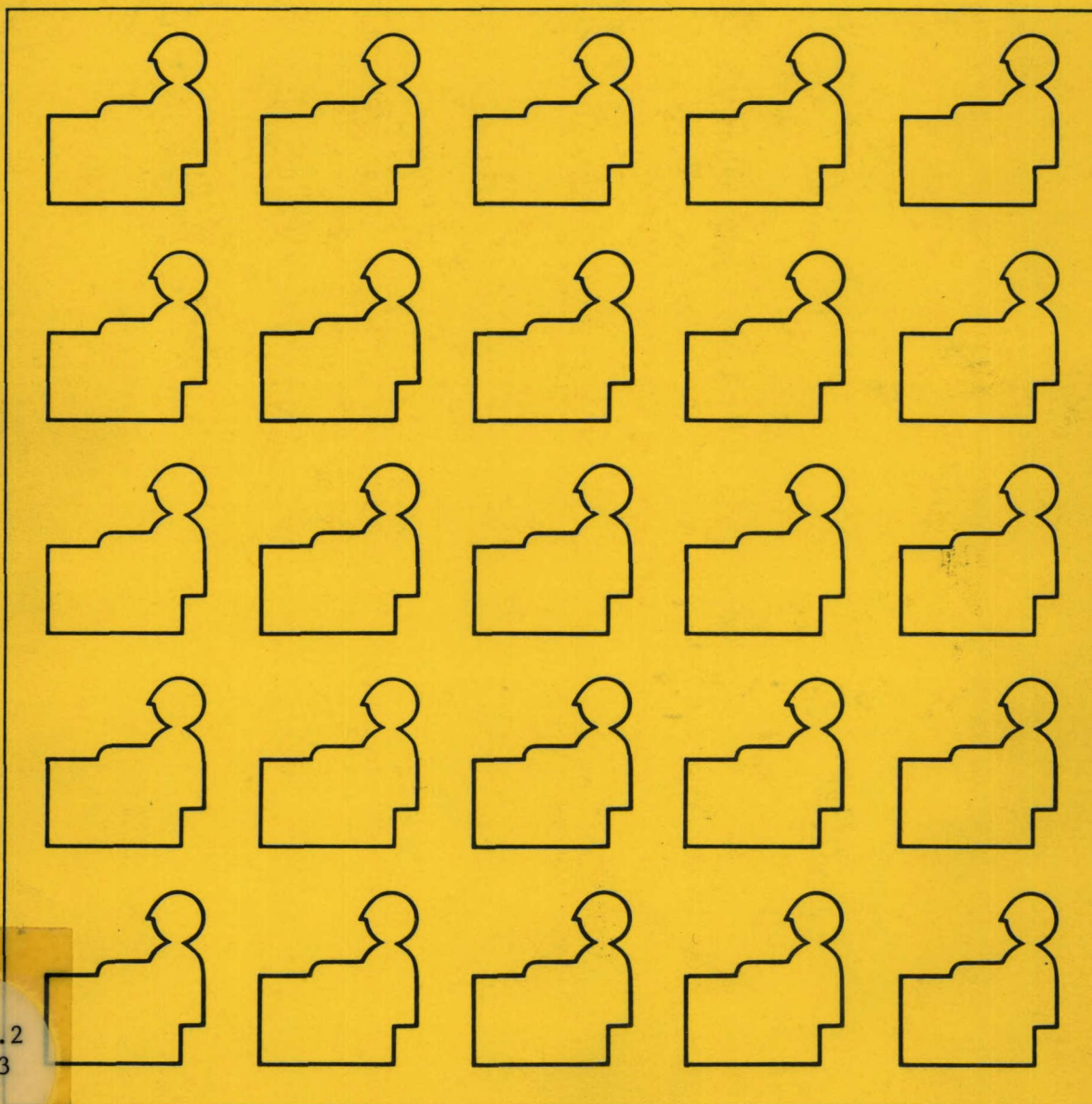


OFFICE COMMUNICATIONS SYSTEMS PROGRAM

PROGRAMME DE LA BUREAUTIQUE

②
PROCEEDINGS OF THE
OFFICE COMMUNICATIONS SYSTEMS FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA, CANADA
MARCH 27, 1985

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Office Communications Systems Forum
(1985 : Ottawa)



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Government of Canada
Department of Communications

Gouvernement du Canada
Ministère des Communications

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"VENDOR STRATEGIES & LESSONS LEARNED

IN THE

OFFICE COMMUNICATIONS SYSTEMS FIELD TRIALS"

Wednesday, March 27th, 1985
Government Conference Centre
2 Rideau Street, Ottawa

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AGENDA

08:30 Registration and coffee

09:00 Welcome and Opening Remarks

Ken Hepburn, Assistant Deputy Minister
Technology and Industry, DOC

09:15 Program highlights and
results achieved

André Dubois
Director OCS

*** F E A T U R E D P R E S E N T A T I O N S ***

Each Vendor representative will describe
his firm's approach to office automation.
This will be followed by the user view
of the applications and impacts

09:30 The Bell Northern Research
approach at Customs and Excise

Vendor: Ray Fortune
User: Jim Commins

10:15 Coffee and Exhibits of Vendors' products

10:45 The XIOS Systems Corp.
approach at National Defence

Vendor: Brian Greenleaf, Rod Bryden
User: Major General Rod Bergin

11:30 The OCRA Communications Inc.
approach at Environment Canada

Vendor: George Arkeveld, Gordon Gow
User: John Smith-Windsor

12:15 Minister's Remarks

Marcel Masse
Minister of Communications

12:30 Light Lunch and Exhibits

02:00 The Officesmiths Inc. approach
at Energy, Mines and Resources

Vendor: Glenn McInnes, Paul Hébert
User: Dan Normandeau

02:45 Coffee and Exhibits of Vendors' products

03:15 The Comterm Ltd. approach
at Communications Canada

Vendor: Jens Laursen, Doug Hardie
User: Mary Meloshe

04:15 Panel - "Office Automation - The
Next 5 Years" - the audience is
invited to participate with
written questions

Moderator: Colin Franklin,
Director General, Applications
Programs, DOC

4:45 to
6:00 p.m. EXHIBITS OF VENDORS' PRODUCTS

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WELCOME BY MR. KEN HEPBURN

ASSISTANT DEPUTY MINISTER, TECHNOLOGY AND INDUSTRY

AT THE

OFFICE COMMUNICATIONS SYSTEMS FORUM

MARCH 27, 1985

Ladies and Gentlemen it is my pleasure to welcome you here today to this forum on the OCS Program. We are very fortunate to have a broad representation from industry and government and from universities here today. The response to our invitation was indeed very gratifying, indeed it was so gratifying that earlier this week we were getting a little nervous about being able to accommodate all of the requests. So, to those of you that are here, a very warm welcome, and to anyone that didn't come because they thought that the place was going to be overflowing, our regrets. But I think the point is, that the subject Office Automation/Office Communications, made by your attendance here, is a subject of importance to us all.

The Program you are going to hear about today started in 1980. It had a budget of \$13 million, a sunset termination date of 1985, and it had the objectives of helping Canadian industries and Canadian firms become established in the office automation marketplace. The approach that was chosen was to bring together five government departments with five Canadian companies. The departments acted as hosts for the OCS field trials, and these field trials allowed the companies to develop and test products that were at first aimed at meeting the needs of the host department but which were also intended to be the basis of products for the total marketplace. During the day, you will be hearing from all of the participants of the Program talking about their experiences and the results that have been achieved. From our perspective the trials have allowed the companies to develop and improve products in a working environment. I think that it has given them a chance to work directly with large customers and to learn how those customers reacted to products in their office automation activities. I think that it has also given the companies a showplace a location in which they can demonstrate their products and their expertise to other potential customers, both in Canada and from abroad.

As you know we have a rather large trade deficit in that particular area and we hope that the results from this Program will be some world class products that will help redress that balance. So while the focus of the Program has been of course industrial development, I think that the federal government has also benefitted a great deal from the Program. Most user departments and indeed the government in general, particularly that community that is interested and involved in office automation, has had a lot of experience in using these systems. We have all learned some of the organizational and some of the human resource implications of bringing those systems in and I think as a whole we have been able to become a little more sophisticated and a little more knowledgeable about the technologies and how to cope with some of those differences. Finally, and not insignificantly, the tools have helped the departments that are using them to become more effective.

The Program has I think, set an example of federal government and industry working together. Now there has been some difficulties, there is no doubt about that, but there has also been some successes which you will hear about today. But as the Program draws to close, I think it has been good for both industry and government. I think that we have both made some major steps forward, but at the end of the day, I think you will be in a position to make your own judgement with respect to that. So I thank you for coming and I hope that you enjoy your day. Thank You.

FOR PRESENTATION TO THE OCS FORUM, MARCH 27, 1985

BY ANDRÉ DUBOIS, OCS PROGRAM DIRECTOR

LADIES & GENTLEMEN,

TODAY MARKS THE THIRD TIME THE OFFICE COMMUNICATIONS SYSTEMS PROGRAM HAS ORGANIZED A PUBLIC FORUM ON ITS ACTIVITIES.

LET'S LOOK BACK TO THE FIRST SESSION HELD IN DECEMBER 1981. WE TALKED THEN ABOUT THE RATIONALE BEHIND THE PROGRAM AND THE REASONS WHY THE GOVERNMENT FELT THE NEED FOR AN INCENTIVE PROGRAM IN THIS INDUSTRY. WE REFLECTED ON THE CONDITIONS AND TRENDS AFFECTING THE OFFICE SECTOR. WE NOTED THAT THE OFFICE WAS FAST BECOMING A DOMINANT FORCE IN THE ECONOMY, EMPLOYING ALMOST HALF THE CANADIAN WORKFORCE, CONSUMING AS MUCH AS HALF THE MONEY SPENT ON RUNNING A TYPICAL BUSINESS, BUT ALSO THAT THE OFFICE WAS LARGELY STARVED OF CAPITAL INVESTMENT AND MANAGED WITH OUTDATED TECHNOLOGY AND PROCEDURES. IN OTHER WORDS, THE OFFICE SECTOR STOOD OUT IMMEDIATELY AS AN AREA WHERE CONVERSION TO MODERN TECHNOLOGY WOULD PAY HANDSOME DIVIDENDS IN PRODUCTIVITY AND, IN THE LONG RUN, ENHANCE THE COMPETITIVENESS OF CANADIAN BUSINESS.

BUT WHY THE PROGRAM EMPHASIS ON HELPING TO FOSTER A CANADIAN OA INDUSTRY?

LET ME EXPLAIN WITH TWO REASONS:

FIRSTLY, GIVEN THAT A LARGE MARKET WOULD EMERGE FOR NEW OFFICE TECHNOLOGY, WE COULD NOT AFFORD TO JUST SIT BACK AND LET IMPORTED PRODUCTS FILL THE

DEMAND. IF WE DID, THE TRADE DEFICIT IN THIS SECTOR, WHICH IS NOW APPROACHING 3 BILLION DOLLARS A YEAR, WOULD SIMPLY GET WORSE, COSTING CANADIANS JOBS AND ECONOMIC GROWTH.

SECONDLY, CANADA'S WELL BEING DEPENDS ON EXPORTS. THAT'S PATENTLY OBVIOUS! BUT IF WE WISH TO ENCOURAGE MORE EXPORTS IN THIS SECTOR, IT BEHOVES US TO BUILD A DOMESTIC SUPPLY INDUSTRY AND TO CREATE FOR IT A HOME MARKET. A HOME MARKET THAT CAN SERVE AS A FOOTHOLD AND A SPRINGBOARD FOR EXPORTS. SO, WITHOUT A CONCERTED EFFORT, WE WOULD END UP LOSING AN OPPORTUNITY TO REDRESS THE TRADE DEFICIT, LOSING OUR MARKETS TO FOREIGN COMPETITION AND HAVING NO LOCAL INDUSTRY WORTH TALKING ABOUT!

FACED WITH THIS BLEAK BUT ALL TOO PROBABLE PROGNOSIS, THE DECISION WAS MADE TO WORK CLOSELY WITH THE PRIVATE SECTOR AND TO SUPPORT ITS ACTIVITIES. THIS CULMINATED IN THE LAUNCHING OF THE FIELD TRIAL PHASE OF THE OCS PROGRAM IN 1982 WITH A BUDGET OF 13.4 MILLION DOLLARS.

AT A MEETING HELD ONE YEAR LATER, IN DECEMBER 1982, WE TALKED ABOUT THE MOST EFFECTIVE WAY OF APPLYING THE MONIES AVAILABLE FOR THE PURPOSE. IT WAS DECIDED THAT THE BULK OF THE PROGRAM FUNDS WOULD GO TOWARDS THE ESTABLISHMENT OF FIELD TRIALS AND DEMONSTRATION SYSTEMS IN PUBLIC SECTOR OFFICES. FOR INDUSTRY, THESE PROJECTS PROVIDED A REALISTIC PROVING GROUND FOR ADVANCED TECHNOLOGY AND A TEST OF THEIR OFFICE AUTOMATION STRATEGIES. FOR THE GOVERNMENT AS A USER, THEY ARE A WAY TO OBTAINING PRACTICAL EXPERIENCE IN WORKING WITH OFFICE AUTOMATION, PARTICULARLY IN ASSESSING ITS BENEFITS AND OTHER IMPACTS.

WE THEREFORE ADDRESSED, AT THAT TIME, THE MATCHUP BETWEEN THE VENDORS AND HOST DEPARTMENTS, AND THE PROCESS BY WHICH THESE MATCHUPS WERE TO BE EFFECTED. THE RESPONSE WAS REMARKABLE... A VERY LARGE NUMBER OF ORGANIZATIONS IN THE PUBLIC SECTOR WERE KEEN TO ACT AS HOSTS FOR THE PROJECTS, AND EVEN MORE ENCOURAGING WAS THE NUMBER OF FIRMS WANTING TO PARTICIPATE AS OA SYSTEM SUPPLIERS. DUE TO OUR LIMITED RESOURCES, WE WERE NOT ABLE TO MATCH EVERY POTENTIAL USER WITH A MANUFACTURER AND SEVERAL WORTHWHILE PROJECTS COULD NOT BE FUNDED. HOWEVER, WE WERE PLEASED TO SEE THAT SEVERAL DEPARTMENTS ADOPTED THE OCS SCHEME AND LAUNCHED PROJECTS WITH THEIR OWN FUNDING. THIS WAS THE CASE, FOR INSTANCE, OF MISERD HELPING A PRODUCT DEVELOPMENT AT GEAC AND I'M DELIGHTED THAT GEAC CAN BE WITH US TODAY, PARTICIPATING IN THE EXHIBIT SECTION.

AS KEN HEPBURN HAS MENTIONED, THIS IS THE LAST HURRAH FOR THE OCS PROGRAM AS THE PROGRAM WILL SHORTLY BE DISSOLVED, A THOROUGHLY DEPRESSING IDEA! WELL, I'M NOT HERE TO TALK ABOUT A CHEERLESS SUBJECT; RATHER, I INVITE YOU TO ADDRESS THE ACCOMPLISHMENTS THAT HAVE EMERGED FROM THE OFFICE AUTOMATION TRIALS. AND SINCE THE PROGRAM'S PRIME MANDATE IS INDUSTRIAL DEVELOPMENT, WE ARE GOING TO GIVE OUR CONTRACTORS THE LION'S SHARE OF THE AGENDA FOR THE REST OF TODAY. TO BE SURE, WE SHALL HEAR AS WELL FROM THE HOST DEPARTMENTS WHOSE EXPERIENCE AND INSIGHTS WILL ENABLE US TO EXPLORE THE FACTORS INVOLVED IN APPLYING PARTICULAR TYPES OF AUTOMATED SYSTEMS IN PARTICULAR ORGANIZATIONS.

YOU MAY WELL ASK WHY WE SHOULD LISTEN TO FIVE DIFFERENT PRESENTATIONS ON THE SAME TOPIC DURING THE COURSE OF THE DAY? WOULD NOT ONE OR TWO SUFFICE?

