OCS USERS' GROUP

COMMUNICATIONS TECHNOLOGY SUB-COMMITTEE

PROGRESS REPORT

G. HENTER

CHAIRMAN

MARCH 2, 1982

Government of Canada
Department of Communications

Gouvernement du Canada
Ministère des Communications

2. OCS USERS' GROUP

COMMUNICATIONS TECHNOLOGY SUB-COMMITTEE

PROGRESS REPORT

1. Canada. Dept. of Communications,
Communications Technology Sub-Committee

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I   Introduction

This report is intended to provide an overview of the activities of the
Communications Technology Sub-Committee since its inception in November,
1981. Based on observations both from discussions with government user
departments, represented as members in this Sub-Committee and factor
analysis from other sources, preliminary conclusions are offered in the
area of office communications technology as related to its applications to
meet government operational and program delivery requirements.

II   The Communications Technology Sub-Committee - Summary Report

The Sub-Committee, established in November 1981, has now members representing 11 federal departments and agencies. The terms of reference proposed for the Sub-Committee were reviewed with and approved by the Users' Group. Within the approved terms of reference, as suggested by the Chairman of the Users' Group, the Sub-Committee sets its priority on two of its responsibilities. They are:

a) to assess users' needs in the public sector for the application of Information and Communication technologies in the office environment. The broad nature of the needs will be categorized. As an objective, the level of these needs, including security aspects, will be identified in such terms that the size of the potential aggregate government market will be indicated to influence and support the development of Canadian industry.

b) to evaluate major current or likely future systems, technologies and service offerings in the field of office communications in relation to the different office needs. The objective is to identify areas where appropriate actions and further developments would be required by the users and the industries.

The action plan formulated to meet the mandate of the Sub-Committee basically describes the activities required to develop a classification of government users office communications applications and such commonalities to which appropriate but specific technological solutions could be applied. The trends of office communication technology and service development will be studied to identify the most suitable potential technologies and services for the various classfications of user application requirements identified.

Potential government market and level of demand would be estimated by means of identification of the level of government expenditures most likely to be affected by the application of communications and information technologies.

The importance of a common approach in the government respecting the method and criteria for the evaluation of office communications systems and performance is also recognized. Studies will be implemented to achieve these and other objectives as defined in the terms of reference.

The planned activities, as described above, are being carried out in earnest by the members of the Sub-Committee. The merits and requirements of a professional consultant to supplement the expertise of the members and to perform some of the leg work were also reviewed. The use of such consulting support is anticipated subject to resource availability.

Individual members described related activities in their respective areas. Also, on request, the Government Telecommunications Agency has presented and discussed with the members of the Sub-Committee its planning strategies and activities relevant to the planning and development of office communications in the government.

Based on the activities and discussions of the Sub-Committee and the experience of its sponsoring members, the following are relevant observations and some preliminary conclusions concerning the evolution of use of office communications technology in the government.

Appended to this report is also a description of the approach adopted by the Sub-Committee and the specification of the activities planned.

III   Observations

1. Information Technology and Program Delivery

Discussions with government users on their office communications
requirements and a review of the various classifications of
applications led to the observation that:

- the significance of office communications and related technology is
  growing beyond its traditional role of adminstrative supporting
  resource and is opening new possibilities and horizons for the
  nature of government program delivery and operation.

In fact, it is envisioned that certain programs will become virtually
undeliverable without the effective development of communications
technology within the government.

Recognition of the above may be viewed as the axiom for decisions on
strategy and approach for the planning and implementation of office
communications technology on a government-wide basis.

2. Government Office Communications (User Requirements) Market

Because of the enormous existing and potential size of government
expenditures on office communications it is important, both to the
government and the industrial sectors, to identify the government user
requirements together with the levels of demand for these
requirements.

Government departments generally identify and express their
requirements for office communications at the departmental level. For
this reason, the government office communications market tends to be
perceived as quite segmented.

Based on further analysis however, it can be concluded that, because
of the potential commonality of these requirements to all departments
and due to information interconnectivity requirements within the
government, a single government-wide office communications market
exists which is layered for various classes of needs.

Based on information presented to the Sub-Committee, the following
requirements have been identified as primary government markets for
the near and medium terms.

i)   Applications of Communications Technology

   a)   Improved Telephony Features & Capabilities

        Improved user oriented telephony features and capabilities
        are still viewed as possibly the largest potential
        government market in office communications. Users have
        generally recognized the advantages offered by advanced
        telephone technology to improve general government operations
        and effectiveness.
        For the next few years, existing and planned enhanced
        government telephony services are still expected to function
        as the basic support network vehicle for many of the office
        communications applications in the government.

        Demand by departments for electronic PBX's and new "Centrex"
        services has confirmed this.
        Implementation of these user capabilities in the government
        will impact on the directions and forms of other office
        communication applications in the government.

   b)   Text Communications

        This is a common government requirement for communications
        of textual material in the form of pre-edited reports, and
        other types of correspondence.

