problems

There were difficulties in reaching an agreement between DSS and the vendors on contracting procedures. The lack of an appropriate contracting category for the field trials complicated these negotiations. Procurement contracts were possible and would have been appropriate if the trials involved existing

office communication systems. If contribution funds were used, the product produced would be owned by the vendor. An agreement was reached in the end which gave the government ownership of any technology and knowledge produced in the trials but gave the vendor license to produce and market the products developed in the field trials.

Delays in reaching an agreement on the DSS contracting procedures forced some vendors to risk investing their own resources and begin modification of their integrated office system in the hope of receiving a finalized contract.

Delays in implementing the field trials at some sites resulted in cash flow problems for the vendors. In most of the field trials payment to the vendors was based on a series of deliverables. When the delivery of these products was delayed, the vendor did not receive a payment at the anticipated time.

1.3 Changing Personnel in the Host Departments

During the lengthy field trial period there was a turnover of personnel at the host departments. A major consideration in the selection of host departments and the matching of vendors with host departments was the enthusiasm and commitment of the specific departmental personnel who would be involved in the supervision of the field trial. Personnel changes during the course of the trials resulted in the replacement of these key departmental officials.

1.4 Changing Expectations of Host Departments

During the lengthy start-up period of the field trials, the available technology was changing and along with it the expectations of the host departments. For example, the development of improved graphics capabilities and personal home computers led some to expect that these would be included in the trial.

2. Industry Not Restructured

We have described the major change in the program strategy from developing functional specifications for an integrated office system to guide industry in developing products to fund separate field trials which involved the development of integrated products. The initial strategy required a restructuring of the industry to work in concert. The changed strategy and revised definition of integrated office automation systems represented a sacrifice in the original objective of restructuring the industry.

During the course of the study we heard mixed views about how realistic it was to expect the development of functional specifications for the industry to follow. Those who considered it unrealistic claimed that this integrated system was never clearly defined and Canada could not set the industry standards. Regardless, the changed program thrust represented an abandonment of pursuing the objective of restructuring the industry.

3. Scope and Methodology of Impact Assessments

The impact assessments were limited in their scope and methodology, considering their original objectives. The delays in implementing the field trials and the impact assessments meant that many of the impacts (e.g., organizational, human, and social) could not be assessed in relation to the office automation field trials. The methodology of the impact assessments could not provide an adequate basis for measuring change and attributing impacts to a particular type of product. Instead, the impact assessments were limited to examining systems performance, identifying users' needs, and accounting for implementation problems. The change in scope and methodology meant that the original objectives of the impact assessments could only be realized to a limited extent. Whether or not the size of the budget provided to meet the original objectives was "appropriate" for the changed scope and methodology and whether value-for-money will be received were not examined within the scope of this study.

D. LESSONS LEARNED

This implementation analysis of the OCS Program provided an opportunity to learn lessons for future field trials. The points presented below also constitute the major conclusions of this study.

1. The specificity of the primary objective (i.e., industrial development) facilitated implementation. Program objectives are often too vague for planning, managing, and evaluating programs. The industrial development objective provided justification for the funding arrangements and working relationships between the vendors and host departments. Problems in developing the technology and introducing stable systems on schedule were tolerated to accommodate the objective of industrial development.
2. There is a need for an overall framework. A program involving field trials is complex and requires a framework for the field trials (number, nature, size, and location) and their relationship to behavioural and economic research, impact assessments and promotion. Without a framework there is little basis for planning and managing the program to ensure the achievement of the program's objectives. For example, a framework could have included provisions for linking the impact assessments and behavioural/economic research to the design and operation of the field trials.
3. There should be planned decision points. It is inevitable that innovative programs in a dynamic and complex environment will not be implemented in the prescribed manner. In fact, adjustments may be required to address unanticipated events and circumstances. Planned decision points provide the opportunity for formal reviews to make program changes. Otherwise, issues may not be recognized at an early stage to make required changes. For example, the shift in the orientation from developing functional specifications to integrated work stations should have been formally addressed since this had major implications for the field trials.

4. The feasibility of a program requires careful analysis. Whether or not the "idea" underlying the program is implementable should be thoroughly reviewed before proceeding. A feasibility analysis would have required greater specification of "integrated office systems" and more detailed review of the proposed technology. This would not necessarily have eliminated the problems which occurred since there is always an element of risk in such programs. However, the degree of risk could have been reduced through a more thorough feasibility analysis.
5. Formal agreements should be developed to formalize cooperative arrangements among departments. The successful implementation of programs often depends on the cooperation of other organizations such as different departments or levels of government. The OCS Program was expected to be supported by Industry, Trade and Commerce's Enterprise Development Program. However, this support did not materialize. Developing agreements to formalize cooperative arrangements is needed to clarify understandings and to establish procedures for ensuring that the terms of agreement will be met.
6. The sunset nature of a program encourages timely completion. The sunset nature of the program had an important influence on management to meet time deadlines. The program generally moved from stage to stage according to plans. The unanticipated difficulties in developing the technology created delays in the field trials but the sunset provisions created pressures for completing the field trials and the impact assessments. In the absence of a sunset clause it is likely that the Program would have gone far beyond the planned time frame.
7. Greater security is needed for staff employed by sunset programs. It is difficult to attract qualified staff for sunset programs unless there are guarantees for continued employment afterward. Such guarantees would make it easier to hire permanent staff who could concentrate on their work without fear about future employability.

8. There is a need to ensure the presence of staff qualifications for each area of the program. The absence of social scientists had important implications for two program components: (1) behavioural and economic research; and (2) impact assessments. This resulted in the failure to integrate these two components more fully with the field trials in terms of the scope and timing of these activities.