WELL, WITH OFFICE AUTOMATION, IT IS WIDELY ACKNOWLEDGED THAT NO ONE SOLUTION CAN POSSIBLY MEET THE REQUIREMENTS OF THE WHOLE OF THE OFFICE SECTOR. THE APPLICATIONS MAY BASICALLY BE THE SAME BUT THE VARIATIONS WHICH RESULT ARE EXTREMELY DIVERSE IN THE TYPE OF ORGANIZATIONS APPLYING THE TECHNOLOGY AND/OR FROM THE TECHNICAL APPROACH SELECTED. EACH OCS PROJECT HAS EXPERIENCED THE UPS AND DOWNS INVOLVED IN THE FIELD TRIAL PROCESS. I'M SURE THAT YOU WOULD WISH TO CAPTURE THE ESSENCE OF THIS DIVERSITY - OR IF YOU LIKE, DIVERSITY WITHIN SIMILARITY - AND EXTRAPOLATE THE FINDINGS OF A MIX OF TECHNICAL WAYS IN APPLYING OFFICE AUTOMATION TO YOUR PARTICULAR SITUATION. WELL, I'M NOT HERE TO STEAL THE THUNDER OF OUR PRESENTORS AND WILL SHORTLY STEP BACK TO LET THE VENDORS AND USERS THEMSELVES TELL YOU HOW IT WAS AND IS.

HOWEVER, BEFORE TURNING OVER THE FLOOR TO THOSE FOR WHOM THE AGENDA WAS MAINLY INTENDED, I WOULD BE REMISS IF, IN CLOSING, I DID NOT ACKNOWLEDGE THE INVALUABLE CONTRIBUTION TO THE OVERALL SUCCESS OF THE OCS PROGRAM MADE BY THE MANY DEDICATED INDIVIDUALS WHO SERVED ON THE COMMITTEES AND SUB-COMMITTEES THAT WERE SET UP IN THE EARLY STAGES OF THE PROGRAM TO HELP IT PERFORM ITS TASK. I HOPE I MAY BE FORGIVEN FOR NOT SINGLING OUT EACH AND EVERY CONTRIBUTOR, BUT CERTAINLY A FEW COME IMMEDIATELY TO MIND.

THERE IS DR. PETER MEYBOOM, FORMERLY OF THE TREASURY BOARD, WHO CHAIRED THE ALL IMPORTANT OCS USERS' GROUP COMMITTEE FROM AMONGST WHOSE MEMBERS THE MOST DEPARTMENTS COME FORWARD. THERE ARE DOROTHY PHILLIPS, GUIDO HENTER AND NICK VAN DUUVENDYK WHO CHAIRED THE SUB-COMMITTEES.

THERE WAS CARL BEIGIE WHO CHAIRED A VERY ACTIVE INDUSTRY CONSULTATIVE COMMITTEE. THE INPUT AND GUIDANCE GIVEN BY CARL AND HIS COMMITTEE WERE A KEY INGREDIENT IN THE SUCCESS OF THE PROGRAM. GLENN MCINNES AND BRIAN GREENLEAF HELPED WITH INDUSTRY SUB COMMITTEES.

JIM TAYLOR, NOW WAS INITIALLY ATTACHED TO THE DM'S OFFICE AT DOC AS SPECIAL ADVISOR AND WHO SUBSEQUENTLY BECAME A KEY MEMBER OF THE WORK PLACE AUTOMATION RESEARCH CENTER IN LAVAL, TOOK A KEEN INTEREST IN THE PROGRAM FROM A VERY EARLY POINT IN ITS EXISTENCE. HIS PERSONAL INTEREST IS DEEPLY APPRECIATED AS ARE HIS ACTIVITIES AS CHAIRMAN OF THE IMPACT ASSESSMENT COMMITTEE.

I SHOULD LIKE TO MENTION THE SUPPORT FOR THE PROGRAM OF THE VARIOUS INDUSTRY ASSOCIATIONS WITH AN INTEREST IN OFFICE AUTOMATION. MY THANKS, IN PARTICULAR, GOES TO THE CANADIAN ADVANCED TECHNOLOGY ASSOCIATION AND THE ELECTRICAL & ELECTRONICS MANUFACTURER'S ASSOCIATION. THESE GROUPS HELPED US MAINTAIN A HIGH LEVEL OF AWARENESS OVER THE WELL BEING OF THIS SECTOR WITH THE MINISTERS CONCERNED.

I AM ALSO DEEPLY APPRECIATIVE OF THE SUPPORT GIVEN TO THE PROGRAM BY THE UPPER MANAGEMENT GROUP AT DOC. DOUG PARKILL HELPED SET UP THE PROGRAM IN THE FIRST PLACE WHILE KEN HEPBURN AND COLIN FRANKLIN ARE GIVING MY GROUP THEIR CONTINUING AND STRONG SUPPORT AT PRESENT.

LAST BUT NOT LEAST ARE THE PROJECT MANAGERS IN INDUSTRY AND THE HOST DEPARTMENTS WITHOUT WHOSE DEDICATION THE FIELD TRIALS WOULD NOT HAVE BEEN POSSIBLE. THESE PEOPLE HAVE BEEN IN THE TRENCHES FOR THE LAST 3 YEARS AND HAVE CONTRIBUTED TO WHAT I THINK I CAN SAFELY SAY HAS BEEN A MOST SUCCESSFUL MANUFACTURER/USER PARTNERSHIP.

FINALLY, A WORD OF THANKS TO MY OWN STAFF AT THE OCS PROGRAM OFFICE WHICH HAS PUT UP WITH ME FOR THESE YEARS WITH GOOD HUMOUR AND PERSONAL FRIENDSHIP.

SO, TO ALL THOSE INVOLVED, COLLECTIVELY, I EXPRESS MY GRATITUDE AND APPRECIATION. I'M EXCITED TO BE A PART OF THIS INDUSTRY AND I HOPE YOU ARE TOO BECAUSE WHAT WE DO TOGETHER WILL DRAMATICALLY RESHAPE THE ORGANIZATIONS WE SERVE AND THE INDUSTRY WE SUPPORT.

I HOPE YOU ENJOY THIS MEETING AND TAKE FULL ADVANTAGE OF ALL IT HAS TO OFFER.

THANK YOU VERY MUCH.

PRESENTATION

BY

DEPARTMENT OF CUSTOMS AND EXCISE

AT THE

OFFICE COMMUNICATIONS SYSTEMS

FORUM

HELD AT THE GOVERNMENT CONFERENCE CENTRE

OTTAWA CANADA

MARCH 27, 1985

1. Overview

Good morning everyone.

The Office System Field Trial sponsored by the Department of Communications and taking place within the Excise Branch of Customs and Excise was completed in September 1984, and evaluation reports were finished in December.

The experience of the Field Trial and the evaluation reports have provided us with a wealth of information and learning, and should enable us to move out of the prototype system into a more permanent solution very soon. We are still using the prototype because it is very useful but it was a system put together as essentially a research vehicle to test various concepts and used existing terminals, PBX'S and an available mini computer. It was never intended to be a commercially available system.

Ray Fortune of BNR will tell you about the actual system product recently announced by the BNR parent company, Northern Telecom, which resembles the prototype in many ways but is much more capable and powerful.

The Office System approach, taken by BNR, was to enhance office communications by providing functions such as advanced telephone features, electronic mail, document creation, electronic forms, filing and directories. At a later time, a process was added called Reachthru

which enabled easy access to other databases and transfer of information between the office system and the database. This enabled our Tax Interpretation specialists to access a data base of tax decisions on a commercial system called Quiclaw.

There were 100 users divided 50/50 between the Headquarters people in Ottawa and the Toronto Regional Office. Toronto is our largest region handling approximately 50% of the national regional workload. The users were further divided by management staff and professional staff with a small number of support staff. Professionals, in this case, are Excise Tax Interpretation Specialists whose clientele is primarily Canadian manufacturers. Hence the usefulness of the Tax Policy data base look up facility.

The focus of the trial, in addition to the emphasis on communications was to see what effect such systems can have on management and professional activities. This is in contrast to many office automation studies in the past which have focused on repetitive work with fairly easy to see flow processes.

The evaluation and impact assessment program was carried out both by BNR and by the Department of Communications using a contractor which was Engel and Townsend who are Industrial Psychologists.

BNR concentrated on a detailed data collection of system usage and on a series of opinion surveys to see how user perception changed over time and with experience. The DOC evaluator examined this data and at the same time developed a cost/benefit model. He also looked into user attitudes and how their attitudes affected their acceptance and use of the technology.

I will let Ray Fortune of BNR tell you about their findings and I would like to cover two items:

1. The summary of benefits which were derived from
the evaluation process, and;
2. What we learned as an organization.

LET'S GET RIGHT INTO THE BENEFITS

Responses by system users to detailed surveys carried out over the life of the trial confirmed our expectations that office communications systems save work and time. This was corroborated by analysis of performance measurement statistics in our Toronto Regional Office.

Users reported that the time saved resulted in:

- (1) Increased personal productivity;
- (2) Increased productivity of the user group
as a whole;
- (3) Improved ability to accomplish work
in a timely manner;
- (4) higher quality of work;

In addition they reported other benefits specifically:

- (5) More job interest and enjoyment;
- (6) Improved quality of communications; and
- (7) Improved availability of needed information.

Naturally not all users benefitted equally and there appeared to be many reasons for this for example:

1. Lack of typing skills;
2. Different working styles;
3. Reliance on other support systems (e.g., W.P.);
4. The system did not permit contact with their
normal work colleagues; and
5. Job satisfaction or morale.

Based on a study done in Excise by Engel & Townsend, the Industrial Psychologists, to assess individual and group reaction to the technology, there was strong evidence that the better the morale or job satisfaction of individuals the more likely they were to use the system and achieve any related benefits. Morale, although generally good, was better in some groups. So morale is a very important factor in the successful introduction of such systems.

Users were also asked (1) to describe specific areas of their work where system use affected the time required to accomplish objectives; (2) to estimate the net time savings or loss; and (3) to describe how they reinvest time saved, or make-up for time lost. The following results emerged:

The majority (56%) of users reported time savings; some users (10%) reported net time losses (mainly related to typing and system access difficulties).

The mean daily savings for all users, whether they reported a savings or not, was about 20 minutes, for a total of 30 hours per day (the equivalent of 4 full-time positions) for the entire group. We feel this is a figure that can be exceeded with a fully developed system and a larger user group. A not unreasonable target figure would be double.

Almost all managers who reported time savings implicated messaging as the main vehicle for realizing the productivity gain. In particular, they reported decreased time spent trying to establish communication — playing telephone tag, or trying to see people in person. Also, the fact that a single communication could be used to disseminate information to a number of people saved time relative to having to contact each one separately. Finally, reduced frequency of interruption by staff because they were using electronic messaging within the group resulted in improved, sustained concentration for some managers.

The managers who reported time savings reinvested the time in significant and important ways. More time was spent in the act of managing — administration, report review, correspondence, and more time talking with their people — facilitating, disseminating, reviewing, staying informed, and controlling their operations.

Professionals time savings and reinvestments were quite different than those for management. Like managers, the professionals saved time through reductions in telephone tag. An important benefit for professionals derived from time savings reinvestments by managers -- faster turn-a-round on document approvals. But most of the impacts for the professionals had to do with improved document processing and information access. The professional users report more efficient writing, better information management, less waiting for word processing turnaround, and reduced time loss associated with sharing terminals for database access as compared with having access from their personal workstation.

Reinvestments by the professionals fell into 4 areas:

- (1) Higher work unit output of decisions (their key job output);
- (2) More time for performing the research underlying the decisions,
- (3) More time to study policies crucial to the decision making; and
- (4) more time for supervising and helping more junior colleagues.

Time savings amount to 4% and 6% of the overall work time of the managers and professionals, respectively, which is substantial when considering the constraints of a trial system covering only a small part of the people who need to work together. Actual productivity for this group increased by 10% based on analysis of work statistics.

The full benefit of systems such as this can only be realized when they truly become the relied upon method of information exchange within an organization and when information bases and operational systems become easily accessible. This of course was not the case during the trial, and any results we assess must take this into consideration.

We have seen enough evidence to be reasonably certain that they will be a high payoff from use of better communications systems.

ORGANIZATIONAL LEARNING

Apart from BNR's own learning experience, we had three prime groups who learned a great deal from the trial, our technical systems people the administration group and the Excise user organization itself. Other staff who participated and developed an appreciation of OCS were our trainers in Personnel Branch.

In our EDP group very few had had any exposure to office systems prior to the trial. They now are much more aware as a group of the usefulness of generic office applications (e.g., E. mail, word processing), multi-function workstations, integration of office systems with EDP databases, voice processes, voice and data integration, and with all due respect to their prior knowledge I think their newer understanding and perspective is a real corporate asset. Most of us now have also been exposed to personal computers and can see more clearly the relative attributes of stand-alone devices, connected devices and shared resource systems.

Since the BNR System incorporated voice process (i.e., telephone) and data processes this was an added administrative complication. The convergence of voice and data processes into one system affects traditional jurisdictions in organizations and requires special coordination when installing systems or when one has office moves. These moves seem to be happening all the time so that the advantage of having the already installed telephone lines for the communications is a major financial consideration.

So our administrative staff learned about the consequences of office moves, office layout and design and about furniture design requirements. There is no doubt that terminals, printers and new kinds of telephones affect the space and office layout requirements and can affect local temperatures and may require lighting changes so that video screens are easy to read. We also soon realized that printers and speaker-phones are noisy and disrupt office work and need special consideration.

Our training staff have learned how to use office systems and how to design courses and lesson plans. We have also learned that the training budget should anticipate a turnover in users of up to 30% per year. There is a lot of movement within and between organizations.

The user group however was the big learner.

We now have 124 managers and professionals who have over a year's experience with electronic mail, document creation and filing and access to remote databases. These are people who can now accept computers as normal office tools and who can be more discriminating in specifying what they need in the office and what will work for them.

This is an important corporate asset.

The best part however is that users are now past the initial learning stage and many of them have developed a feel for what they need and would like to do in developing new applications and uses. A conventional user needs analysis can go only so far. As users learn new concepts their needs change. They are no longer patient with novice oriented systems and want to work at a higher level and expect more performance from an office system.

Since use of this kind of office system is essentially discretionary, people will only use it if it is perceived to have value. Therefore, the more sophisticated the users are and the more imagination they can apply to exploiting the office system, the more it will be used and the more value it will have to the organization.

So knowledgeable users are the most important factor in any long term plan to achieve organizational goals through the use of technology.

IN CONCLUSION

We feel the Field Trial was a success but was only really a start on the process of understanding what can be achieved with office communication systems. We know that Office Communications Systems are complementary to Data Processing Systems and that today one cannot be considered without the other.

We know that generic processes such as telephoning and messaging can yield important benefits if properly applied and are complementary to formalized procedures and systems.

We know we have to focus more on the individual, the group and the organization as units of analysis rather than data, information and flow-processes.

We have to learn more about how to provide services to large numbers of people at the least cost and how to get the best performance from multi-user systems.

We know people will use electronic systems if they can perceive the benefits.

Before I pass you over to Ray Fortune I would like to hand out a few compliments.

- 2 -

We were able to carry out this trial because we had a user group with strong leadership and good morale, a vendor who was talented and flexible and an OCS program office which provided, apart from the financing, good judgment, support and guidance.

Thank you all very much.

PRESENTATION
BY
BELL NORTHERN RESEARCH
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA CANADA
MARCH 27, 1985

PRESENTATION TO OCS FORUM
ON CUSTOMS & EXCISE TRIAL

Ray F. Fortune, BNR

LADIES AND GENTLEMEN IT IS A PLEASURE TO BE WITH YOU TODAY, TO REPORT ON BNR'S PERSPECTIVE ON THE OCS TRIAL AT CUSTOMS & EXCISE.

I SHOULD POINT OUT THAT BNR ACTED AS PRIME CONTRACTOR ON BEHALF OF IT'S TWO CORPORATE PARENTS, BELL CANADA AND NORTHERN TELECOM.

ALL THREE PARTIES WERE INVOLVED IN THE TRIAL AND ALL HAVE BENEFITED FROM THIS TRIAL.

EQUALLY IMPORTANT IS THE FACT THAT THE USERS SEEM TO HAVE GAINED AS WELL.

MR. COMMINS HAS DESCRIBED HOW THIS SYSTEM INCREASED EFFECTIVENESS AND PRODUCTIVITY WITHIN THE BRANCH.

OF COURSE, THAT MAKES US AT BNR VERY HAPPY, SINCE AN IMPORTANT CRITERION OF OUR SUCCESS IS THE SATISFACTION USERS DERIVE FROM USING OUR SYSTEMS.

THE OCS PROGRAM AND THE TRIAL HAPPENED AT AN OPPORTUNE TIME IN THE PRODUCT DEVELOPMENT CYCLE FOR OUR CORPORATION.

WHEN IT WAS ANNOUNCED IN 1981, WE WERE STILL IN THE PRODUCT DEFINITION PHASE AND WE SAW THE TRIAL AS AN OPPORTUNITY TO TEST OUR CONCEPTS.

THE C&E TRIAL HAS PROVEN TO US THAT THE FUNCTIONS AND SERVICES, THAT WE ARE DEVELOPING IN OUR PRODUCTS, ARE IN FACT USEFUL AND APPROPRIATE FOR THE OFFICE ENVIRONMENT.