Most departments have now years of experience in the use of electronic text editing systems (i.e. Word Processors). Communications and networking between these (existing resources) stand alone word processors, is now evolving and is viewed as potential government-wide application.

c) Data Base Access & Electronic Filing

This is a common government requirement to permit the access, electronically, to government data bases by authorized users regardless of the locations of the computers housing these data bases and the communications protocols (procedures) used.

d) Personal Messaging

Interpersonal communications or messaging by electronic means (in a non-voice and non-real-time way) is an area receiving most attention by both the users and potential suppliers. If the alleged potential productivity gain is proven, there will be significant usage of this technology and services, and hence a potential large government market.

e) Teleconferencing

Combination of audio teleconferencing and other electronic messaging applications is emerging as an effective and viable form of office communications applications in the government.

ii) Networking

Consideration of appropriate and matching communications networks is essential for any development of applications of communications technologies in the government.

The notion that telecommunications is the binding agent of information systems and activities is key to the effective applications of office communications. Information networking, both in the electrical and procedural senses, requires efficient and effective use of telecommunications resources.

The following highlights the major government network markets.

a) Intra-office Communications

The term Local Area Networks is used to describe the interconnection of systems within a building in a geographically closed area. The traditional PBX type arrangement, with enhanced capabilities in the current generation of available equipment, will be used by the government users in the foreseeable furture. Suitability for the replacement of these arrangements by coaxial cable, fibre optics and other cable type systems has not yet been demonstrated to the users.

b) Inter-Office & Intra-City Communications

The existing telephone network, with certain enhancements based on digital technology, will continue to be the primary support for the majority of office communications between offices within the same city.

c) Inter-city Communications

This is a large market in terms of the size of expenditures. In addition to optimizing the use of existing terrestrial network facilities including telephone and data network services, potential roof-top to roof-top communications networking via the use of satellite technology is emerging as a viable and cost effective alternative. Combining the latest TDMA (Time Division Multiple Access) technology with

satellite communications, this form of networking appears to be very cost-effective (as demonstrated in its increased application in the U.S) and permits integration of voice and data communications. Planned Government field trials by GTA and major departments in this area should provide further relevant information regarding the use of this technology.

iii) Terminals

Government user requirements for office communications terminals are identified to have the following general characteristics:

a) the terminal supports integration of various office functions,

b) the terminal supports "mixed mode operations", i.e. for communications of both character coded and non-character coded texts, and

c) the terminal is equipped with government-wide standardized communications protocol.

3. Communications Technology Capability & Resource Management

The following are common government concerns relevant to the evolution of use of communications technologies in the government.

a) In order to accomodate the increase of information activities in the government, adequate bandwidth (continuous channel capacity) and switching capability will be required at all levels in the government networks to meet traffic growth and new applications requirements.

b) Capability to integrate data, voice and image communications for both existing and new applications is a prerequisite for deriving improvement in efficiency in the use of communications facilities.

c) Based on software oriented management technologies, the proper use
    of latest technology should permit improvement of the efficiency
    of use of telecommunications resources and thereby further enhance
    the effectiveness of the applications of office communications
    technologies.

The above concerns need to be addressed with proper coordinated
planning on a government-wide basis.

4. <u>Planning & Implementation Strategies</u>

Based on the availability of various communications technologies and
related products, there are various available alternatives for the
application and implementation of office communications.

The alternatives are within the two extremes between centralized
and distributive intelligence based applications and systems.

Current or potential implementation of office communications
applications and technologies by government departments will fall
within the following general schemes:

a) the use of centralized (EDP) computer based systems to provide
    office communications capabilities where work stations
    (terminals) will have minimum intelligence (capabilities)

b) the use of centralized common carrier network based office
    communication services providing interconnectivity between
    various types of work stations,

c) interconnection of intelligent work stations (e.g. communicating
    word processors) using ordinary communication networks,

d) interworking of combinations of the above alternatives.

Again, the government-wide commonality of the approaches and the need
for ordered compatibility within the government are required.

5. Departmental and Government-wide Initiatives

For the purpose of this report, initiatives concerning the planning and implementation of office communications technologies in the government may be described and characterized as follows:

a) Many departments are now engaged in planning for the implementation of various forms of office communications systems as departmental initiatives. There is a varying degree of readiness and capability in the departments for office communications applications. On a government-wide basis, the GTA has implemented activities to plan and develop government office communications networks and services in support of these departmental initiatives and for the support of departments where such capabilities are required.

b) Departments initiating office communications development activities will be generally selecting the systems/technologies perceived to be most appropriate for their own use. They are all attempting to identify the most state-of-the-art technology for their applications. They rely, in varying degree, on information provided to them by the vendors. They have indicated the desirability of a focal point where comunication technology expertise on office communications could be obtained for consultation purposes.

c) Departmental initiatives are generally limited to some specific objectives along functional lines with interconnectivity constraints limited to the requirements of the specific functional objectives. While the functional objective generally ensures that the initiative is driven by established needs for increased efficienty and effectiveness, the limitations placed on interconnectivity requirements could become the source of serious problems in subsquent steps for future integration of systems and resources.

d) To date, both departmental and government-wide initiatives are primarily based on communications networking capabilities and requirements (e.g. networks of terminals linked to data bases, communicating word processors, etc.) as opposed to more localized objectives such as the integration of functions at the level of work stations.