9. It is important that vendors are accountable to users. The transfer of funds and authority to the host departments was an important feature of the OCS Program. This made the vendors directly accountable to the users rather than an intermediary. The numerous issues which emerged had to be resolved between the two principle parties and this appeared to facilitate the implementation process. Program participation could have been maintained if the client had been made responsible to the program through multiple signing levels.

INTERVIEW GUIDE

DEPARTMENT OF COMMUNICATIONS

INTERVIEW GUIDE

IMPLEMENTATION ANALYSIS - OCS PROGRAM

A. RELATIONSHIP OF PROGRAM STRATEGY TO OBJECTIVES

- A1 What, in your opinion, are the objectives of the OCS Program? Are these objectives appropriate for a program in DOC?
- A2 What is your understanding of the OCS Program objective "to develop an industrial capability in Canada for an integrated electronic office system"?
- A3 Did the objectives, in your opinion, for the Program change over time? How?
- A4 To what extent was there a need to have several companies involved in the same trial to address the concern that: "The fragmentation of production and services among a number of firms means that the equipment and services produced by them will be incompatible and difficult to integrate into a system. No one Canadian company has the size, resources and expertise to conceive, develop and produce a system in this country comprising several products and services to meet user needs." (T.B., 1980)
- A5 What was the rationale for multiple trials with different companies? Implications for development of integrated systems?
- A6 Was the Program initially meant to be an application or a developmental trial? Did a shift occur from application to development? Why? (Note: T.B., 1980 said that OCS will support "more advanced and completely integrated systems.")

A7 Phase I was to include "one or more contracts with industry to develop proposed functional specifications for an integrated office of the future system (i.e., describing what a piece of equipment or system should do, but not how it is to be done)." (T.B., 1980)

- . Was this to serve as the plan or framework for selecting or designing field trials? (see q. C1)
- . Do you feel that proposed functional specifications were developed in phase I?
- . Why isn't there reference to the accomplishments or failures in developing such specifications in discussions of Phase I achievements in T.B. submission of 1982?
- . Implications of not having such specifications (e.g., trials are defined by vendors and departments, not the OCS Program)?

A8 Do you think the field trials were the best way to achieve the OCS Program's objectives? Why or why not? What other alternatives are possible? (as stated in q. 1).

B. COMPATIBILITY OF GOALS AMONG STAKEHOLDERS

B1 What were the goals of the stakeholders (DOC, vendors, and host departments)?

B2 Did the goals change over time? How?

B3 To what extent were their goals in conflict?

B4 Did conflicting goals among stakeholders affect program implementation?

C. INVOLVEMENT OF ITC

C1 Reference is often made to the cooperation of Industry Trade and Commerce. Also, a condition for the second phase was that: "companies in the industry approach ITC for EDP support to develop specific pieces of equipment within the systems concepts defined in the first phase". (T.B., 1980)

There were anticipated expenditures of \$32 million through existing ITC cost-shared expenditures.

- . What were the formal arrangements with ITC for the Program?
- . Why didn't the participating vendors receive support?
- . Implications of not receiving support?

D. ACTIVITIES NOT IMPLEMENTED

D1 Were there particular activities identified in the Treasury Board submissions which were not implemented at all? Reasons? (Include development of functional specifications and cooperation with ITC, Probe leading edge research)

E. IMPLEMENTATION PROBLEMS

E1 Was there a plan which outlines the implementation process for the field trials?

E2 To what extent were the field trials implemented as planned? What were the departures from plans? (Delay is a major departure.)

E3 What accounted for the implementation problems of the field trials? Probe factors below:

- . Program design - sunset provision, program activities.
- . Management issues - included e.g., staffing problems (account for 5 month delay in Phase I - T.B., 1980).
- . Funding from DOC.
- . Environmental factors - changes in the economy, technological developments, concerns of interest groups.
- . Problems with the vendors - e.g., financial instability.
- . Role of DSS.

- . Host Departments - staff turnover, unwillingness to accept the technology, etc.
- . Role of OCS Program - i.e., consultation.

E4 What were the consequences of the implementation problems for the field trials? Probe:

- . quality of the trial;
- . acceptability by host department; and
- . cooperation and support of vendors.

E5 To what extent did the technologies implemented in the field trial reflect what was outlined in the Memoranda of Understanding and in the DSS contract?

E6 Repeat questions 1 to 4 for the impact assessment activity?
(Probe E3 when did you become aware of the need for impact assessment? Why was the impact assessment initiated after field trial activity had begun? How was the budget determined and why was it revised?)

E7 Repeat questions 1 to 4 for the public information activity?

E8 Repeat questions 1 to 4 for the behavioural and other research activity?

F. COST TO HOST DEPARTMENTS

F1 What was the cost of the field trials to the host Department (not including DOC funds)?

F2 To what extent did the cost to the host department exceed their estimated cost?

F3 What accounted for the extra costs?

G. COST TO VENDORS

- G1 What was the cost of the field trials to the vendors (not including funding from DOC through host departments)?
- G2 To what extent did the costs of the vendor exceed their estimated costs?
- G3 What accounted for the extra cost?

H. FULL-SCALE IMPLEMENTATION IN HOST DEPARTMENTS

- H1 What are the prospects of full-scale implementation of the technology tested by the host department? Why?
- H2 Have funds been sought and obtained by the departments for operational phase?

I. ORGANIZATION

- I1 Did the organizational structure for the OCS Program significantly affect program implementation?
- I2 Were there particular changes in organizational structure which had specific influence on program implementation?
- I3 To what extent did the committees (such as OCS Users Group, Industry Consultative Committee, and Impact Assessment Committee) influence the selection of the field trial strategy and the identification of objectives? Did the committees influence the implementation process? Elaborate.
- I4 Why was the impact assessment activity moved under the manager of the OCS Program? Implications?