TO TAKE JUST ONE EXAMPLE, WE TESTED OUR CONCEPT OF A STANDARD USER INTERFACE THAT IS THE SAME FOR DIFFERENT TERMINAL TYPES.

OUR USER INTERFACE IS BASED ON THE EXTENSIVE USE OF SOFT KEY COMMANDS AND SCREEN PROMPTS FOR THE USER.

THE TRIAL SHOWED THAT THIS WAS IN FACT A VALID CONCEPT.

SUCH USEFUL DESIGN FEATURES ARE OBVIOUSLY NECESSARY PREREQUISITES TO ANY OFFICE SYSTEM, BUT THEY ARE NOT IN THEMSELVES SUFFICIENT TO ASSURE SUCCESS.

WE ALSO LEARNED THAT PLANNING, THE IMPLEMENTATION PROCESS, AND AN ADEQUATE SUPPORT STRUCTURE ARE ALL CRITICAL TO THE SUCCESSFUL INTRODUCTION OF A SYSTEM TO THE OFFICE.

OUR PLANNING PROCESS STARTED WITH AN ORGANIZATIONAL SCAN TO SELECT THE MOST PROMISING CANDIDATES FOR A TRIAL INSTALLATION.

WE THEN PROCEEDED THROUGH MANAGEMENT INTERVIEWS AND USER QUESTIONNAIRES TOWARDS A DEFINITION OF THE ACTUAL CONFIGURATION OF THE SYSTEM AND THE SERVICES THAT WOULD BE PROVIDED TO EACH USER.

IN THE INITIAL IMPLEMENTATION OF OFFICE SYSTEMS IT IS IMPORTANT TO WORK WITH USERS WHO CAN BENEFIT IMMEDIATELY FROM THE IMPLEMENTATION.

THEY SHOULD HAVE A POSITIVE ATTITUDE TOWARDS THE PROCESS AND BE PREPARED TO INSTALL THE APPROPRIATE SUPPORT STRUCTURES.

HAPPILY, WE FOUND ALL OF THESE CONDITIONS IN THE CUSTOMS AND EXCISE BRANCH.

OUR PLANNING METHODOLOGY IDENTIFIED COMMUNICATIONS PATTERNS BETWEEN GROUPS OF POTENTIAL USERS, ESTABLISHED THE AMOUNT OF TIME SPENT ON INDIVIDUAL TASKS AND RECOMMENDED A SPECIFIC SET OF FUNCTIONS AS WELL AS A TERMINAL TYPE FOR EACH USER ON THE SYSTEM.

OUR RECOMMENDATIONS WERE CAREFULLY FOLLOWED BY C&E WHICH ALLOWED US TO EVALUATE THE EFFECTIVENESS OF OUR SELECTION CRITERIA.

THOUGH WE ARE GENERALLY SATISFIED WITH THE PLANNING PROCESS, WE NOW REALIZE THAT SOME ISSUES WERE OVERLOOKED.

FOR EXAMPLE, IN SPITE OF OUR CORPORATE COMMITMENT TO 'OPEN' WORLD, WE TENDED TO UNDERESTIMATE THE IMPORTANCE OF INTERCONNECTION BETWEEN OUR SYSTEM AND EXISTING OFFICE EQUIPMENT SUCH AS WORD PROCESSORS.

WE CORRECTED THIS ASPECT IN RESPONSE TO USER FEEDBACK.

WE ALSO TENDED TO PREDICT MORE INTER-CITY TRAFFIC THAN IN FACT OCCURRED, AND WE UNDERESTIMATED THE AMOUNT OF LOCAL COMMUNICATION IN THE OFFICE.

OF COURSE WE HAVE CHANGED OUR THINKING AND METHODOLOGY TO COMPENSATE FOR THESE NOTED DISCREPANCIES.

WE ANTICIPATED THAT USER TRAINING AND SUPPORT WOULD BE VERY IMPORTANT TO THE SUCCESS OF THE TRIAL.

IT EMERGED THAT THE BEST WAY TO TRAIN PROSPECTIVE USERS PROPERLY IS TO USE A HANDS-ON TUTORIAL APPROACH WHERE THE USER CAN PROCEED AT THE APPROPRIATE PACE.

WE ALSO NOW REALIZE THAT IT IS MORE EFFECTIVE TO EXTEND THE TRAINING PERIOD OVER TIME RATHER THAN CONCENTRATE IT AT THE START OF OPERATION.

IT IS OFTEN SAID THAT RELIABILITY OF OFFICE EQUIPMENT IS VERY IMPORTANT TO SUCCESSFUL UTILIZATION.

DURING THE TRIAL THE EXPERIMENTAL SYSTEM HAS OPERATED SURPRISINGLY WELL DESPITE THE FACT THAT WE USED EXTENSIVE INTER-CITY COMMUNICATIONS AND MULTIPLE EQUIPMENT VENDORS.

THE SYSTEM USED TWO SL-1 PBX'S TO ACT AS VOICE AND DATA SWITCHES IN EACH CITY AND BOTH WERE VERY STABLE WITH THE ONLY OUTAGES CAUSED BY POWER INTERRUPTIONS.

THE STATISTICAL MULTIPLEXERS AND THE DATA ROUTE COMMUNICATION CIRCUITS HAVE ALSO PERFORMED VERY WELL.

THE APPLICATION PROCESSOR EXPERIENCED TWO MAJOR OUTAGES AS WELL AS SEVERAL OTHER MINOR INTERRUPTIONS.

THE SOFTWARE PERFORMED EXCEPTIONALLY WELL IN SPITE OF THE FACT THAT IT WAS DESIGNED AS A TRIAL SYSTEM AND NOT AS A PRODUCT.

WE EXPERIENCED ONLY ONE SOFTWARE CRASH IN A YEAR AND A HALF OF OPERATION.

THE BUGS WHICH APPEARED IN THE SOFTWARE WERE READILY FIXED AND ITS PERFORMANCE HAS BEEN IMPROVED OVER THE PERIOD OF THE TRIAL.

THE MAIN DIFFICULTY WITH THE SYSTEM CAME FROM PERIPHERAL EQUIPMENT, ESPECIALLY THE PRINTERS.

PRINTERS IN A SHARED USER ENVIRONMENT REQUIRE SPECIAL ATTENTION.

SHARING REQUIRES THAT THERE BE AGREEMENT AMONG THE USERS ON WHO WILL MANAGE THE PAPER, CHANGE RIBBONS, ETC.

IT SOUNDS AMPLE BUT ISN'T.

THE NEW LOW COST, NON IMPACT PRINTERS CO-LOCATED WITH EACH USER OR SHARED WITH FEWER USERS SEEMS TO BE ONE ANSWER TO SHARED PRINTER HASSLES.

AS THE TRIAL PROGRESSED, THE USERS' CONFIDENCE IN THE SYSTEM INCREASED STEADILY.

WE COLLECTED EXTENSIVE USER STATISTICS OVER THE COURSE OF THE TRIAL AND BECAUSE WE WORKED WITH TWO DEPARTMENT GROUPS AS WELL AS A MANAGEMENT GROUP, WE WERE ABLE TO MEASURE HOW A WIDE VARIETY OF USERS ACTUALLY APPLIED THE SYSTEM.

FIRST OF ALL, WE KNOW THAT TELEPHONY CONTINUES TO BE THE MOST HIGHLY USED AND THE MOST VALUABLE OFFICE FUNCTION.

ANYTHING THAT CAN BE DONE TO IMPROVE THE EFFICIENCY OF TELEPHONE USAGE IS DESIRABLE.

ADVANCED TELEPHONY FEATURES AVAILABLE ON THE PBX'S WERE USED AND VALUED BY THOSE INVOLVED IN THE TRIAL.

TELEPHONY, HOWEVER, NEEDS TO BE SUPPORTED WITH OTHER FUNCTIONALITY.

WE KNOW FROM THIS TRIAL THAT MESSAGING IS A NATURAL ADJUNCT TO TELEPHONY AND THE NEXT MOST IMPORTANT COMMUNICATION SERVICE.

TEXT MESSAGING FACILITIES IN THE TRIAL WERE USED AT ALL LEVELS IN THE ORGANIZATION.

IN FACT, WE WERE SOMEWHAT SURPRISED TO FIND THAT 78% OF ALL TEXT MESSAGES REMAINED WITHIN THE ORIGINATING LOCATION.

WE HAD EXPECTED THE HIGHEST USE TO BE INTER-CITY.

OTHER TRIALS HAVE PROVIDED SIMILAR OBSERVATIONS WHICH INDICATES TO US THAT AN EASY TO USE MESSAGING SERVICE IS AN IMPORTANT TOOL FOR USE WITHIN A DEPARTMENT OR WORK GROUP AS WELL AS FOR LONG DISTANCE COMMUNICATION.

MESSAGING WAS VALUED AS A MEANS OF REDUCING TELEPHONE TAG AND PROVIDING A NEW INFORMAL COMMUNICATION PATH SUPPLEMENTING TRADITIONAL PROCEDURES.

BECAUSE WE TESTED FULLY INTEGRATED SERVICES IN THE TRIAL, THE DOCUMENT PREPARATION CAPABILITY COULD BE USED EITHER TO PREPARE TEXT MESSAGES OR STAND-ALONE DOCUMENTS.

THIS TURNED OUT TO BE THE NEXT MOST VALUED SERVICE.

IN FACT, WE FOUND THAT PROFESSIONALS IN THE DEPARTMENT OFTEN PREFERRED TO DO THE INITIAL DRAFTS OF THEIR DOCUMENTS BY THEMSELVES BEFORE FORWARDING TO THE SECRETARY FOR FINAL FORMATTING AND PRINTING.

ALL OF THE MESSAGES AND DOCUMENTS AS WELL AS OTHER INFORMATION WAS ELECTRONICALLY FILED.

THE SYSTEM'S HIERARCHIAL FILING STRUCTURE WAS USED HEAVILY AND RECEIVED VERY POSITIVE COMMENT.

THE CUSTOMS AND EXCISE DEPARTMENT HAS SPECIALIZED INTERESTS, PARTICULARLY IN THE AREA OF TAX INTERPRETATION.

USERS FREQUENTLY REFERRED TO A COMMERCIAL DATABASE KNOWN AS QUIC LAW SO THE TRIAL SYSTEM INCLUDED A REACH THROUGH CAPABILITY PERMITTING SPEEDY DIRECT ACCESS TO THIS DATABASE FROM EACH DESKTOP TERMINAL.

THIS FEATURE ALLOWED USERS TO SEARCH AND SCROLL THROUGH THE DATABASE, SELECT EXTRACTS, FILE THEM IN THE SYSTEM, AND CUT AND PASTE THEM INTO A DOCUMENT.

THE REACH THROUGH CAPABILITY WAS USED AND ESPECIALLY VALUED BY THE SPECIALISTS ON TAX INTERPRETATION

WE ARE CURRENTLY EXPANDING THE TRIAL SYSTEM TO INCLUDE ACCESS
FROM EACH OF THE REGIONAL OFFICES ACROSS CANADA.

THE DEPARTMENT'S MANAGEMENT GROUP WILL WATCH THE RESULTS OF THIS
EXTENSION WITH INTEREST, AS WILL WE, SINCE WE WANT TO KNOW HOW
COMMUNICATION PATTERNS CHANGE AS A RESULT OF EXPANSION.

WE EXPECT THAT SENIOR MANAGEMENT WILL FIND THE ABILITY TO
COMMUNICATE TO ALL SITES TO BE OF HIGH VALUE.

THE TRIAL HAS BEEN A SUCCESS, BOTH FOR USERS AND FOR OUR
CORPORATION.

WE HAVE CONFIRMED OUR EXPECTATIONS THAT ENHANCED INFORMATION
SERVICES ARE A PRODUCTIVE ADDITION TO THE OFFICE ENVIRONMENT, AND
THAT ADDS DIRECT SUPPORT TO THE RECENT ANNOUNCEMENT OF OUR NEW
OFFICE PRODUCTS.

SLIDE I

**NORTHERN TELECOM
MERIDIAN**

MANY OF YOU ARE ALREADY AWARE, NORTHERN TELECOM ANNOUNCED THE MERIDIAN LINE OF OFFICE PRODUCTS ON FEBRUARY 14, 1985.

THESE NEW PRODUCTS WILL BE DISTRIBUTED IN CANADA BY BELL CANADA AND AFFILIATED COMPANIES.

IN 1982 NORTHERN TELECOM MADE A BROAD COMMITMENT - A COMMITMENT TO OPEN WORLD.

IN THIS COMMITMENT NORTHERN TELECOM STATED THAT IT WOULD BE BRINGING FORWARD NEW PRODUCTS TO PROVIDE A HIGH LEVEL OF SYSTEM INTEGRATION BY APPLYING ADVANCED DIGITAL TECHNOLOGY, BY ADHERING TO INTERNATIONAL STANDARDS AND BY EMPHASIZING CUSTOMER NEEDS.

SLIDE II

**A MAJOR NEW ADVANCE IN
COMMUNICATIONS SYSTEMS
FOR INFORMATION MANAGEMENT**

MERIDIAN IS NORTHERN TELECOM'S RESPONSE TO ITS 1982 COMMITMENT AND THE MERIDIAN LINE OF PRODUCTS OFFER A MAJOR NEW ADVANCE IN COMMUNICATION SYSTEMS FOR INFORMATION MANAGEMENT.

IN THE NEXT FEW MINUTES I WISH TO PRESENT TO YOU AN OVERVIEW OF THESE PRODUCTS AND THEIR MAJOR FEATURES.

SLIDE III

INTEGRATED TERMINAL

DIGITAL TELEPHONE

DV-1 DATA VOICE SYSTEM

**SL-1/100 INTEGRATED SERVICES
NETWORK**

THE MERIDIAN LINE INCLUDES ENHANCEMENTS TO THE SL FAMILY OF PRIVATE BRANCH EXCHANGES WHICH ARE NOW DESIGNATED THE SL-1/SL-100 INTEGRATED SERVICES NETWORK.

IT ALSO INCLUDES A NEW OFFICE INFORMATION SYSTEM FOR SMALLER ORGANIZATIONS OR INDIVIDUAL DEPARTMENTS DESIGNATED AS DV-1.

IN ADDITION THERE IS A SOPHISTICATED NEW INTEGRATED VOICE AND DATA TERMINAL, SEVERAL NEW DIGITAL TELEPHONES AND A TELEPHONE SET WHICH USES A TOUCH SENSITIVE SCREEN.

SLIDE IV

**FAMILY OF INTEGRATED
INFORMATION SERVICES**

- * DIRECTORY
- * MESSAGING
- * FORMS
- * ACCESS
- * SHARE

TRUE INTEGRATED VOICE AND DATA APPLICATIONS

THERE IS A HIGH CORRELATION BETWEEN THE FEATURES AND SERVICES THAT WERE TESTED IN THE TRIAL AND THOSE THAT NOW APPEAR ON OUR NEW PRODUCTS.

FOR EXAMPLE, THE SERVICES THAT ARE AVAILABLE ON THE SL FAMILY OF INTEGRATED INFORMATION SERVICES INCLUDE DIRECTORY, MESSAGING, FORMS, ACCESS AND SHARE.

SIMILAR SERVICES WERE USED ON OUR TRIAL SYSTEM UNDER SLIGHTLY DIFFERENT NAMES.

A TEXT PREPARATION AND EDITING CAPABILITY IS AN INHERENT PART OF THE INTEGRATED INFORMATION SERVICES.

SLIDE V

DIRECTORY SERVICE

- * MUCH MORE THAN A TELEPHONE DIRECTORY
- * COMPREHENSIVE INFORMATION BASE OF:
 - People
 - Services
 - Computer Services
 - External contacts
- * UNDERPINS OTHER INFORMATION SERVICES

THE DIRECTORY SERVICE PROVIDES KEYBOARD DIALING, AS YOU WOULD EXPECT FOR A TELEPHONE DIRECTORY, BUT IT ALSO PROVIDES MUCH MORE.

DIRECTORY UNDERPINS ALL THE OTHER INFORMATION SERVICES.

IT PROVIDES A DIRECTORY TO PEOPLE SERVICES, COMPUTERS AND EXTERNAL CONTACTS AND PROVIDES BOTH AN ORGANIZATIONAL AND PERSONAL DIRECTORY.