IV Preliminary Conclusions

Based on our experience to date, the following preliminary conclusions were formulated:

a) In the implementation of office communications systems, three levels of planning strategies may be identified:

i) Introduction of office communications applications and networks using to the greastest extent possible, existing government resources where incremental costs would be justified by incremental benefits obtained,

ii) Introduction of innovative office communications in pace with technology development of the national industry, and

iii)introduction of ultimate government-wide capability to permit communications between any government office communication work station/system.

These strategies are based on the notion that common, universally accessible networking of office communications work stations/systems is fundamental to the attainment of government-wide office communication capabilities.

b) Because of the great degree of commonality in user requirements and information interconnectivity, requirements within the government office communications applications on a government-wide basis will permit the benefit of using the technology by all departments regardless of size and technical capabilities.

c) Procedures and mechanisms are needed to support these approaches in a manner that will encourage departmental initiatives and assist such initiatives through the development of an overall framework including networks, standards and guidelines which will permit departmental systems to grow efficiently and graciously (i.e. without the need for fundamental changes in design and development).

d) There is an urgent need to identify, characterize and quantify in broad terms the overall government requirements (market) for office communications technology that will permit:

- an effective dialogue with Canadian suppliers so that they can implement strategies to meet the needs of government,
- the organization of the government market in order to derive economies of scale for government users to benefit from cost reductions and for Canadian suppliers to improve their competitive position,
- the early development of overall guidelines, specfications and standards that will guide departmental initiatives and keep them compatible on a government-wide basis.

e) It is envisioned that the following issues will require conscious decisions from time to time:

i) the rate of implementation of OCS technologies, i.e. the balance between incrementalism and substantial up-front investments, and the balance of incremental introduction of innovative office communications on a broad front as compared to massive deployment of technology for selected government programs,

ii) organization of the effective aggregate office communication-related government expenditures to support the development of national industry,

iii) balance between policy to maximize internal efficiency and objectives of national industry development,

iv) organization and maintenance of a focal point for communications technology expertise in government to support departmental planning and development initiatives.

Our preliminary conclusions confirm that the initial direction and
priorities taken by the Communications Technology Sub-Committee are
consistent with the needs for effective and efficient development of OCS
in the government and the needs of the related decision process. It is
also recognized and emphasized that there are many aspects that are
closely related to and will need close coordination with the work of the
other sub-committees under the OCS Users' Group.

APPENDIX

COMMUNICATIONS TECHNOLOGY SUB-COMMITTEE
WORK ORGANIZATION AND DESCRIPTION OF ACTIVITIES

Communications Technology Sub-Commitee
Membership List

G. Henter	Chairman	
	Dept. of Communications/Government Telecommunications Agency (DOC/GTA)	
D. Sum	DOC/GTA	
V. Grebler	DOC/GTA	Secretary
G. Boyd	Dept. of Communications/OCS Program	
T. Cummins	Revenue Canada - Custom and Excise	
S. Kay	Employment and Immigration Canada	
P. Pochailo	Revenue Canada - Taxation	
W. Bahen	Revenue Canada - Taxation	
P. Larose	Supply and Services, Bureau of Management Consultants	
S. Seith	Supply and Services - Supply	
T. Massouras	Supply and Services - Supply	
P. Boudreau	Dept. of National Defense	
R. Deault	Dept. of National Defense	
R. Tharp	Statistics Canada	
F. Gobeil	Secretary of State	
D. Forgues	Energy, Mines and Resources	
W. Scarth	Royal Canadian Mounted Police	

FOREWORD

This document reviews the activities of the Communications Technology
Sub-Committee in the period of November 20 1981 to February 23, 1982. It
provides brief overview of the Sub-Committee organization, terms of reference,
objectives and method of work.

Part 1 elaborates in greater detail on the approach and the areas of activities
required to meet the objectives of the terms of reference and current status of
some of these activities.

Part 2 contains copies of documents developed by the Sub-Committee in the course
of execution of the action items described in Part 1.   These include a
tentative action plan, office communication questionnaire, terms of reference
and statement of qualifications to contract for consulting services.

PART 1

I   TERMS OF REFERENCE

Within the mandate of the Office Communications Systems (OCS) Users' Group, the Communications Technology Sub-Committee is assigned the following responsibilities:

a)   to assess users' needs in the public sector for the application of Information and Communication technologies in the office environment. The broad nature of the needs will be categorized. As an objective, the level of these needs, including security aspects, will be identified in such terms that the size of the potential aggregate government market will be indicated to influence and support the development of Canadian industry.

b)   to evaluate major current or likely future systems, technologies and service offerings in the field of office communications in relation to the different office needs. The objective is to identify areas where appropriate actions and further developments would be required by the users and the industries.

c)   to determine the current extent and desirable degree of interconnectivity of office communication information systems in the public sector.

d)   to recommend areas where pilot activities would be useful.

e)   to develop general methodology for the specification and evaluation of office communication information systems, in collaboration with the other committees.

f)   to develop functional specification and criteria for standardization of office communications products and communications between these products. The objective of the functional specifications is to assist market and product development by the industries rather than for procurement purposes by the user departments.