SLIDE VI

MESSAGING SERVICE

- * INTEGRATES VOICE AND TEXT
- * PERMITS ANNOTATION OF TEXT WITH VOICE
- * MESSAGE ROUTING USES DIRECTORY
- * ATTACH MESSAGES TO FORMS OR FILES
- * WILL CONFORM TO X.400 ELECTRONIC MAIL STANDARD

THE MESSAGING SERVICE PROVIDES A FULLY INTEGRATED VOICE AND TEXT MESSAGING SYSTEM.

THE TRIAL SYSTEM PROVIDED ONLY A TEXT MESSAGING SYSTEM WHICH WAS FOUND TO BE A VERY VALUABLE SERVICE TO OUR USERS.

WE ANTICIPATE THAT THE ADDITION OF VOICE CAPABILITY WILL PROVIDE EVEN MORE BENEFITS TO THE USERS.

WITH THE INTEGRATED VOICE AND TEXT MESSAGING IT IS POSSIBLE TO SEND EITHER A VOICE OR TEXT MESSAGE OR AN INTEGRATED VOICE/TEXT MESSAGE.

AN INTEGRATED VOICE AND TEXT MESSAGE IS ONE IN WHICH FOR EXAMPLE A TEXT MESSAGE IS PREPARED AND SENT TO A RECIPIENT FOR COMMENT.

THE COMMENTS BY THE RECIPIENT ARE ADDED AND MARKED ON THE MESSAGE USING VOICE AND THE COMBINED MESSAGE RETURNED TO THE ORIGINAL SENDER.

THE SENDER CAN RE-READ THE MESSAGE AND LISTEN TO THE VOICE COMMENTS AT THE APPROPRIATE POINT IN THE TEXT.

WE CALL THIS VOICE ANNOTATION.

OF COURSE MESSAGING IS FULLY INTEGRATED WITH THE OTHER INFORMATION SERVICES PERMITTING MESSAGES TO BE ATTACHED TO FORMS, FILES OR OTHER MESSAGES.

MESSAGES ARE SENT TO ONE OR MORE PEOPLE USING THE DIRECTORY'S AUTOMATIC ADDRESSING CAPABILITY.

SLIDE VII

FORMS SERVICE

- * USER DEFINED ELECTRONIC FORMS
- * FIELD ENTRY VALIDATION, CALCULATION, COMPUTATION
- * ELECTRONIC SIGNATURE
- * FORMS ROUTING
- * FORMS TRACKING

THE FORMS SERVICE PERMITS THE MULTIPLICITY OF FORMS APPEARING IN THE AVERAGE OFFICE TO BE FILED ON LINE AND FOR THE DATA TO BE COLLECTED ELECTRONICALLY.

THIS SERVICE WAS INCLUDED IN THE FIELD TRIAL BUT WE HAVE ADDED SIGNIFICANT NEW FEATURES.

THE NEW FORMS SERVICE PERMITS THE DOCUMENT TO BE AUTOMATICALLY ROUTED AND SIGNATURES COLLECTED ALONG THE ROUTE BY USING AN ELECTRONIC SIGNATURE PASSWORD. IT ALSO INCLUDES AN EXTENSIVE ELECTRONIC TRACKING CAPABILITY.

SLIDE VIII

ACCESS SERVICE

- * PERMITS RAPID ACCESS TO OTHER COMPUTER SERVICES
- * USES DIRECTORY FOR CALLING
- * PERFORMS NEEDED CODE AND PROTOCOL CONVERSIONS
- * RETAINS SESSION FILE FOR INTEGRATED USE WITH MESSAGING, FILING, PRINTING
- * PROVIDES IBM 3270 AND VT 100 COMPATIBILITY

ACCESS IS OUR NEW TERM FOR REACH THROUGH, AS USED ON THE TRIAL SYSTEM, TO INTERACT WITH QUIC-LAW.

ACCESS IS DRIVEN BY THE DIRECTORY, INCLUDES PROTOCOL CONVERSIONS AND MAKES ACCESSING DIFFERENT COMPUTERS EASY EVEN FOR THE NOVICE.

SINCE ACCESS IS INTEGRATED WITH THE OTHER SERVICES THE USER CAN RETAIN THE INFORMATION AND FILE FOR LATER USE WITH OTHER INFORMATION SERVICES SUCH AS MESSAGING, FILING AND PRINTING.

SLIDE IX

SHARE SERVICE

- * DESK-TO-DESK VOICE AND DATA CALLING
- * VOICE CALLS SUPPORTED WITH VISUAL INFORMATION
- * ONE CALL FOR BOTH MEDIA
- * AUTOMATIC PROTOCOL CONVERSIONS

SHARE IS OUR NEW NAME SIGNIFYING DESK TO DESK VOICE AND DATA CALLING.

IN THE TRIAL SYSTEM WE HAD ASSOCIATED VOICE AND DATA CALLING REQUIRING TWO CALL SET-UPS BUT ON OUR NEW SYSTEM WE HAVE COMPLETELY INTEGRATED VOICE AND DATA IN THAT ONLY ONE CALL IS REQUIRED TO PROVIDE BOTH SERVICES.

IN USING SHARE, THE VOICE COMMUNICATIONS PROCEEDS IN THE NORMAL MODE AND EITHER PARTY MAY CHANGE THE INFORMATION APPEARING ON THEIR SCREEN WHICH IS IMMEDIATELY TRANSMITTED TO THE OTHER SCREEN.

SHARE AUTOMATICALLY PERFORMS NECESSARY SPEED AND PROTOCOL CONVERSIONS.

SLIDE X

COMPUTING ENVIRONMENT

- * XENIX OPERATING SYSTEM
- * PERSONAL PRODUCTIVITY PROGRAMS
 - Word processing
 - Spreadsheet
 - Calendar
 - Data base

IN ADDITION TO THESE PROPRIETARY SERVICES WE ALSO SUPPORT A COMPUTING ENVIRONMENT USING THE XENIX BASED OPERATING SYSTEM WHICH PERMITS THE USER TO ADD PERSONAL PRODUCTIVITY PROGRAMS SUCH AS WORD PROCESSING, CALENDARS AND DATABASE TO THE INTEGRATED INFORMATION SERVICES PACKAGE.

SLIDE XI



OF COURSE THE USE OF INTEGRATED INFORMATION SERVICES ARE BEST PERFORMED THROUGH AN INTEGRATED VOICE AND DATA TERMINAL.

THE MERIDIAN 4020 IVD TERMINAL INCORPORATES MANY OF THE LESSONS WE'VE LEARNED IN THE FIELD TRIAL AS WELL AS OUR EARLY EXPERIENCES WITH THE FIRST IVD TERMINAL, THE DISPLAYPHONE.

THESE ECONOMICAL YET POWERFUL TERMINALS PROVIDE SCREEN BASED MULTI-LINE CALLING ADVANCED TELEPHONE FEATURES, MULTIPLE CONCURRENT APPLICATION ACCESS AND SIMULTANEOUS TEXT AND GRAPHICS DISPLAY.

MOST IMPORTANTLY THE M4020 OPERATES AT 2.56 Mb/s OVER STANDARD TWISTED PAIR TELEPHONE WIRING.

SLIDE XII

TERMINALS FOR INTEGRATED
SERVICES

M4020 INTEGRATED VOICE AND
 DATA TERMINAL
 2.56 Mb/s DATA RATE

IBM PC 2.56 Mb/s DATA RATE

ASCII VT 100 COMPATIBLE TERMINALS
 19.2 Kb/s ASYNCHRONOUS
 56.0 Kb/s SYNCHRONOUS

HOWEVER, WE HAVE NOT RESTRICTED THE USE OF THE INTEGRATED
SERVICES TO ONLY ONE TERMINAL.

IN ADDITION TO THE M4020 USERS MAY CONNECT AN IBM PC BY MEANS OF
A SPECIAL CARD WHICH PLUGS INTO THE PC AND PROVIDE 2.56 Mb/s
COMMUNICATION SPEEDS.

WE ALSO SUPPORT ASCII TERMINALS OPERATING AT EITHER UP TO 19.2
Kb/s ASYNCHRONOUS OR UP TO 56 Kb/s IN A SYNCHRONOUS MODE AND WE
PROVIDE A CONSISTENT USER INTERFACE ACROSS ALL THESE TERMINALS.

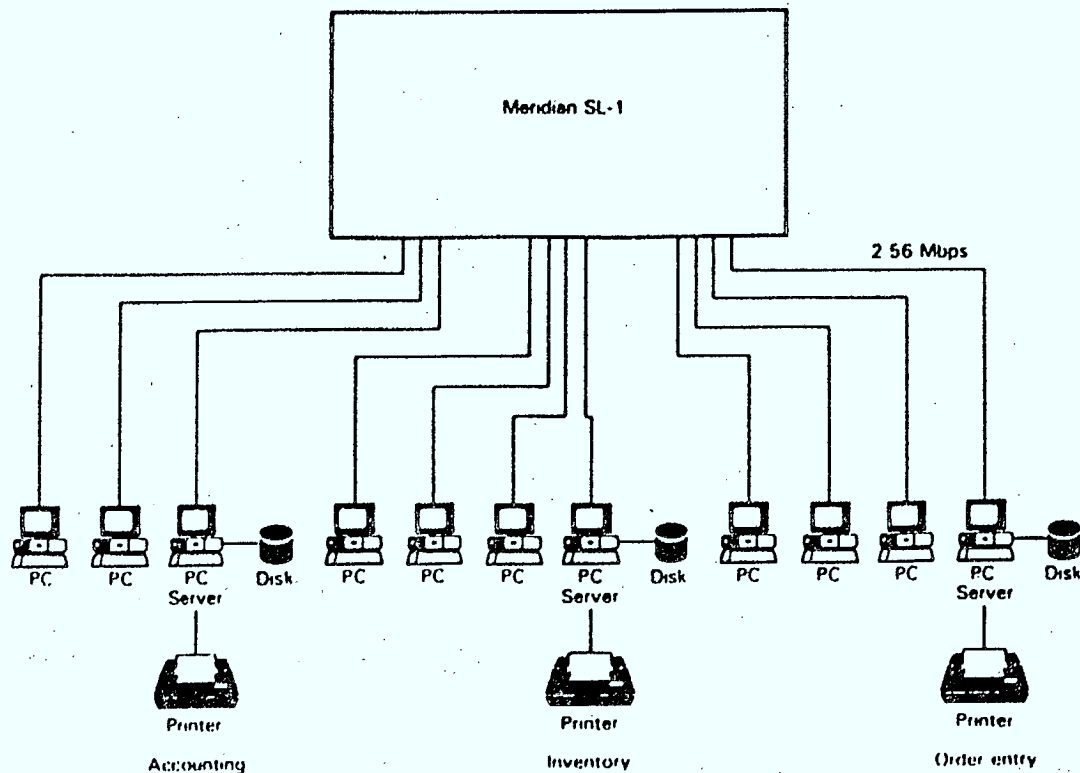
THE TRIAL SYSTEM OPERATED AT A MAXIMUM SPEED OF 2.4 Kb/s BUT OUR
NEW PRODUCTS ARE CAPABLE OF OPERATING AT 2.5 Mb/s OR 100 TIMES
FASTER.

SINCE THE TRIAL SYSTEM WE HAVE DESCRIBED HAS BEEN SUCCESSFUL, DO
WE REALLY NEED SUCH HIGH BANDWIDTHS.

THE ANSWER IS YES BECAUSE THE HIGHER SPEED ALLOWS FOR THE SHARED
PROCESSING PROVIDED IN THE SYSTEM TO HAVE THE IMMEDIACY AND THE
RESPONSIVENESS CURRENTLY ONLY AVAILABLE WITH DEDICATED
PROCESSING.

ALSO, THIS VERY FAST DATA RATE PERMITS A SCREEN FULL OF GRAPHICS
OR IMAGES TO FILL IN UNDER ONE SECOND WHICH OTHERWISE WOULD
REQUIRE TWO TO THREE MINUTES.

SLIDE XIII



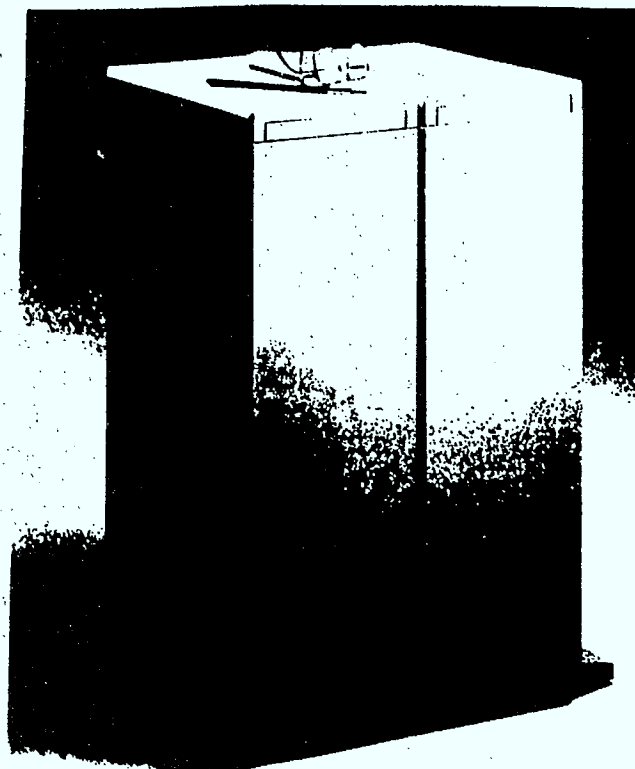
LANSTAR PC application

ANOTHER CAPABILITY PROVIDED ON THE MERIDIAN SL SYSTEM IS LANSTAR.

LANSTAR IS A LOCAL AREA NETWORK USING STANDARD TWISTED PAIR TELEPHONE WIRING WHICH PROVIDES COMPLETE CONNECTIVITY FOR DATA TERMINALS AND PERSONAL COMPUTERS AND PERMITS THE SHARING OF DISK DRIVES AND PRINTERS ON THE NETWORK.

THIS SLIDE SHOWS HOW LANSTAR WOULD BE USED IN A PERSONAL COMPUTER APPLICATION.

SLIDE XIV



THE SMALLER SYSTEM WE HAVE INTRODUCED KNOWN AS MERIDIAN DV-1 IS A MODULAR SYSTEM USING THE SAME TECHNOLOGY BASE AS THE SL SYSTEMS.

AS YOU CAN SEE FROM THIS PHOTOGRAPH IT IS DESIGNED FOR INSTALLATION DIRECTLY IN THE OFFICE ENVIRONMENT AND PROVIDES TRUE DATA AND VOICE INTEGRATION FOR UP TO 100 USERS.

SLIDE XV



THE MERIDIAN DV-1 IS MODULAR IN DESIGN PERMITTING THE SYSTEM TO BE CONFIGURED TO MEET SPECIFIC REQUIREMENTS.

THE SYSTEM IS BUILT WITH SHARED RESOURCE UNITS WHICH ARE DESIGNED TO PLUG AND PLAY BY THE SYSTEM ADMINISTRATOR. THE SRU'S INCLUDE BUILT IN DIAGNOSTICS FOR EASY FAULT IDENTIFICATION AND UNIT REPLACEMENT WITHOUT SYSTEM INTERRUPTIONS.

SLIDE XVI

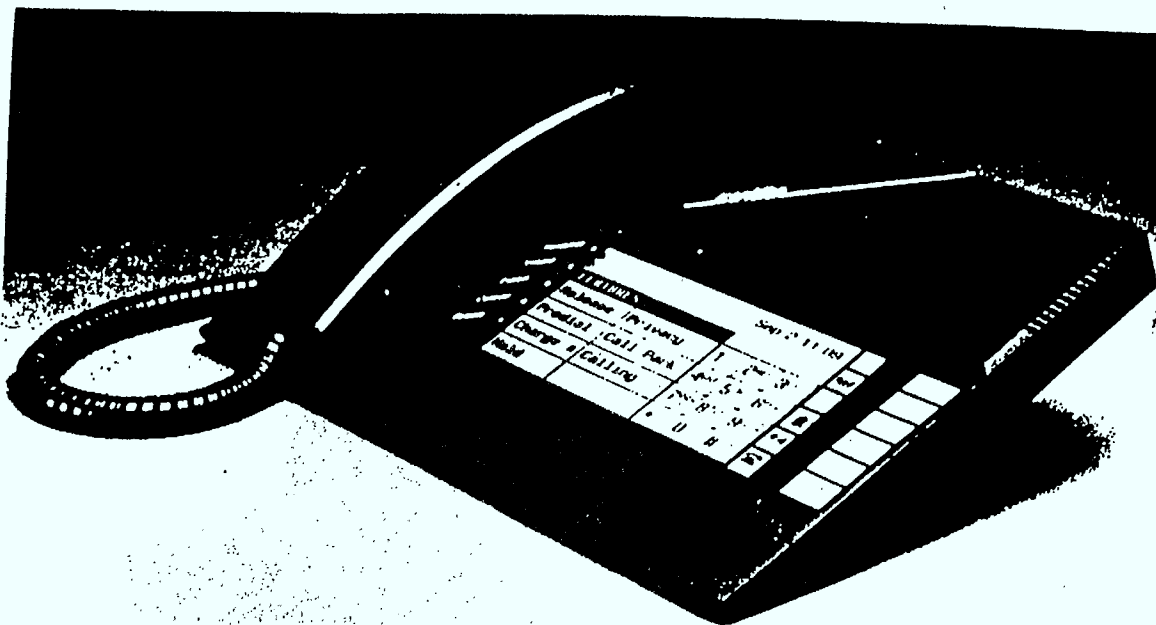


THE MERIDIAN DV-1 PROVIDES DISTRIBUTION TO THE DESK TOP WITH THE MERIDIAN 4020 TERMINAL OR WITH THE IBM PC AT 2.5 Mb/s.

VOICE CALLING IS PROVIDED EITHER THROUGH THE MERIDIAN 4020 OR BY STAND ALONE VOICE SETS.

A DIRECTORY FEATURE AND A SHARE FEATURE ALREADY DESCRIBED ALONG WITH THE UNIX, MS DOS AND CPM OPERATING SYSTEMS PERMITS A VERY WIDE VARIETY OF APPLICATIONS TO BE INSTALLED ON THE SYSTEM.

THE MERIDIAN DV-1 WILL ALSO SUPPORT A WIDE SELECTION OF DATA COMMUNICATION OPTIONS INCLUDING IBM HOST CONNECTIONS AND IT ALSO OPERATES AS A LOCAL AREA NETWORK FOR PERSONAL COMPUTERS.



WITH ALL THE EMPHASIS ON INTEGRATED VOICE AND DATA IT WOULD BE EASY TO OVERLOOK THE VOICE SIDE OF THE BUSINESS.

OUR TRIAL INDICATED THAT VOICE SERVICE IS STILL THE MOST IMPORTANT OFFICE FUNCTION AND WE HAVE CONTINUED TO DEVELOP OUR VOICE COMMUNICATIONS.

WE HAVE A NEW SERIES OF PRODUCTS WHICH PROVIDE DIGITAL TELEPHONY DIRECTLY TO THE DESKTOP.

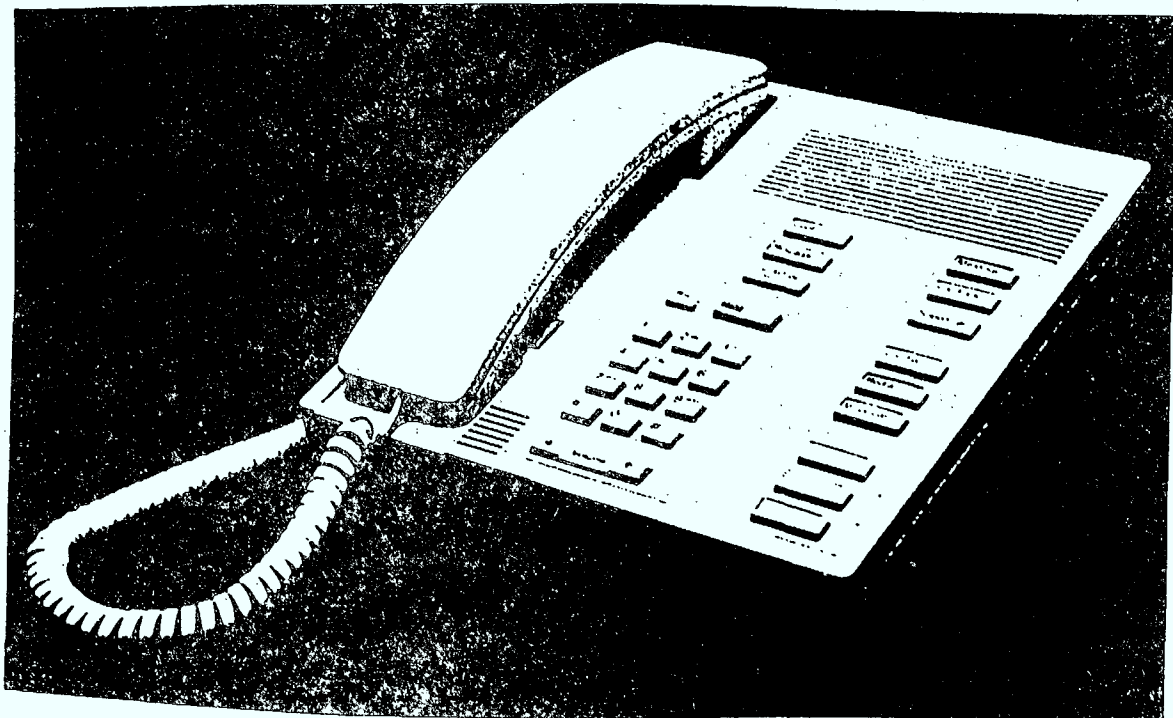
THE M3000 TOUCHPHONE PROVIDES COMPLETE CONTROL OF BUSINESS COMMUNICATION FUNCTIONS BY MEANS OF A LARGE TOUCH SENSITIVE LIQUID CRYSTAL DISPLAY.

IT PROVIDES FOR MULTIPLE VOICE LINES, PRIVATE LINES AND AN INTERCOM.

IT PROVIDES A BUILT-IN SPEAKER AND MICROPHONE FOR HANDSFREE CALLING, AND CONTEXT SENSITIVE HELP FEATURES APPEAR ON THE SCREEN AS NEEDED.

THE TOUCHPHONE ALLOWS A SIMPLE FIELD INSTALLATION OF A DATA COMMUNICATIONS OPTION.

SLIDE XVIII



THE MERIDIAN M2000 SERIES OF DIGITAL TELEPHONES COMBINES FLEXIBLE PROGRAMMABLE VOICE FEATURES WITH COST EFFECTIVE DATA COMMUNICATIONS CAPABILITIES.

THE SETS ARE COMPACT, UNOBTRUSIVE AND OPERATE ON SINGLE PAIR STANDARD TELEPHONE WIRING FOR SIMILTANEOUS DIGITAL VOICE AND DATA TRANSMISSION.

SLIDE XIX

NORTHERN TELECOM
MERIDIAN

THE ANNOUNCEMENT OF NORTHERN TELECOM'S LINE OF MERIDIAN PRODUCTS INDICATES OUR CORPORATE COMMITMENT IN THE INTEGRATED OFFICE SYSTEMS MARKET.

THE OCS FIELD TRIAL HAS PLAYED AN IMPORTANT PART IN THE DEVELOPMENT OF THESE PRODUCT CONCEPTS.

THE TRIAL HAS REINFORCED OUR IDEAS OF WHAT USERS REQUIRE IN THE OFFICE ENVIRONMENT.

OUR NEW PRODUCTS ENCOMPASS THE FEATURES PROVIDED IN THE TRIAL AND EXTEND THOSE CAPABILITIES.

THE TRIAL SYSTEM IS RUNNING IN THE DISPLAY BOOTH HERE AT THIS CONFERENCE AND WE HAVE A SAMPLE OF THE MERIDIAN 4020 TERMINAL AND LITERATURE ON THE MERIDIAN FAMILY OF PRODUCTS AVAILABLE FOR YOUR REFERENCE.

THE COOPERATION ACHIEVED BETWEEN C&E AND BNR IS A GOOD EXAMPLE OF HOW TWO PARTIES CAN WORK TOGETHER FOR THE BENEFIT OF BOTH.

THE DEPARTMENT EXPERIENCED AN INCREASE IN PRODUCTIVITY AND A BETTER UNDERSTANDING OF INTEGRATED OFFICE SYSTEMS.

BNR ON BEHALF OF THE BELL CORPORATE FAMILY SECURED VALUABLE INFORMATION ABOUT THE PRACTICAL APPLICATIONS OF ITS OFFICE SYSTEMS AND OF GREATER IMPORTANCE IS THE FACT THAT OUR PROSPECTIVE CUSTOMERS HAVE ALSO GAINED BECAUSE OUR NEW PRODUCTS WILL MORE CLOSELY MATCH THEIR TRUE NEEDS.

WE HAVE GOOD REASON TO BE SATISFIED WITH THE SUCCESSFUL RESULTS OF THE OCS PROGRAM.

MARCH 27, 1985

Ray F. Fortune
Director,
Office Applications
BNR

PRESENTATION

BY

XIOS SYSTEMS CORPORATION

AT THE

OFFICE COMMUNICATIONS SYSTEMS

FORUM

HELD AT THE GOVERNMENT CONFERENCE CENTRE

OTTAWA CANADA

MARCH 27, 1985



A D D R E S S B Y:

**BRIAN E. GREENLEAF
PRESIDENT
XIOS SYSTEMS CORPORATION**

OFFICE COMMUNICATIONS SYSTEMS FIELD TRIALS FORUM

WEDNESDAY, MARCH 27, 1985

CHECK AGAINST DELIVERY

"SOLUTIONS BEYOND TECHNOLOGY"

1024 Morrison Drive, Ottawa, Ontario, Canada K2H 9E5 (613) 726-8850 FAX 820-8821
A SYSTEMHOUSE COMPANY

IT IS INDEED A PLEASURE TO BE HERE TODAY AND TO HAVE THIS OPPORTUNITY TO TELL YOU ABOUT XIOS SYSTEMS CORPORATION AND OUR RENAISSANCE PRODUCT, TO SHARE WITH YOU WHAT WE HAVE LEARNED FROM PARTICIPATING IN THE OCS PROGRAM AND HOW THAT PARTICIPATION HAS CONTRIBUTED TO THE DEVELOPMENT OF OUR COMPANY.

MY REMARKS WILL TOUCH BRIEFLY ON FOUR TOPICS:

- O OUR INITIAL FORAY INTO INTEGRATED OFFICE SYSTEMS BEGAN WITH CONCEPTUAL AND EXPERIMENTAL RESEARCH INTO "THE NATURE OF OFFICES AND OFFICE WORK". I WILL COMMENT ON HOW THE REALITY OF A FIELD TRIAL COMPARES WITH THOSE EARLY THOUGHTS AND IDEAS;
- O EACH OF THE CONTRACTORS IN THE OCS PROGRAM HAS TAKEN A SOMEWHAT UNIQUE APPROACH TO THEIR INTEGRATED OFFICE SYSTEMS PRODUCT. I WILL SPEND A FEW MINUTES DESCRIBING SOME OF THE UNIQUE CHARACTERISTICS OF RENAISSANCE;
- O WHEN WE APPROACHED THE DEPARTMENT OF COMMUNICATIONS TO BECOME ONE OF THE FIELD TRIAL CONTRACTORS, WE DID SO AS THE ADVANCED TECHNOLOGY DIVISION OF SYSTEMHOUSE LTD. I AM HERE TODAY AS THE PRESIDENT OF XIOS SYSTEMS CORPORATION, A GROWING AND DYNAMIC COMPANY, WHOSE SOLE BUSINESS FOCUS IS THE PROVISION OF INTEGRATED OFFICE SOLUTIONS. I COULDN'T POSSIBLY LET THE DAY GO BY WITHOUT TELLING YOU ABOUT OUR COMPANY AND APPROACH TO THE MARKETPLACE;

- O THE OCS PROGRAM WAS CREATED WITH THE DUAL OBJECTIVE OF ENCOURAGING THE USE OF OFFICE SYSTEMS TECHNOLOGY WITHIN GOVERNMENT AND STIMULATING A CANADIAN SOURCE OF SUPPLY. FROM OUR PERSPECTIVE, THE OCS PROGRAM HAS BEEN SUCCESSFUL IN TERMS OF PROVIDING US WITH A GOOD FIELD TRIAL SITE. I WOULD LIKE TO END MY REMARKS BY REVIEWING THOSE ORIGINAL OBJECTIVES AND COMMENTING ON WHAT STILL MUST BE DONE TO ACCOMPLISH THEM.

A LOT OF CORPORATIONS JUMPED INTO OFFICE AUTOMATION BY ACQUIRING OR DEVELOPING A BUNCH OF INDIVIDUAL SOFTWARE PACKAGES AND TRYING TO GET THEM TO RUN TOGETHER. WE BEGAN, IN THE SUMMER OF 1981, WITH A RESEARCH PROJECT ENTITLED "THE NATURE OF OFFICES AND OFFICE WORK". THE OBJECTIVE OF THIS PROJECT WAS TO UNDERSTAND THE GENERIC NATURE OF OFFICES, THE PEOPLE WHO WORK IN THEM, AND THE FUNCTIONS THAT THEY PERFORM. WE WERE THEN ABLE TO FORM CONCEPTS REGARDING THE CHARACTERISTICS OF AN OFFICE SUPPORT SYSTEM - ONE THAT WOULD BE OF BENEFIT TO OFFICES AND OFFICE WORKERS.

- O WE FELT THAT AN OFFICE SUPPORT PRODUCT HAD TO BE INTUITIVELY EASY TO USE. THIS MEANT FAR MORE THAN BEING "USER FRIENDLY", WHICH WAS THE BUZZ WORD OF THE DAY. WE EXPRESSED IT IN TERMS THAT: SOMEONE WITH NO BACKGROUND IN COMPUTERS SHOULD BE ABLE TO USE THE SYSTEM THEMSELVES AFTER ONLY A BRIEF ORIENTATION, AND NOT FEEL THEY HAD TO DELEGATE ITS USE TO AN ASSISTANT OR SUPPORT STAFF. IT ALSO HAD TO PROVIDE IMPLICIT DATA INTEGRITY - A GUARANTEE THAT THE SYSTEM WOULD NOT LOSE DATA, AND WITHOUT PLACING AN EXTRA BURDEN ON THE USER TO TAKE SPECIAL SAFEGUARDS.

- 0 WE CAME TO THE CONCLUSION THAT WHEN PEOPLE DO OFFICE WORK, THEY OFTEN TAKE ON A PARTICULAR TASK AND THEN PERFORM A NUMBER OF OPERATIONS TO ACCOMPLISH THAT TASK - THEY LOOK AT THINGS, CHANGE THINGS, SEND INFORMATION ON TO OTHERS, AND SO ON. WHAT THEY DO NOT DO, IS SELECT AN OPERATION LIKE WORD PROCESSING OR ELECTRONIC MAIL, AND THEN PERFORM THAT OPERATION OVER AND OVER AGAIN. WE CONCLUDED THAT THE MULTI-LEVEL MENU APPROACH, WHILE NIFTY FOR CONDUCTING DEMONSTRATIONS, WAS COUNTER-INTUITIVE TO THE WAY PEOPLE DO OFFICE WORK. FUNCTIONAL INTEGRATION, ON THE OTHER HAND, IS CENTERED AROUND THE DOCUMENT. ANY DOCUMENT CAN IMMEDIATELY BE MAILED, FILED, OR REVISED WITHOUT HAVING TO GO THROUGH A SERIES OF STEPS TO SELECT A MODE OF OPERATION.
- 0 CLOSELY RELATED TO FUNCTIONAL INTEGRATION IS THE NEED FOR A CONSISTENT USER INTERFACE, SO THAT THE USER HAS A COMMON AND CONSISTENT SET OF CONCEPTS THAT APPLY TO ALL ASPECTS OF THE SYSTEM. COMMANDS, FUNCTION KEYS, OR FILENAMES SHOULD ALWAYS HAVE THE SAME MEANING, NO MATTER WHAT OPERATION IS BEING PERFORMED.
- 0 WE ALSO REALIZED THAT NO SINGLE VENDOR WOULD PROVIDE A COMPLETE OFFICE SUPPORT SYSTEM. IN MANY WAYS, OUR TASK WAS TO BUILD A NEXT GENERATION PRODUCT THAT WOULD BE ABLE TO INTERCONNECT AND EXCHANGE INFORMATION WITH THE VARIOUS WORD PROCESSORS, PERSONAL COMPUTERS, AND DEPARTMENTAL DATA PROCESSING SYSTEMS ALREADY IN PLACE. WE FELT THAT IN ADDITION TO THE NEW CAPABILITY AND TOOLS THAT HAD TO BE DEVELOPED, THERE WAS A NEED TO BUILD INTELLIGENT LINKS TO EXISTING AND FUTURE SYSTEMS THAT WOULD PERFORM SPECIFIC TASKS WITHIN THE OFFICE.