The work will be carried out with the staff resources of the DOC and the Sub-Committee members. External professional services, as required, will be identified by the committee chairman for funding by the DOC OCS program. The Sub-Committee is chaired by G. Henter, Director General of

Government Telecommunications Agency and has membership representation from 11 federal departments and agencies.

II   WORK ORGANIZATION

At the November 20th meeting, the Sub-Committee established an Ad-Hoc Working Group to develop action plan to discharge the responsibilities of the Sub-Committee. The Ad-Hoc Working Group had since become a working body of the Sub-Committee to carry out it proposed action plan and to present its findings for review and approval by the Sub-Committee.

III THE APPROACH

To assess users' needs and evaluate the impact of technological development in the field of office communications in relation to these needs, two alternate approaches were identified and considered.

The first was to identify, define and categorize the various perceived user office communications needs and the corresponsding indicators to reflect the level of demand of these needs. With the appropriate methodology such as usage of questionnaires, interviews, factor analysis, etc., the level of present and anticipated demand could be identified on individual and aggregated basis for the specific categories of needs. Growth projections could then be applied to determine level of expansion.

Parallel evaluation of office communications and information technologies (present and planned) would identify the applicability of implementation of specific systems and services to the identified user's needs. The transposition of needs versus system alternatives could expose technological gaps to be identified to the industry.

While providing reasonably accurate image of user's real and perceived needs, this approach does not take into account new demands that would be created by the availability of innovative technological solutions.

In other words, this approach is essentially demand driven and may not provide sufficient weight to the supply factor. It also requires elaborate surveys of a wide base of Government departments.

The second approach was to define the long range user requirements and objectives on the basis of analysis of office communications and information technologies development trends, i.e. emphasizing the supply aspect. The degree of penetration of the technological change and the usage of new applications would depend on many socio-economic factors such as fiscal policies, the availability of expansion capital, resources, behavioural aspects and others.

By means of identifying the target percentage of usage of these new applications in the government, the scope and size of a potential shift of use of government resources could be identified.

Based on the level of overall government resources and expenditures as a reference, the size of government market and the level of demand for office communications systems and applications could then be estimated and forecasted.

In summary, this approach emphasizes the supply aspect in the way of potential utilization of existing and new technologies. It relies on the availability and accuracy of the global government data, the precision of the economic model, and the reliability of various factors affecting the level of penetration. This approach however does not require extensive surveys.

Following the review of relative merits of the above, the Sub-Committee has adopted the following approach and planned activities.

A) AREAS OF ACTIVITIES

Three major areas of activities will be required.

1. The review of users' needs (demand aspect) which includes classification of requirements into major categories according to users' profiles, content of information, purpose and type of application, organizational networks and other criteria.

2. The review and classification of present and likely future trends in development of information and communications technologies and services in relation to users' requirements (supply aspect).

3. The review and assessment of size of the government market from the point of view of resource utilization using traditional technology and the potential shift resulting from the introduction of new technologies.

Various methodologies will be required for each of these activities.

The following paragraphs provide further breakdown of the specification of work within these three areas of activities.

1. Users' Demands Classification

1.1 Identify major classes and categories of users' requirements and profiles related to office communications according to the following criteria:

- Target user groups: secretarial, clerical, professional, managerial, etc.
- Organizational networks: vertical vs horizontal, inter/intra departmental, provincial/federal governments, general public, private organizations, etc.
- Functional applications: administrative service to the public, statistical, scientific, educational, etc.
- Information content voice and format: messages, letters, forms, publications, data, graphics, video, etc.
- Performance requirements: speed, reliability, security, etc.
- Demographic and geographic distribution
- Other criteria

In spite of considerable diversity of departmental objectives, organizational structures and programs, there are many common denominators in the range of operational and administrative functions performed in each of the government departments. The classification of these provides the first step in identifying users' requirements.

1.2 Identify "generic" types of users' applications such as:

- Personal messaging (voice, data, teleconferencing)
- Text communications (letters, publications, manuals)

- Graphic communications (videotext, teletext, facsimile)
- Interactive on-line processing (forms, transactions, information retrieval, computation)
- Others

This higher level of classification provides easier target to be identified with technological developments than specific users' applications.

1.3 Develop a matrix of links and relationships between "generic" types and classes/categories of user requirements. The relationship structures would provide a guideline for quantification and aggregation of the level of demand of specific user's needs into "generic" categories to which technological solution could be applied.

2. Supply Classification

2.1 Classify areas of office communications and information technologies and assess development trends of each. The following are some typical areas for consideration:

    2.1.1 Common Carrier Networks and Services:
- End-to-end digital networks
- Satellite communications
- Fibre Optics
- Value-added network services (messaging, electronic mail, text communications, etc.)
- Interworking of networks
- Access to local area networks
- Videotex/Teletex
- Others

    2.1.2 Development of office equipment:
- Enhanced word processors
- Graphic display terminals
- Facsimile
- Optical Character Readers
- Voice digitizers and storage devices
- Multi functional work stations
- Video disks
- Telidon terminals
- Others

    2.1.3 Development of network devices:
- PBX's, CXB's
- Local area network interfaces
- Integrated network management
- Others

    2.1.4 Computers/Microcomputers
- Microcomputer Systems
- Office Communications Software Systems
- Distributed processing
- Others

2.1.5 Standards Development Impact
- CCITT, ISO, IEEE, etc.
- OSI

2.2 Define possible office communications systems and configurations and assign relative weight to various components in these configurations. This step provides higher level of classifications which could be related to the specific generic applications.

2.3 Estimate potential per unit cost trends of the new services both from historical and projected perspectives to indicate implications for future "mix" of related factors of production to support office communications. The future "mix" would be considered in related to potential levels of use and penetration of the new technologies and services (Refer to par. 3.2).

Some of these factors include cost estimates of:
- transmission
- storage
- processing
- operation

2.4 Develop a matrix of links and relationships between the available and likely future office communications systems and the "generic" types of user's applications considering functional, operational and economic points of view. Identify potential areas of penetration of new technologies relative to user's applications.

3. <u>Level of Demand and Government Market Size Assessment</u>

3.1 Identify current and planned overall government expenditures in financial and human resources specifically in areas most likely to be affected by office communications and information technology. These areas are closely related to the "generic" types of applications identified earlier. Some of the examples are:
- Text communications (mail, courrier service)
- Personal messaging (voice, Telex/GDNS, facsimile)
- Travel Budgets
- Data collection, preparation, processing, distribution
- Others

Since most of the information is required on a government-wide basis, the potential sources could be the EDP and Telecommunications annual reports, Central Agencies (DSS, GTA, PSC, Treasury Board and the Office of Auditor General) and other available sources.

3.2 Determine and quantify factors that could affect the potential level of penetration of new technologies:
- Government objectives
- Fiscal policies and availability of financial resources
- Human resources
- Cost of new technologies
- Potential productivity gains
- Behavioural aspects, labour relationship, training curves
- Critical mass effect
- Timing and scope of pilot project
- Public relations, advertising
- Others

3.3 Identify domains where probable shift of resources may occur by switching from conventional to the new technologies.

3.4 Using available economic models and considering factors identified in 3.2, determine and quantify the level of penetration of the new applications and estimate the level of resources shifted from traditional to new technologies.

3.5 The level of these resources could provide industry with the potential size and scope for investment in new technologies.

B) WORK EXECUTION

To carry out the demand and supply classification activities the
following are anticipated:

- Review and analysis of existing literature on related subjects.
- Consultations with limited number of key personnel in major departments
  and agencies.
- Consultation with representative of key office communications industries
  and Common Carriers.
- Review of outputs by the Sub-Committee.
- Consultations and liaison with other Sub-Committees of the OCS USERS'
  and INDUSTRY groups.

To carry out the market size assessment phase of activities the following
are also anticipated:

- Collection of input from current government expenditure data and
  projections for the next 5 years. (EDP & Telecommunications Plans,
  departmental forecasts and other sources).
- Soliciting departmental input from the members of the Sub-Committee.
- Sampling of limited number of key departments by means of surveys, or
  questionnaires or interviews.
- Economic analysis based on existing models.
- Circulation of reports to members of the Sub-Committee.

C. RESOURCES

Human resources which are required to carry out the above mentioned activities will be provided by the Sub-Committee members.
A professional consulting service is also anticipated to supplement the expertise of the Sub-Committee members and to carry out more time consuming but specific tasks.

IV   CURRENT ACTION ITEMS AND STATUS

On the basis of the identified approach, the Sub-Committee has adopted
the following action items to be carried out by the Ad-Hoc Working Group.
The findings will be reviewed such that further actions will be
identified.

1.   To commence work on area of activities 1 (demand classifications).

2.   To produce a questionnaire to identify current and future
     requirements for office communications applications in the government
     departments and the respective levels of demand.

3.   To initiate action leading to the contracting for services of a
     consultant to study government market size for office communications
     services and identify potential technologies and services. (supply
     aspect)

4.   To review the source and availability of funds for the consulting
     contract.

The current status of activities is:

Office Communications Questionnaire:
A Questionnaire was developed and distributed to members of the
Sub-Committee. The members in turn will survey their respective
departments. This task is scheduled for completion in March.

Consulting Contract:
Terms of reference and statement of qualifications for the consulting
contract as discussed above were developed.
In addition to soliciting proposals for private consulting services, the
DSS Bureau of Management Consultants is also being considered.
It has been established that the required funding will be provided by the
OCS program.

Other Activities of the Working Group:
DOC members of the Sub-Committee continued work on their assignments in
the activity area of user's demand classifications. Their progress will
be enhanced when the questionnaires are completed.