- O WE ALSO SPENT A LOT OF TIME SELECTING THE CORRECT TECHNICAL ARCHITECTURE FOR THE PRODUCT. WE CONSIDERED ALTERNATIVES RANGING FROM A LARGE CENTRAL COMPUTER SERVING THOUSANDS OF USERS, TO LOCAL AREA NETWORKS INTERCONNECTING PERSONAL COMPUTERS ON EVERYONES' DESKS, TO ADVANCED TELEPHONE SYSTEMS THAT COULD HANDLE BOTH VOICE AND DATA. WE CONCLUDED THAT OUR PRODUCT HAD TO BE ABLE TO MODEL THE ORGANIZATIONAL STRUCTURE OF OUR CLIENTS - THAT SOME INDIVIDUALS WOULD EACH REQUIRE THEIR OWN PERSONAL COMPUTER; THAT ORGANIZATIONAL UNITS OF VARYING SIZES WOULD EACH REQUIRE THEIR OWN SHARED SYSTEMS; THAT VARIOUS CORPORATE FUNCTIONS WOULD CONTINUE TO BE CENTRALIZED ON LARGE DATA PROCESSING COMPUTERS; AND THAT ALL OF THIS HAD TO BE NETWORKED TOGETHER IN A WAY THAT WAS TRANSPARENT TO THE INDIVIDUAL;
- O FINALLY, WHILE WE WERE CONVINCED THAT OFFICE WORK WAS GENERIC AND COULD BE SUPPORTED BY A PROPERLY DESIGNED PRODUCT, EACH INDUSTRY AND EACH ORGANIZATION HAD ITS OWN UNIQUE CHARACTERISTICS. OUR PRODUCT HAD TO BE CAPABLE OF BEING TAILORED TO PROVIDE THAT UNIQUENESS, BUT WITHOUT BECOMING A CUSTOM SYSTEM FOR EACH CLIENT. WE HAD TO PROVIDE THE FLEXIBILITY OF THE CUSTOM SOLUTION, WITH THE ECONOMICS OF A STANDARD PRODUCT.

PERHAPS THE MOST SATISFYING EXPERIENCE FOR US OVER THE PAST FOUR YEARS HAS BEEN TO THE EXTENT TO WHICH THESE ORIGINAL CONCEPTS HAVE BEEN REINFORCED AND CONFIRMED THROUGH THE DND FIELD TRIAL AND OTHER WORK.

- 0 THE FIRST THREE OF THESE CONCEPTS - INTUITIVE EASY OF USE, FUNCTIONAL INTEGRATION, AND CONSISTENT USER INTERFACE - HAVE BEEN A VERY MAJOR FACTOR IN ACCEPTANCE OF OFFICE SYSTEMS BY THE ORGANIZATION. WE FOUND THAT AN INDIVIDUAL'S FIRST EXPERIENCE WITH RENAISSANCE IS "HEY, THIS MAKES SENSE - I CAN UNDERSTAND THIS". THEY CAN USE THE TOOL TO HELP THEM IN THEIR JOB AND DO NOT HAVE AN INTELLECTUAL BARRIER TO USING THE SYSTEM. A SECOND ASPECT OF USABILITY CONCERNS DATA INTEGRITY. WE DESIGNED OUR PRODUCT SO THAT USERS COULD ASSUME THAT INFORMATION CREATED AND STORED USING RENAISSANCE WOULD BE THERE WHEN THEY ASKED FOR IT. TO CREATE THIS CAPABILITY WAS A NON-TRIVIAL TECHNICAL CHALLENGE, BUT FEEDBACK HAS CONFIRMED IT WAS WORTH THE INVESTMENT.
- 0 INTERCONNECTION TO OTHER SYSTEMS WAS NOT ORIGINALLY A MAJOR ASPECT OF OUR FIELD TRIAL. THROUGH THE COURSE OF THE FIELD TRIAL, HOWEVER, WE HAVE INCREASED THE EMPHASIS ON INTERCONNECTION WITH PERSONAL COMPUTERS AND CONTINUE TO SEE MORE AND MORE REQUIREMENT FOR INTERCONNECTION TO OTHER SYSTEMS. PARENTHETICALLY, WE SEE AN EVEN GREATER EMPHASIS ON THE NEED FOR INTERCONNECTION WITHIN OUR OTHER PILOT SITES.
- 0 TECHNICALLY, THE DISTRIBUTED NETWORK ARCHITECTURE OF RENAISSANCE IS PERHAPS ITS MOST DISTINGUISHING CHARACTERISTIC. EXPERIENCE GAINED THROUGH THE FIELD TRIAL HAS CONFIRMED THAT IT IS INDEED THE CORRECT ARCHITECTURE FOR AN OFFICE SUPPORT SYSTEM. A LOCALIZED FAILURE OF A PROCESSOR OR COMMUNICATION LINK HAS ONLY A MINOR IMPACT ON



OVERALL SYSTEM AVAILABILITY. IT MAKES PROPER USE OF PERSONAL COMPUTERS, BY RETAINING THEIR AUTONOMY AND YET MAKING THEM AN INTEGRAL PART OF AN OVERALL SYSTEM. IT HAS ALLOWED US TO DEVELOP A VERY POWERFUL COMMUNICATION CAPABILITY, PERHAPS WITHOUT PEER IN THE INDUSTRY, WITHOUT ANY PERCEPTION OF THAT COMPLEXITY SEEN BY THE INDIVIDUAL USER. IT MEANS THAT WE CAN GUARANTEE DELIVERY OF MESSAGES AND DOCUMENTS EITHER ACROSS THE OFFICE OR ACROSS THE COUNTRY, EVEN THOUGH PART OF THE NETWORK MIGHT HAVE BEEN UNAVAILABLE AT THE TIME THE TRANSMISSION WAS INITIATED.

- o FINALLY, WE HAVE GIVEN THE TAILORABILITY CHARACTERISTIC OF RENAISSANCE A REAL TEST IN THE FIELD TRIAL. WE HAVE SUCCESSFULLY IMPLEMENTED UNIQUE DND VERSIONS OF DOCUMENT FORMATS, WITHOUT HAVING TO CHANGE ANY OTHER PARTS OF RENAISSANCE. THESE CUSTOM DOCUMENTS ARE PROCESSED THROUGH THE STANDARD USER INTERFACE, AND CAN BE FILED, MAILED, AND REVISED WITH THE FULL CAPABILITIES OF THE SYSTEM. BY MAKING RENAISSANCE HANDLE THE DOCUMENT FORMATS USED WITHIN DND, WE WERE ABLE TO EXPEDITE INTERNAL COMMUNICATION WITHIN THE DEPARTMENT. RENAISSANCE BECAME PART OF THE REAL ORGANIZATION, NOT AN EXTRA COMPUTER SYSTEM THAT WAS OUT OF THE MAIN STREAM.

I WOULD NOW LIKE TO TELL YOU A LITTLE BIT ABOUT THE RENAISSANCE PRODUCT ITSELF. WHILE YOU ARE HERE TODAY, I WOULD ENCOURAGE YOU TO STOP BY OUR BOOTH IN THE EXHIBIT AREA AND TRY IT. I THINK YOU'LL LIKE WHAT YOU SEE. I'LL JUST SPEND A FEW MOMENTS NOW HIGHLIGHTING THE UNIQUE CHARACTERISTICS OF RENAISSANCE.

ONE OF THE UNIQUE CHARACTERISTICS OF PEOPLE IS THAT EACH OF US IS UNIQUE. WE ALL HAVE DIFFERENT WAYS OF DOING THINGS, DIFFERENT WAYS OF ORGANIZING OUR WORK, SETTING OUR PRIORITIES, AND MANAGING OUR TIME. RENAISSANCE IS AN OFFICE SYSTEM, DESIGNED FOR SHARING, EXCHANGING AND PROCESSING INFORMATION WITHIN AN OFFICE. BUT WITHIN THAT, IT HAS A VERY HIGH DEGREE OF INHERENT FLEXIBILITY WHICH ALLOWS EACH PERSON USING THE SYSTEM TO DO SO IN THEIR OWN WAY, AND TO MANAGE THEIR PERSONAL INFORMATION ACCORDING TO THEIR OWN TECHNIQUE AND STYLE - TO LET EACH INDIVIDUAL WORK IN THE WAY WHICH IS MOST NATURAL TO THEM.

IF THERE IS ONE WORD TO DIFFERENTIATE OUR APPROACH TO OFFICE SYSTEMS, IT IS INTEGRATION. INTEGRATION WITH EXISTING INVESTMENTS IN WORD PROCESSORS, PERSONAL COMPUTERS, DATA PROCESSING EQUIPMENT AND EXTERNAL DATA BANKS. THE MULTI-VENDOR OFFICE IS A FACT OF LIFE. BY ACTING AS THE INTEGRATOR AND PROVIDING LINKS TO THESE POCKETS OF INFORMATION, A SINGLE WORKSTATION A PERSON'S DESK CAN PROVIDE ACCESS NOT ONLY TO ALL RENAISSANCE FUNCTIONS, BUT TO OTHER COMPUTERS AND DATA BANKS AS WELL. WE DESIGNED RENAISSANCE SO THAT THESE LINKS AND CONNECTIONS ARE INTELLIGENT LINKS WHICH EXCHANGE DOCUMENTS, OFTEN IN REVISABLE FORM, FROM ONE ENVIRONMENT TO ANOTHER. A REPORT CREATED ON A WORD PROCESSING SYSTEM CAN BE DISTRIBUTED THROUGH RENAISSANCE AND HAVE THE RESULTS OF THE SPREADSHEET FROM A PERSONAL COMPUTER INCLUDED WITHIN IT.

IN OUR BROCHURE WE BEGIN BY SAYING THAT "RATHER THAN TEACHING PEOPLE ABOUT COMPUTERS, WE TAUGHT COMPUTERS ABOUT PEOPLE". PEOPLE FAMILIAR WITH OFFICE WORK AND OFFICE TERMINOLOGY CAN USE RENAISSANCE ALMOST IMMEDIATELY. ANYONE OF YOU IN THE AUDIENCE, EVEN WITHOUT A COMPUTER BACKGROUND, COULD LEARN HOW TO CREATE AND REVISE DOCUMENTS, SEND AND

RECEIVE MAIL, FILE AND RETRIEVE INFORMATION, AFTER ONLY A FEW MOMENTS INTRODUCTION. THE ONE THING THAT PEOPLE IN OFFICES DO MORE THAN ANYTHING ELSE, IS GET INTERRUPTED. IN THE MIDDLE OF WRITING A MEMO, WHEN THE BOSS ASKS FOR SOME INFORMATION YOU NEED FROM YOUR FILES, THERE IS NO NEED TO SAVE OR SUSPEND A PARTIALLY COMPLETED TASK. IT WILL SIMPLY BE THERE ON YOUR DESK WHEN YOU HAVE TIME TO GET BACK TO IT. WE REALIZE THAT PEOPLE HAVE TO TRUST RENAISSANCE OR THEY WON'T USE IT FOR IMPORTANT WORK. WE HAVE BUILT A HIGH DEGREE OF DATA INTEGRITY INTO RENAISSANCE, AND WE HAVE DONE SO WITHOUT ADDING COMPLEXITY TO THE USERS' INTERFACE. ALL OF THAT WORK GOES ON BEHIND THE SCENES.

I WON'T RECITE ALL THE FUNCTIONS AND FEATURES AND BENEFITS THAT RENAISSANCE PROVIDES, BUT I DID WANT TO GIVE YOU A FEELING FOR ITS UNIQUE CHARACTERISTICS: ITS INTUITIVE EASE OF USE; ITS ABILITY TO INTEGRATE OR INTERCONNECT WITH OTHER VENDORS' SYSTEMS; AND ITS INHERENT FLEXIBILITY THAT ALLOWS IT TO ADAPT TO AN INDIVIDUAL'S OWN WAY OF WORKING.

WE AT XIOS ARE OBVIOUSLY ENTHUSIASTIC ABOUT OUR RENAISSANCE PRODUCT. BASED ON OUR FIELD TRIAL EXPERIENCE AND GENERAL MARKETPLACE REACTION, WE THINK THERE IS A STRONG JUSTIFICATION TO FEEL THAT WAY. BUT A GOOD PRODUCT IS NOT THE ONLY PREREQUISITE TO SUCCESS IN THE OFFICE SYSTEMS BUSINESS.

WE ARE CONVINCED THAT THE MARKETPLACE IS NOT LOOKING TO BUY MORE TECHNOLOGY, BUT TO BUY SOLUTIONS TO THEIR OFFICE SYSTEMS REQUIREMENTS. TO DO SO REQUIRES A SUPPLIER WHO HAS MADE A REAL COMMITMENT TO PROVIDING EVERYTHING THAT IS PART OF A COMPLETELY INTEGRATED SOLUTION.

THE XIOS STRATEGY IS TO DEVELOP AN EMPATHY FOR THE BUSINESS OF OUR CUSTOMERS - TO UNDERSTAND THEIR OBJECTIVES, PRIORITIES AND OPPORTUNITIES SO THAT WE CAN PROVIDE SOLUTIONS THAT MEET THE NEEDS OF THE INDIVIDUALS WITHIN THE ORGANIZATION AND PROVIDE BENEFIT TO THE ORGANIZATION AS A WHOLE. WE SEEK THE BEST PROFESSIONALS IN THE INDUSTRY. PEOPLE WITH FORESIGHT AND CREATIVITY, WHO CAN DEFINE A PRODUCT THAT WILL STILL BE USEFUL FIVE AND TEN YEARS FROM NOW; PEOPLE WHO ARE EXPERTS IN TECHNOLOGY, WHO CAN BUILD A PRODUCT TO THOSE SPECIFICATIONS; AND PEOPLE WHO UNDERSTAND OFFICES AND OFFICE WORKERS, WHO CAN TRANSLATE THAT PRODUCT INTO A SOLUTION FOR EACH CLIENT.

TO PROTECT OUR OWN INVESTMENT AND OUR CLIENT'S INVESTMENT, WE HAVE ADOPTED A STRATEGY FOR HARDWARE INDEPENDENCE. BY BASING RENAISSANCE ON THE UNIX OPERATING SYSTEM, WE HAVE POSITIONED OURSELF AT THE MAINSTREAM OF TECHNOLOGICAL EVOLUTION. THIS ALLOWS US TO TAKE ADVANTAGE OF FUTURE HARDWARE DEVELOPMENTS, WITH LEAST RISK, COST AND DISRUPTION.

FINALLY, WE CONSTANTLY HAVE ONE EYE TO THE FUTURE - MONITORING, EVALUATING AND TRYING OUT VARIOUS NEW TECHNOLOGIES, SUCH AS VOICE PROCESSING, DOCUMENT SCANNING, INTEGRATED TEXT GRAPHICS AND SO ON, TO MAKE SURE THAT AS EACH TECHNOLOGY MATURES, RENAISSANCE WILL BE READY TO MAKE USE OF IT.

TO ACCOMPLISH THIS STRATEGY, OUR APPROACH IS TO WORK WITH CLIENTS, NOT SIMPLY SELL TO THEM, SO THAT WE CAN UNDERSTAND THEIR NEEDS AND HOW OFFICE SUPPORT SYSTEMS WILL BENEFIT THEM. THIS MEANS THAT EACH INSTALLATION WILL HAVE A MUCH GREATER CHANCE OF SUCCESS IN PROVIDING

REAL BENEFIT. IT ALSO PROVIDES FEEDBACK TO OUR PRODUCT PLANNERS AND DEVELOPERS, TO ENSURE THAT OUR PRODUCT CONTINUES TO EVOLVE IN THE RIGHT DIRECTION.

IN FACT, WE ARE SO CONFIDENT THAT WE GUARANTEE YOUR SATISFACTION WITH RENAISSANCE. IF RENAISSANCE DOES NOT PROVIDE REAL BENEFIT TO YOUR ORGANIZATION AND TO THE PEOPLE THAT WORK WITHIN IT, WE WILL TAKE THE SYSTEM OUT AND GIVE BACK YOUR MONEY.

I THINK THAT IS IMPORTANT AT TODAY'S SESSION TO REVIEW THE ORIGINAL OBJECTIVES OF THE OCS PROGRAM - TO ENCOURAGE THE USE OF OFFICE SYSTEM TECHNOLOGIES WITHIN GOVERNMENT AND TO STIMULATE A CANADIAN SOURCE OF SUPPLY FOR SUCH PRODUCTS. AS A CONTRACTOR, WE LOOK PARTICULARLY AT THE SECOND OF THOSE OBJECTIVES, NAMELY, HOW WILL XIOS BE SUCCESSFUL AS A CANADIAN SUPPLIER OF OFFICE SUPPORT SYSTEMS? WE HAVE OBVIOUSLY COME A LONG WAY IN THE FOUR YEARS SINCE OUR RESEARCH INTO "THE NATURE OF OFFICES AND OFFICE WORK". WE HAVE INVESTED ROUGHLY FIVE MILLION DOLLARS IN THE DEVELOPMENT OF THE RENAISSANCE PRODUCT AND THE CREATION OF THE XIOS CORPORATION. THE OCS PROGRAM HAS PROVIDED US THE FIRST OF TWO PILOT INSTALLATIONS - A CRITICAL BRIDGE BETWEEN PRODUCT DEVELOPMENT AND COMMERCIAL SUCCESS.