PART 2

This part contains copies of:

Action Plan

Office Communications Questionnaire

Consulting Asignment Overview

Consulting Assignment

Statement of Qualifications for Consultant

Draft of a Contract

ACTIVITY

1. ADMINISTRATIVE TASKS
    1.1 PREPARE DETAILED PLAN
    1.2 SECOND RESOURCES FOR TASKS 2 & 3
    1.3 DEVELOP TERMS OF REFERENCE FOR
        A CONSULTANT TO CARRY OUT TASK 4
    1.4 IDENTIFY FINANCING FOR A CONSULTANT
    1.5 SELECT & CONTRACT FOR CONSULTING
        SERVICE
    1.6 IDENTIFY LIAISON WITH OTHER SUB- ·
        COMMITTEES OF OCS USERS' GROUP

2. USERS' DEMAND CLASSIFICATION
    2.1 IDENTIFY SCOPE OF TASK
    2.2 CLASSIFY USERS' NEEDS, APPLICATIONS
        AND PROFILES
    2.3 DEVELOP MATRIX OF USERS APPLICATIONS
        VS GENERIC TYPES
    2.4 DEVELOP QUESTIONNAIRE TO ASSESS
        USERS' NEEDS AND EXPENDITURES
    2.5 SUBMIT QUESTIONNAIRE TO MEMBERS
            FOR COMPLETION
    2.6 COMPILE AND ANALYSE RESULTS OF
        QUESTIONNAIRE
    2.7 REVIEW 2.2, 2.3 AND 2.6 WITH OCS
        PRODUCTIVITY SUB-COMMITTEE
    2.8 PREPARE REPORT TO SUB-COMMITTEE

3. SUPPLY CLASSIFICATION
    3.1 CLASSIFY AREAS OF OFFC. COMM. TECHNOLOGY
    3.2 DETERMINE & QUANTIFY DEVL. TRENDS
    3.3 ESTIMATE PER/UNIT COST TRENDS OF
        EXISTING AND FUTURE SERVICES & TECHNOLOGY
    3.4 DEVELOP MATRIX OF APPLICATIONS VS
        TECHNOLOGICAL CLASSIFICATION
    3.5 PREPARE REPORT TO SUBCOMMITTEE
    3.6 REVIEW TECHNICAL LITERATURE

4. LEVEL OF DEMAND AND GOVERNMENT MARKET .
        SIZE ASSESSMENT
    4.1 IDENTIFY SCOPE OF TASK
    4.2 IDENTIFY LIAISON WITH OCS INDUSTRY GROUP
    4.3 REQUEST INDUSTRY GROUP INPUT ON FORMAT
        (PREPARE QUESTIONNAIRE)
    4.4 IDENTIFY GOVMNT EXPENDITURES IN AREAS
        SUSCEPTIBLE TO OFFICE AUTOMATION
    4.5 AMEND RESULTS WITH FINDING OF QUESTNN.
    4.6 CLASSIFY EXPENDITURES ACCORDING TO
        GENERIC TYPES OF NEEDS AND APPLICTNS
    4.7 IDENTIFY & QUANTIFY FACTORS OF O.C.
        TECHNOLOGY PENETRATION
    4.8 DETERMINE & QUANTIFY POTENTIAL SHIFT
        OF RESOURCES TO NEW TECHNOLOGIES
    4.9 USING 3.2 - 3.3 - 3.4 SPECIFY LEVEL
        OF DEMAND BY AREA OF TECHNOLOGY
    4.10 GENERATE REPORT FOR SUB-COMMTEE
    4.11 GENERATE REPORT TO OCS GROUP
    4.12 DRAFT ACTION PLAN OF FOLLOW-UP·

OFFICE COMMUNICATIONS QUESTIONNAIRE

COMMUNICATIONS TECHNOLOGY
SUB-COMMITTEE
OCS USERS' GROUP

JANUARY 27, 1982

Introduction

This questionnaire has been developed to determine the potential demand for services and equipment related to office automation in the Federal Government.

General Instructions

1. Please read all questions before completing the document.
2. The questionnaire should be completed using total departmental figures.
3. The following individuals can be contacted for assistance in completing this form:

R. Tharp	995-9960 ext. 184	Tunney's Pasture
J.S. Kay	994-0268	Place du Portage
V. Grebler	995-7227	Centre Town

4. Please return completed questionnaire to:

   Department of Communications
   7th Floor
   300 Slater Street
   Ottawa, Ontario
   K1A 0C8

   Attention: Mr. V. Grebler

1. Identification
   1.1 Department   _____
   1.2 Contact Name   _____
   1.3 Phone Number   _____

2. Annual departmental budget (1981-82):

    2.1 EDP equipment (purchase, rental, service)   _____

    2.2 EDP service bureaus   _____

    2.3 Data communications (purchase, rental, service)   _____

    2.4 Telephone communications (purchase, rental, service)   _____

    2.5 Telex/GDNS   _____

    2.6 Word Processing equipment (purchase, rental, service)   _____

    2.7 Mail and courier service   _____

    2.8 Total   _____

3. Person years and salaries (1981- 82) as identified in the main estimates:

		Person Years	Salaries
3.1	Managerial		
3.2	Professional/technical		
3.3	Administrative Support		
3.4	Other		
3.5	Total		

4. Departmental locations and Person Years totals in these locations (1981-82):

		No. of Locations	Person Years
4.1	Physical locations		
4.2	Regional offices		
4.3	District offices		
4.4	Local offices		
4.5	Cities		
4.6	Headquarter staff		

A brief narrative may be provided to enhance this information.

_____

_____

_____

5. Estimated annual mail volumes (envelopes, pieces or messages) handled in 1981-82 and the percentage of potential future conversion to electronic mail:

	Volume	Potential %
5.1 Received from outside department	_____	_____
5.2 Originating from within and for delivery within department	_____	_____
5.3 Sent outside department	_____	_____
5.4 Telex	_____	_____
5.5 Facsimile	_____	_____
5.6 Electronic mail within department	_____	

6. Travel budget (1981-82) and the percentage of potential future conversion to teleconferencing:

	Budget	Potential %
6.1 Travel between departmental locations	_____	_____
6.2 Travel to other departments, provinical agencies and private industry	_____	_____
6.3 Travel in addition to 6.1 and 6.2 for conferences, seminars professional development and training	_____	_____
6.4 Teleconferencing	_____	

7. Please describe any plans you have regarding the potential implementation of new office automation applications in terms of budget, personnel, timing and anticipated benefits for each of the following fiscal years (1982-83, 83-84, 84-85, 85-86, 86-87)

    7.1 The integration of EDP, communications and office automation

    7.2 Records management and filing systems

    7.3 Electronic mail and scheduling aids for manager such as calendars and meeting schedules

    7.4 Additional application areas

January 26, 1982.

CONSULTING ASSIGNMENT OVERVIEW

The Office Communications Systems (OCS) Users Group is responsible for stating the technical, economic, and behavioural requirements of the user community, to guide the Canadian industry in the development of products, systems and services for the automated office of the future.

To meet this global objective, the Users Group has established several sub-committees, including the Communications Technology Sub-Committee, which is in the process of:

1. classifying users needs;

2. classifying existing and evolving office information and communications technologies and services; and

3. estimating the size of the government market for these.

Sub-committee members will be accomplishing the first of the above activities. The significant and concentrated effort required to achieve the third activity, however, is such that the sub-committee requires the assistance of a qualified consultant, versed in office communications technology, experienced in the development of market projections, and knowledgeable of the pertinent sources of information within government. Initially, the consultant should also assist the sub-committee in the second activity, the results of which will significantly affect the conduct of the third activity.

The objective of this assignment is to estimate the size of the government market for office information and communications technologies, by category of user need, and by type of current or evolving technology, for optimistic and pessimistic scenarios. Where practical, all projections will span the years 1982 to 1987, and will be accompanied by matching historical figures for the years 1976 to 1982.

CONSULTING ASSIGNMENT

January 26, 1982.

TASKS   MILESTONES

1. Conduct a literature survey, to locate similar studies
    and market forecasts, the results or methods of which may
    be transposable to the Government of Canada.

2. For areas of office communications technology identified
    by the sub-committee, assist the sub-committee in determining
    and quantifying short and long term development trends.

3. Assist the sub-committee in estimating per unit cost
    trends of new services, both from the historical and
    projected perspectives, taking into account various mixes
    of cost components such as transmission, storage, processing,
    and labour.

4. Assist the sub-committee in developing a matrix matching
    the classifications of office communications technologies
    to the classifications of user needs or applications,
    briefly indicating potential uses for each technology.

5. Consolidate the findings of the above tasks into a draft
    report and a presentation to the sub-committee.

6. Amend this report according to feedback from the sub-committee,
    and publish a final report.

7. For the market forecast, survey existing sources of govern-
    ment information, for meaningful figures, reports and
    projections.

8. Define the population of interest for the market forecast,
    outline the report contents and the market projection
    method, obtain feedback from the sub-committee and from the
    Industry Group, and amend accordingly.

9. Quantify past and current financial and human resource
    expenditures, both in office information and communications

technologies and in areas susceptible to be affected by these, classified according to the user needs classification.

10. In consultation with the Productivity Sub-Committee, determine, and incorporate into the market project method, major factors likely to affect the level of demand and rate of penetration.

11. For major areas particularly vulnerable to displacement by the new technologies, develop scenarios showing possible shifts of resources from conventional to new technologies.

12. For each category of users needs, and for each type of current or evolving technology, as identified in the matrix developed in Task 4 above, forecast the level of demand and rate of penetration in government, for both optimistic and pessimistic scenarios.

13. Summarize the findings in a draft report, clearly stating all assumptions and their potential impact on the forecasts.