BUT TO BE SUCCESSFUL, WE NEED HAPPY CUSTOMERS WHO PAY REAL MONEY TO BUY RENAISSANCE FOR USE WITHIN THEIR ORGANIZATION. CUSTOMERS THAT WILL SAY GOOD THINGS ABOUT US BECAUSE THEY HAVE RECEIVED REAL VALUE FOR THE PRODUCT AND SERVICES WE HAVE PROVIDED. WHEN WE DO THAT AND DO IT PROFITABLY, WE WILL BE A SUCCESSFUL CORPORATION BY ANYONE'S MEASURE.

OUR PRIORITIES AT THIS POINT ARE TO EXPAND BEYOND PILOT INSTALLATIONS TO A SOLID INSTALLED BASE OF CUSTOMERS WHO WILL PROVIDE US EVEN GREATER EXPERIENCE, REVENUE TO SUPPORT FURTHER EXPANSION, AND ENTHUSIASTIC REFERENCES TO ASSIST IN SELLING FURTHER BUSINESS. WE ALSO NEED PRIDE, CONFIDENCE, AND BELIEF IN WHAT WE ARE DOING. I WOULD LIKE TO STOP FOR PERHAPS A MOMENT AND DWELL ON THAT LAST POINT. IT HAS BEEN SAID THAT CANADIANS HAVE A TENDENCY TO EAT OUR OWN YOUNG, TO CRITICIZE OUR OWN ACCOMPLISHMENTS, AND TO PLAY DOWN OUR ABILITIES AND OPPORTUNITIES.

OCS WAS CONCEIVED BECAUSE THE OFFICE SYSTEMS INDUSTRY WAS FELT TO BE AN ECONOMIC OPPORTUNITY FOR CANADA, AN AREA IN WHICH CANADIAN COMPANIES COULD EXCEL. IT WAS A SOUND EXAMPLE OF INDUSTRY AND GOVERNMENT WORKING TOGETHER. IF WE ARE GOING TO CONTINUE TO WORK TOGETHER TO BUILD A SIGNIFICANT INDUSTRY IN THIS SECTOR, THEN WE MUST BOTH BELIEVE THAT WE CAN SUCCEED.

LET'S BE PROUD OF WHAT WE'VE ACCOMPLISHED. NOT BLINDLY OR FOOLISHLY, BUT CONFIDENTLY SO, BASED ON OUR KNOWLEDGE AND CONVICTION IN WHAT WE'VE DONE - WE'VE DEVELOPED A GOOD PRODUCT - A REAL WINNER.

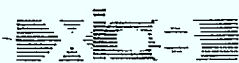
WE AT XIOS KNOW WE CAN BE SUCCESSFUL AND WE WANT OUR CUSTOMERS AND THE POLICY MAKERS WITHIN GOVERNMENT TO FEEL THAT WAY TOO.

WE AGREE WITH THE CURRENT GOVERNMENT THINKING THAT INDUSTRY MUST LEAD THE WAY AND GOVERNMENT SHOULD PROVIDE ENCOURAGEMENT, SUPPORT AND INFRASTRUCTURE. I BELIEVE THERE ARE MANY POSITIVE THINGS THE GOVERNMENT CAN DO TO HELP. I REMAIN CONVINCED THAT THE FIELD TRIALS UNDER THE OCS PROGRAM HAVE BEEN OF VERY POSITIVE BENEFIT TO AN EMERGING INDUSTRY, BECAUSE THEY FILLED A GAP BETWEEN PRODUCT

DEVELOPMENT AND COMMERCIAL LAUNCH. WHEN WE MADE OUR PROPOSAL TO CONDUCT A FIELD TRIAL, WE DID NOT HAVE A PRODUCT FOR SALE. ANY MANAGER OR EXECUTIVE WHO WOULD HAVE GONE OUT ON A LIMB TO BUY THAT NON-EXISTENT PRODUCT WOULD HAVE BEEN A STRONG CANDIDATE FOR CAREER COUNSELLING. YET WE NEEDED THAT FIRST INSTALLATION. BY PROVIDING SOME OF THE FUNDING UNDER THE AUSPICES OF INDUSTRIAL STIMULATION, THAT ASPECT OF THE RISK WAS REMOVED FROM THE USER DEPARTMENT. IN OTHER WORDS, THE OCS PROGRAM FOCUSED ON A MAJOR IMPEDIMENT AND PROVIDED A SOLUTION.

THE CANADIAN GOVERNMENT ALSO PROVIDES A NUMBER OF PROGRAMS AIMED AT ENCOURAGING EXPORT. IN THE LONG TERM, THE CANADIAN MARKETPLACE IS INSUFFICIENT TO SUPPORT ANY SIGNIFICANT COMPANY IN THE OFFICE SYSTEMS BUSINESS. THE MARKET TO THE SOUTH, THE LARGEST IN THE WORLD, IS PERHAPS 20 TIMES LARGER THAN CANADA. WHILE IT IS IMPORTANT THAT WE USE OUR HOME MARKET AS THE STARTING POINT - THE LAUNCH PAD - WE MUST QUICKLY EXPAND OUR ENERGIES TO THE SOUTH AND OFFSHORE. PROGRAMS LIKE PEMD, AGENCIES LIKE EDC AND CANADIAN COMMERCIAL CORPORATION, THE TRADE COMMISSIONERS WITHIN EXTERNAL AFFAIRS ARE ALL AIMED IN THE RIGHT DIRECTION.

PRODUCT DEVELOPMENT STIMULUS PROGRAMS CAN ALSO BE USEFUL - BUT ONLY SO LONG AS THEY DON'T CONSTRAIN A COMPANY'S ABILITY TO DEVELOP THE RIGHT PRODUCT FOR THE MARKETPLACE, IN THE WAY THEY SEE FIT. WE FOUND THE PROVISIONS WITHIN THE TAX ACT FOR THE SALE OF SCIENTIFIC RESEARCH TAX CREDITS, SRTC'S, PARTICULARLY VALUABLE IN ALLOWING US TO PARTIALLY FUND PRODUCT DEVELOPMENT WITHOUT ANY UNDUE OVERHEAD THAT IS NORMALLY ASSOCIATED WITH A SUBSIDY OR GRANT PROGRAM.



THE LAST AREA, I BELIEVE, IS THE GREATEST SINGLE VEHICLE THROUGH WHICH GOVERNMENT CAN CONTRIBUTE TO THE SUCCESS OF CANADIAN INDUSTRY - PROCUREMENT POLICY. WHAT COMPANIES LIKE XIOS REQUIRE TO BE SUCCESSFUL ARE SOLID CUSTOMERS. BUT THERE IS ALSO A REALITY THAT HIGH TECHNOLOGY CARRIES A SIGNIFICANT RISK, AND THAT THE NEWER THE COMPANY, THE NEWER THE PRODUCT, THE NEWER THE INNOVATION, THE GREATER THE RISK. WHAT I BELIEVE SHOULD BE DONE IN THE AREA OF PROCUREMENT POLICY, IS TO PROVIDE SOME FORM OF INSURANCE, SO THAT A CUSTOMER CAN DECIDE TO BUY AN INNOVATIVE NEW PRODUCT WHICH MEETS A NEED, FROM A NEW CANADIAN COMPANY, WITHOUT UNDUE CONCERN ABOUT RISKS ASSOCIATED WITH SUCH A DECISION.

IF I COULD SUM UP OUR BUSINESS STRATEGY IN A FEW WORDS, IT IS MUTUAL TRUST AND PARTNERSHIP - AND THAT APPLIES EQUALLY TO OUR RELATIONSHIP WITH CUSTOMERS, WITH SUPPLIERS, AND WITH GOVERNMENT POLICY MAKERS.

IN EVERY CASE, IT IS OUR OBJECTIVE TO MAKE YOU SUCCESSFUL, WHETHER YOU ARE A CUSTOMER, A SUPPLIER, OR A POLICY MAKER.

WE SINCERELY BELIEVE IF YOU ARE SUCCESSFUL THAT WILL MAKE US SUCCESSFUL.

FURTHERMORE, THE OBJECTIVES OF THE OCS PROGRAM TO ENCOURAGE THE USE OF OFFICE SYSTEMS TECHNOLOGY WITHIN GOVERNMENT, AND TO STIMULATE A CANADIAN SOURCE OF SUPPLY OF SUCH PRODUCTS, WILL BOTH BE MET AND WITH GREAT SUCCESS.

IN CLOSING, THANK YOU DOC, ESPECIALLY ANDRE DUBOIS, THE PROGRAM DIRECTOR, ROGER WAINWRIGHT, OUR LIAISON, AND THE REST OF THE OCS PROGRAM STAFF, AND THANK YOU DND, ESPECIALLY MAJOR GENERAL BERGIN AND PROJECT MANAGER, MAJOR JOHN MACKO FOR BEING DEMANDING BUT UNDERSTANDING CUSTOMERS.



PRESENTATION
BY
DEPARTMENT OF NATIONAL DEFENCE
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA CANADA
MARCH 27, 1985

SLIDE 1 ON THE DEPARTMENT OF NATIONAL DEFENCE'S ASSOCIATION WITH THE OFFICE COMMUNICATION SYSTEM PROGRAM BEGAN IN LATE 1981. DND DECIDED TO PARTICIPATE IN THE OCS PROGRAM TO INCREASE ITS KNOWLEDGE OF THE POTENTIAL BENEFITS OF OFFICE COMMUNICATIONS SYSTEMS AND TO ASSIST CANADIAN INDUSTRY IN TRIALLING ONE OF ITS PRODUCTS. WE HAD ONE MAJOR RESERVATION ABOUT THE PRODUCT BEING PROPOSED, AND THAT WAS THAT THE SYSTEM ENVISAGED WAS AN INSECURE ONE, WHEREAS DND CONTINUALLY DEALS WITH MATTERS WHICH ARE SECURITY SENSITIVE. HOWEVER, WE PROCEEDED WITH THE TRIAL OF THE XIOS PRODUCT BECAUSE OF THE TANGIBLE BENEFITS WE SAW FOR DND AND CANADIAN INDUSTRY.

SLIDE 1 OFF

WE DECIDED THAT THE TRIAL OF THE XIOS OCS PRODUCT SHOULD TAKE PLACE IN THE FINANCIAL AREA OF DND. THIS DECISION WAS TAKEN BECAUSE OF TWO MAIN CRITERIA: A. THE ADP SYSTEMS ALREADY IN PLACE IN THE FINANCIAL ORGANIZATION, AND B. THE NATURE OF THE POPULATION WHICH WOULD BE CALLED UPON TO TRIAL THIS PRODUCT.

IN 1981, THE FINANCIAL ORGANIZATION HAD EXPERIENCE WITH TWO MAINFRAME FINANCIAL SYSTEMS, THE MILITARY PAY SYSTEM AND THE DND FINANCIAL INFORMATION SYSTEM. THE PAY SYSTEM MAINTAINS THE PAY RECORDS OF ALL MILITARY PERSONNEL WHILE THE FINANCIAL INFORMATION SYSTEM MAINTAINS ALL THE RECORDS OF EXPENDITURE AND REVENUE OF DND. IN ADDITION TO THESE TWO MAIN FRAME SYSTEMS, THE FINANCIAL ORGANIZATION ALSO HAD ABOUT A HALF-DOZEN MICRO-COMPUTER SUB-SYSTEMS FOR COSTING,

INFLATION MEASUREMENT AND ACCOUNT MAINTENANCE. IN SUMMARY, THERE WERE SOME PEOPLE IN THE ORGANIZATION WITH A GREAT DEAL OF ADP KNOWLEDGE AND HANDS-ON EXPERIENCE WHILE THERE WERE OTHERS WITH LITTLE OR NONE.

THE ORIGINAL TRIAL POPULATION OF THE DND FINANCIAL ORGANIZATION CONSISTED OF 600 PEOPLE CONTAINING A MIX OF BOTH MILITARY AND CIVILIAN, MALE AND FEMALE, AGES 18 TO 65, COMING FROM TWO GEOGRAPHICAL AREAS, FROM ALL POSITION LEVELS AND FROM ALL EDUCATION LEVELS. IT WAS OUR BELIEF THAT, WHATEVER THE OUTCOME OF THE OCS TRIAL, A COMPREHENSIVE AND VARIED SAMPLE WORK GROUP WOULD HAVE BEEN EXPOSED TO THE OCS SYSTEM AND ITS ASSOCIATED HARDWARE.

SLIDE 2 ON

AS YOU ARE NO DOUBT ALREADY WELL AWARE, DND TEAMED UP WITH SYSTEMHOUSE (NOW XIOS) FOR THE TRIALLING OF THE LATTER'S OCS PRODUCT CALLED "RENAISSANCE". XIOS IS A CANADIAN COMPANY IN THE BUSINESS OF SOFTWARE DEVELOPMENT AND SYSTEMS INTEGRATION.

SLIDE 2 OFF

SLIDE 3A ON

FROM A PURELY DND POINT OF VIEW, OUR FIELD TRIAL OBJECTIVES WERE:

1. FAMILIARIZE THE MAXIMUM NUMBER OF PEOPLE WITH ADP TERMINALS, THROUGH ACTUAL USE;

2. DISCOVER THE AREAS WHERE THIS NEW TECHNOLOGY COULD BE APPLIED, WHAT IT WOULD DO TO PRODUCTIVITY, AND WHAT WOULD BE THE ASSOCIATED COSTS;
3. ASSESS THE IMPACT OF HUMAN ENGINEERING FACTORS IN INTRODUCING THIS TYPE OF TECHNOLOGY;
4. PLAY A PARTICIPATING ROLE IN THE EXPOSURE OF CANADIAN PRODUCTS SUCH AS FIBRE OPTIC LOCAL AREA NETWORKS AND, OF COURSE, THE XIOS PRODUCT, "RENAISSANCE".

SLIDE 3A OFF

SLIDE 3B ON IN ADDITION TO THESE SPECIFIC DND OBJECTIVES, WE WERE ALSO CONSCIOUS OF THE FACT THAT WE WERE COOPERATING IN FULFILLING THE OBJECTIVES OF THE DEPARTMENT OF COMMUNICATIONS IN ITS OCS PROGRAM. THESE, AS YOU ARE WELL AWARE, ARE:

1. CANADIAN INDUSTRIAL STIMULATION; AND

SLIDE 3B OFF 2. GOVERNMENT UTILIZATION OF CANADIAN PRODUCTS.

THE MONETARY BUDGET FOR THE DND/OCS PROJECT WAS FIXED AT \$3.5M OF WHICH \$2.8M WAS PROVIDED BY DOC. IN ADDITION, SHL/XIOS HAD OBVIOUSLY SPENT A GREAT DEAL OF ITS OWN MONEY AND WOULD CONTINUE TO DO SO IN DEVELOPING AND TRIALLING ITS "RENAISSANCE" PRODUCT. THE DND FACILITIES AND PEOPLE USED IN

TRIALING THE OCS PRODUCT WERE ADDITIONAL COSTS TO BE BORNE BY DND.

IT IS OBVIOUS THAT WITHOUT SOME KIND OF GOVERNMENT PROGRAM SUCH AS THE DOC/OCS PROGRAM, A TRIAL SUCH AS THAT NOW UNDERWAY WITHIN DND WOULD NOT HAVE BEEN POSSIBLE. IT WAS OBVIOUS TO ME THEN, AND IT IS NOW, THAT THE SUCCESS OF UNDERTAKINGS SUCH AS THE OCS PROGRAM NEEDS CAREFUL MANAGEMENT COOPERATION AND DISCIPLINED CONTROL BETWEEN THE PARTIES INVOLVED, IN OUR CASE, DND, DOC, AND XIOS. THE GOODWILL BETWEEN THE THREE PARTIES INVOLVED CONTINUES MORE STRONGLY TODAY THAN EVER BEFORE AND I MUST TELL YOU THAT I HAVE BEEN VERY IMPRESSED BY THE ENDLESS EFFORT EXPENDED BY XIOS PERSONNEL IN OVERCOMING IDENTIFIED PROBLEM AREAS.