14. Give a presentation to the Communications Technology Sub-Committee.

15. Amend the report according to feedback from the sub-committee, and publish a final report.

16. Report progress in writing on the above tasks on a bi-weekly basis.

February 12, 1982

STATEMENT OF QUALIFICATIONS FOR CONSULTANT

- A comprehensive knowledge on the application of telecommunications, computer systems, and information technologies to the office environment

- A comprehensive knowledge of current state-of-the-art and future trends in:

  - minicomputers   - reprographics
  - micro processors   - telecommunications
  - facsimile transmission   - teleprocessing
  - other areas related to office communications systems and networks

- An understanding of short and long term technology, economic, and implementation trade-offs

- A demonstrated experience in:

  - economic studies
  - market projections
  - forecasting techniques related to introduction of new technological systems or service offerings

- A comprehensive knowledge of government sources of information for the financial, administrative, planning and forecast data, including established contacts in key central agencies (e.g. Treasury Board Secretariat, Supply and Services Canada, Public Service Commission)

- A comprehensive knowledge of government applications susceptible to office automation from both the qualitative and quantitative point of view

- The ability to translate business objectives into issues which can be enhanced by "better" use of information tools

January 26, 1982.   D R A F T

BETWEEN: HER MAJESTY THE QUEEN IN RIGHT OF CANADA,
                (hereinafter called "Her Majesty")

                        OF THE FIRST PART

    AND:

                        OF THE SECOND PART

        The Office Communications Systems (OCS) Users Group is
responsible for stating the technical, economic, and behavioural
requirements of the user community, to guide the Canadian industry in
the development of products, systems and services for the automated
office of the future.

        To meet this global objective, the Users Group has established
several sub-committees, including the Communications Technology Sub-
Committee, which is in the process of:

    1.   classifying users needs;

    2.   classifying existing and evolving office information
         and communications technologies and services; and

    3.   estimating the size of the government market for these.

        Sub-committee members will be accomplishing the first
of the above activities. The significant and concentrated effort
required to achieve the third activity, however, is such that
the sub-committee requires the assistance of a qualified consultant,
versed in office communications technology, experienced in the development
of market projections, and knowledgeable of the pertinent sources
of information within government. Initially, the consultant
should also assist the sub-committee in the second activity, the
results of which will significantly affect the conduct of the third
activity.

        The OCS Program, of the Department of Communications, has
requested that the Contractor assist, and the Contractor has accepted.

The objective of this assignment is to estimate the size of the government market for office information and communications technologies, by category of user need, and by type of current or evolving technology, for optimistic and pessimistic scenarios. Where practical, all projections will span the years 1982 to 1987, and will be accompanied by matching historical figures for the years 1976 to 1982.

NOW, in consideration of the premises, covenants and agreements herein contained or attached, the parties hereto covenant and agree that the Contractor will:

1. Conduct a literature survey, to locate similar studies and market forecasts, the results or methods of which may be transposable to the Government of Canada.

2. For areas of office communications technology identified by the sub-committee, assist the sub-committee in determining and quantifying short and long term development trends.

3. Assist the sub-committee in estimating per unit cost trends of new services, both from the historical and projected perspectives, taking into account various mixes of cost components such as transmission, storage, processing, and labour.

4. Assist the sub-committee in developing a matrix matching the classifications of office communications technologies to the classifications of user needs or applications, briefly indicating potential uses for each technology.

5. Consolidate the findings of the above tasks into a draft report and a presentation to the sub-committee.

6. Amend this report according to feedback from the sub-committee, and publish a final report.

7. For the market forecast, survey existing sources of government information, for meaningful figures, reports and projections.

8. Define the population of interest for the market forecast, outline the report contents and the market projection method, obtain feedback from the sub-committee and from the Industry Group; and amend accordingly.

9. Quantify past and current financial and human resource expenditures, both in office information and communications technologies and in areas susceptible to be affected by these, classified according to the user needs classification.

10. In consultation with the Productivity Sub-Committee, determine, and incorporate into the market project method, major factors likely to affect the level of demand and rate of penetration.

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16. Report progress in writing on the above tasks on a bi-weekly basis.

TERMS OF CONTRACT

1. The Chairman of the Communication Technology Sub-Committee (hereinafter called the "Chairman") will designate the reporting authority for this contract.

2. This contract will be valid from

   to   . Tasks 3, 8 and 10 are to be completed by

                  , respectively.

3. The Contractor will assign

   to carry out the work involved.

4. This contract will not exceed $

   including travel, living and other out-of-pocket project

   expenses.

5. Fees will be paid at the per diem rate of   for

6. Costs incurred for pre-authorized travel and living expenses will be paid in accordance with Treasury Board Travel Directive. Claims must be submitted on Government of Canada Travel Expense Claim Forms. (Copies attached hereto.) Additional copies of Government of Canada Travel Expense Claim Forms, and a copy of the Treasury Board Travel Directive may be obtained through the reporting authority.

7. Other pre-authorized out-of-pocket project expenses will be reimbursed at cost.

8. On or before the second working day of the month following that in which work has been performed or expense incurred, the Contractor agrees to submit an invoice stating actual time worked on the assignment and amounts claimed relative to travel, living, and other out-of-pocket project expenses

incurred.

9. Payment for the performance of services satisfactory to the
   reporting authority and for approved travel and living costs and
   other out-of-pocket expenses will be made within thirty (30) days
   of receipt of invoices and supporting documentation so specified
   elsewhere in this contract.

10. The "General Conditions-Consultant's Contracts" forms an
    integral part of this contract and, by placing his signature
    on this contract, the Contractor acknowledges receipt of
    a copy of same.

    WHEREOF,

have signed on behalf of Her Majesty the Queen in right of Canada and
the Contractor has signed.

. . . .

for:

Date: . . . .

. . . .
        Social Insurance Number