THE DND FIELD TRIAL IDEA WAS FIRST BROUGHT TO DND ATTENTION IN LATE 1981 AND THE TRIAL ITSELF IS EXPECTED TO END IN MAR 1986. SHL/XIOS BECAME ACTIVELY INVOLVED WITH DND IN SEP 1982.

SLIDE 4 ON

THE FIELD TRIAL LOCATION IS CONCENTRATED IN THE FINANCIAL ORGANIZATIONS AT NATIONAL DEFENCE HEADQUARTERS IN OTTAWA, AIR COMMAND HEADQUARTERS IN WINNIPEG AND CANADIAN FORCES BASE WINNIPEG. THE SYSTEM CONFIGURATION CONSISTS OF 130

SLIDE 4 OFF

WORKSTATIONS - SOME ARE SHARED - OVER 200 USERS HAVE BEEN TRAINED TO USE THE SYSTEM IN A WORK AREA CONSISTING OF OVER

600 EMPLOYEES. TO HELP IMPROVE COMMUNICATIONS CAPABILITIES,
EACH WORKSTATION, WHEN REQUIRED, WILL BE ABLE TO PERFORM SUCH
SLIDE 5 ON FUNCTIONS AS DOCUMENT CREATION, TIME AND TASK MANAGEMENT,
ELECTRONIC MAIL AND ELECTRONIC FILING, AS WELL AS HAVE THE
ABILITY TO LINK WITH PERSONAL COMPUTERS WITH EXTENSIVE
SLIDE 5 OFF SPREADSHEET AND STATISTICAL PROCESSING CAPABILITIES. THE
INNOVATING FEATURE OF THESE FUNCTIONS IS THAT THEY WILL ALL BE
SLIDE 6 ON AVAILABLE ON A SINGLE TERMINAL. ALL SYSTEM USERS WILL BE ABLE
TO COMMUNICATE WITH ONE ANOTHER REGARDLESS OF THE LOCATION.
OTTAWA AND WINNIPEG WILL COMMUNICATE OVER A DEDICATED
COMMUNICATIONS LINK WHILE LOCAL AREA NETWORKS FEATURING FIBRE
OPTIC CABLES WILL BE USED TO CONNECT USER NODES WITHIN THE
SLIDE 6 OFF SAME LOCAL AREA GROUP WHICH MEANS WITHIN THE SAME BUILDING.

THE PROJECT IS DIVIDED INTO 3 PHASES. THE FIRST PHASE BEGAN
SLIDE 7 ON IN SEP 82, AND INCLUDED A REQUIREMENTS ANALYSIS FOLLOWED BY
THE DEVELOPMENT OF A FUNCTIONAL SPECIFICATION, A TECHNICAL
ARCHITECTURE, A HARDWARE SPECIFICATION AND AN OVERALL
IMPLEMENTATION PLAN. THIS PHASE LASTED TEN MONTHS AND WAS
COMPLETED IN AUG 83.

THE SECOND PHASE BEGAN WITH FURTHER DEVELOPMENT AND PLANNING, AND THE NEGOTIATION LEADING TO A PHASE TWO CONTRACT WHICH WAS EVENTUALLY SIGNED NINE MONTHS LATER.

DURING THE INITIAL PERIOD OF PHASE TWO, A SMALL PILOT PROJECT SUPPORT SYSTEM WAS INSTALLED TO ASSIST PROJECT MANAGEMENT STAFF AND TO PROVIDE A DEMO OF WHAT WAS TO BE EXPECTED IN THE FIELD TRIAL.

SINCE THE SIGNING OF THE PHASE TWO CONTRACT, ACTIVITIES HAVE BEEN TAKING PLACE TO PUT AN OPERATIONAL SYSTEM IN PLACE BY END APR 85 AND, AS I MENTIONED BEFORE, THE FIELD TRIAL WILL END 31 MAR 86. THE THIRD PHASE OF THE TRIAL WILL CONSIST OF THE TIME TO COMPLETE THE EVALUATION REPORT WHICH WILL ADDRESS ISSUES SUCH AS SYSTEM PERFORMANCE, USER ACCEPTANCE, PRODUCTIVITY, SECURITY, AND HUMAN, SOCIAL AND ORGANIZATIONAL FACTORS.

I HAVE ALREADY LISTED THE DND OBJECTIVES FOR THE FIELD TRIAL. THE POTENTIAL BENEFITS, FROM DND'S POINT OF VIEW, ARE NOW BECOMING APPARENT:

1. THE PEOPLE INVOLVED WITH THE ADP TERMINALS HAVE REACTED IN A VERY POSITIVE AND ENTHUSIASTIC MANNER WHICH LEADS ME TO BELIEVE THAT THE INTRODUCTION OF ADP TERMINALS IN ALL THEIR FORMS WITHIN DND WILL NOT POSE GREAT PROBLEMS IF WE, AS WE HAVE DONE IN THE OCS TRIAL, REMAIN SENSITIVE TO PARTICULAR PEOPLE-RELATED PROBLEMS SUCH AS PREGNANCIES AND EYE STRAIN.

2. THE CORRESPONDENCE FORMATS WHICH HAVE BEEN PROGRAMMED WITHIN THE XIOS SOFTWARE PACKAGE WILL SPEED UP CORRESPONDENCE PREPARATION, REVISION AND DESPATCH. WE SHOULD SEE A PRODUCTIVITY IMPROVEMENT IN THIS AREA. ALREADY, I HAVE PERSONALLY NOTICED THE SPEED UP IN MY OWN OFFICE;
3. THE USER FRIENDLY ASPECT OF THE XIOS PRODUCT HAS ENCOURAGED ALL POTENTIAL USERS TO TRY AND CONTINUE TO USE THE SYSTEM;
4. DIRECT CONTACTS ARE NOW BEING MADE BETWEEN REMOTE LOCATIONS WITHOUT THE NEED TO INVOLVE INTERMEDIARIES SUCH AS TYPISTS AND MESSENGERS;
5. WITH THE FURTHER PROGRESS OF THE TRIAL, PC'S ARE EXPECTED TO PROVIDE QUICKER AND MORE IN-DEPTH ANALYSIS THROUGH THE USE OF STATISTICAL PACKAGES. IN OUR BUDGETING ORGANIZATION, WE EXPECT TO EXPLOIT THE USE OF SOPHISTICATED SPREADSHEETS TO UPDATE BUDGETS. THE NETWORK OF PC'S WILL ALLOW INDIVIDUALS TO SEND SPREADSHEETS TO A KEY USER FOR CONSOLIDATION INTO AGGREGATE TOTALS.

6. IN OUR MILITARY PAY SERVICES DIRECTORATE, WE EXPECT TO SEE GREATER USE OF ELECTRONIC MAIL TO FACILITATE THE EXCHANGE OF CORRESPONDENCE BETWEEN IT AND ITS CUSTOMER ORGANIZATIONS. THE DIRECTORATE OF PAY SERVICES WILL ALSO BE THE TARGET OF SPECIAL CUSTOMIZATION PACKAGES TO SPEED UP SERVICE TO THE CUSTOMER IN THE AREA OF PENSION QUERIES. THE ELECTRONIC MAIL FEATURE WILL ALSO BE TESTED TO HANDLE PAY ENQUIRIES BETWEEN DPS AND CFB WINNIPEG. IN ADDITION, ELECTRONIC MAIL WILL IMPROVE COMMUNICATIONS BETWEEN INDIVIDUAL BUILDINGS WHICH TYPICALLY EXIST ON A CANADIAN FORCES BASE. THIS FACILITY WILL BE TESTED IN WINNIPEG.

SLIDE 9 OFF

THESE ARE SOME OF THE AREAS WHERE WE EXPECT SOME DIRECT BENEFITS. THE WHOLE EXPERIENCE OF THE FIELD TRIAL WILL PROVIDE MANY LESSONS, SOME WE EXPECT AND SOME UNEXPECTED ONES. ALMOST EVERYTHING THAT WILL BE DONE WILL BE UNDER ONE KIND OF SCRUTINY OR ANOTHER.

I WOULD LIKE AT THIS TIME TO TALK ABOUT SOME OF THE LESSONS LEARNED FROM OUR EXPERIENCE TO DATE:

SLIDE 10 ON

1. THERE MUST BE CONTINUAL AND POSITIVE INTERACTION BETWEEN THE PROJECT MANAGEMENT GROUP WITHIN DND AND THE XIOS PROJECT MANAGERS. THESE RELATIONSHIPS OVERCOME IDENTIFIED PROBLEMS QUICKLY WITHOUT DISRUPTING THE LINE RESPONSIBILITIES OF THE TRIAL POPULATION. I MUST CONGRATULATE THE XIOS PERSONNEL FOR THEIR VERY RESPONSIVE ATTITUDE TO OUR CONCERNS;
2. A FEEDBACK SYSTEM MUST EXIST TO REACT TO ALL INPUTS FROM THE TRIAL POPULATION. IF PROBLEMS ARE SOLVED QUICKLY, THE POPULATION'S INTEREST IN THE TRIAL WILL NOT WANE AND MORALE WILL REMAIN HIGH;
3. DELAYS, FRUSTRATIONS AND PROBLEMS WILL ARISE BUT THEY MUST BE MINIMIZED THROUGH CONCRETE AND VISIBLE ACTIONS TO REMOVE THE PROBLEM OR FRUSTRATION;
4. IT IS NECESSARY TO CALL A SPADE A SPADE SO THAT THE PERSONNEL USING THE SYSTEM WILL NOT BE MISLED BY EXAGGERATED SYSTEM CLAIMS WHICH CANNOT BE DELIVERED PRIOR TO THE DELIVERY OF A FULLY DEVELOPED PRODUCT;
5. KEEP TOP MANAGEMENT INFORMED OF PROGRESS SO THAT SURPRISES OF AN UNPLEASANT NATURE DO NOT RESULT IN A LACK OF SUPPORT FOR THE TRIAL;

6. EXPECT THE UNEXPECTED. WE HAD NO PARTICULAR IDEA ABOUT THE NEED FOR COMPATABILITY BETWEEN THE BUILDINGS AND THE HARDWARE. NORMAL BUILDING AIR CONDITIONING IS NOT IN ITSELF ENOUGH. THE LOCATIONS OF COOLING AND HEATING DUCTS, WALLS, ETC, HAVE A BEARING ON THE PROPER FUNCTIONING OF THE SYSTEM;
7. IT IS NECESSARY TO ASSESS THE LOST PRODUCTIVITY THROUGH TRAINING, MEETINGS, ETC. THE PEOPLE BILL IS HIGH DURING TRIALS OF THIS NATURE; AND
8. TRAINING, WHICH NORMALLY HAS BEEN AN EXPENSIVE AND TIME-CONSUMING PROCESS IS TURNING OUT TO BE NOT AS ONEROUS OR TIME-CONSUMING AS I HAD EXPECTED;
9. THE BUDGET PROBLEMS WHICH I EXPECTED HAVE NOT MATERIALIZED AND WE ARE STILL ON TARGET.

SLIDE 10 OFF

IN AN OVERALL SENSE, I CAN TELL YOU THAT OUR EXPERIENCES WITH XIOS AND SHL HAVE BEEN POSITIVE ONES. THERE HAVE BEEN DELAYS, FRUSTRATIONS AND PROGRESS. I CANNOT REMEMBER ANY OCCASION WHEN I BROUGHT PROBLEMS TO THE ATTENTION OF XIOS THAT THEY DID NOT RESPOND IN A POSITIVE AND SPEEDY MANNER TO OVERCOME THEM. WE STILL HAVE PROBLEMS BUT I AM POSITIVE THAT BY THE END OF THE DND TRIAL, XIOS WILL HAVE A MATURE MARKETABLE PRODUCT WHICH CANADIANS CAN USE AT HOME AND SELL ABROAD.

I THANK YOU. ARE THERE ANY QUESTIONS?

DEPARTMENT
OF
NATIONAL DEFENCE
EMBLEM

OFFICE COMMUNICATION SYSTEMS PROGRAM

DEPARTMENT OF NATIONAL DEFENCE/SYSTEMHOUSE LTD.

FIELD TRIAL EXPERIENCE

DOC PROGRAM OBJECTIVES

. INDUSTRIAL STIMULATION

.GOVERNMENT UTILIZATION OF CANADIAN PRODUCTS.

DND FIELD TRIAL OBJECTIVES

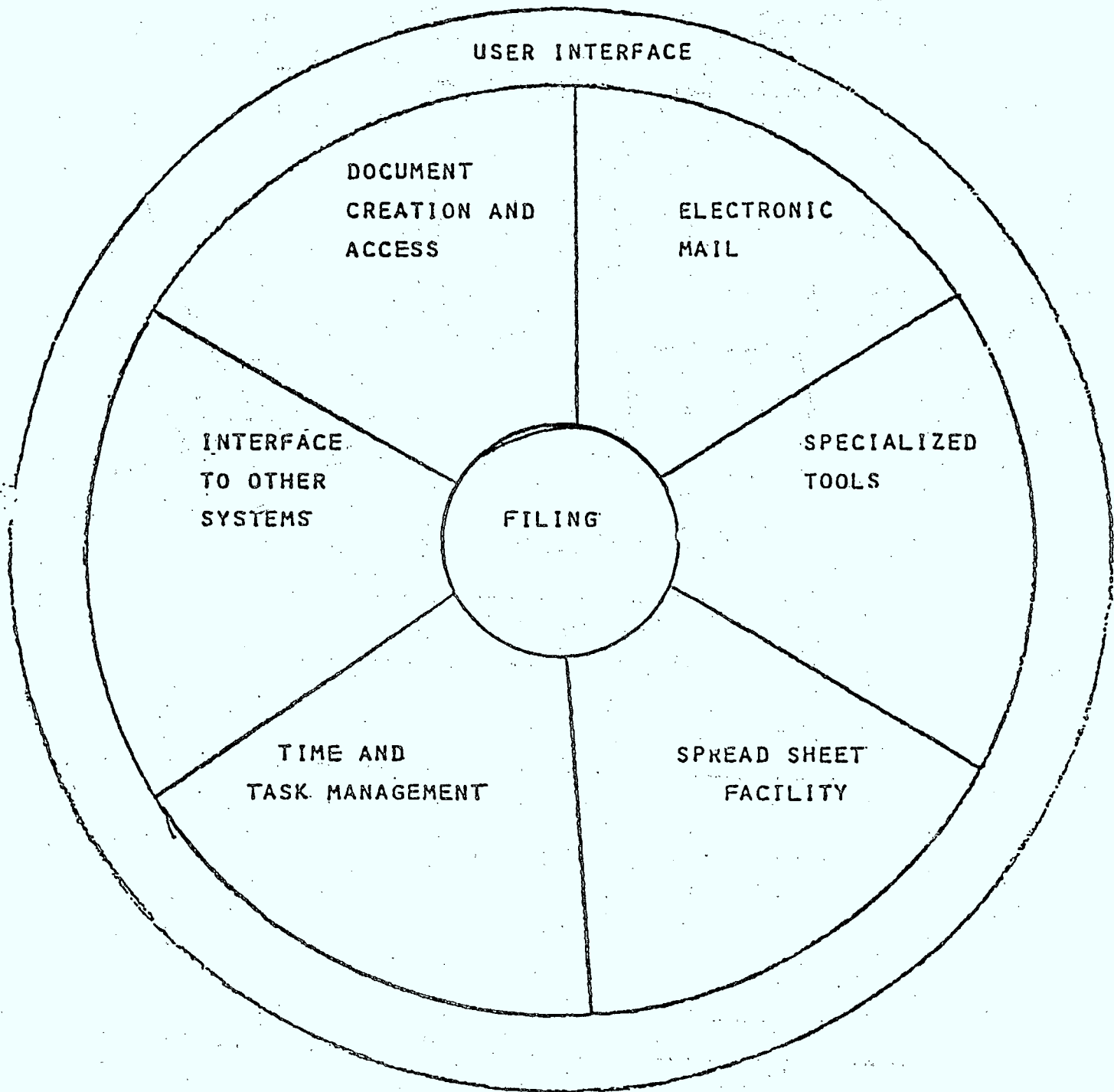
- .FAMILIARIZE MAXIMUM NUMBER OF PEOPLE TO ADP TERMINALS
- .EXPLORE AREAS FOR APPLICATION OF TECHNOLOGY
- .CONDUCT COST/BENEFIT ANALYSIS
- .DEFINE HUMAN ENGINEERING PROBLEMS
- .ASSESS POSSIBLE PRODUCTIVITY GAINS
- .ASSESS POSSIBLE EXPANSION OF THE OCS SYSTEM WITHIN DND
- .ASSESS IMPACT OF OCS ON PILOT WORK FORCE.

4

AREAS OF IMPACT WITHIN NATIONAL DEFENCE

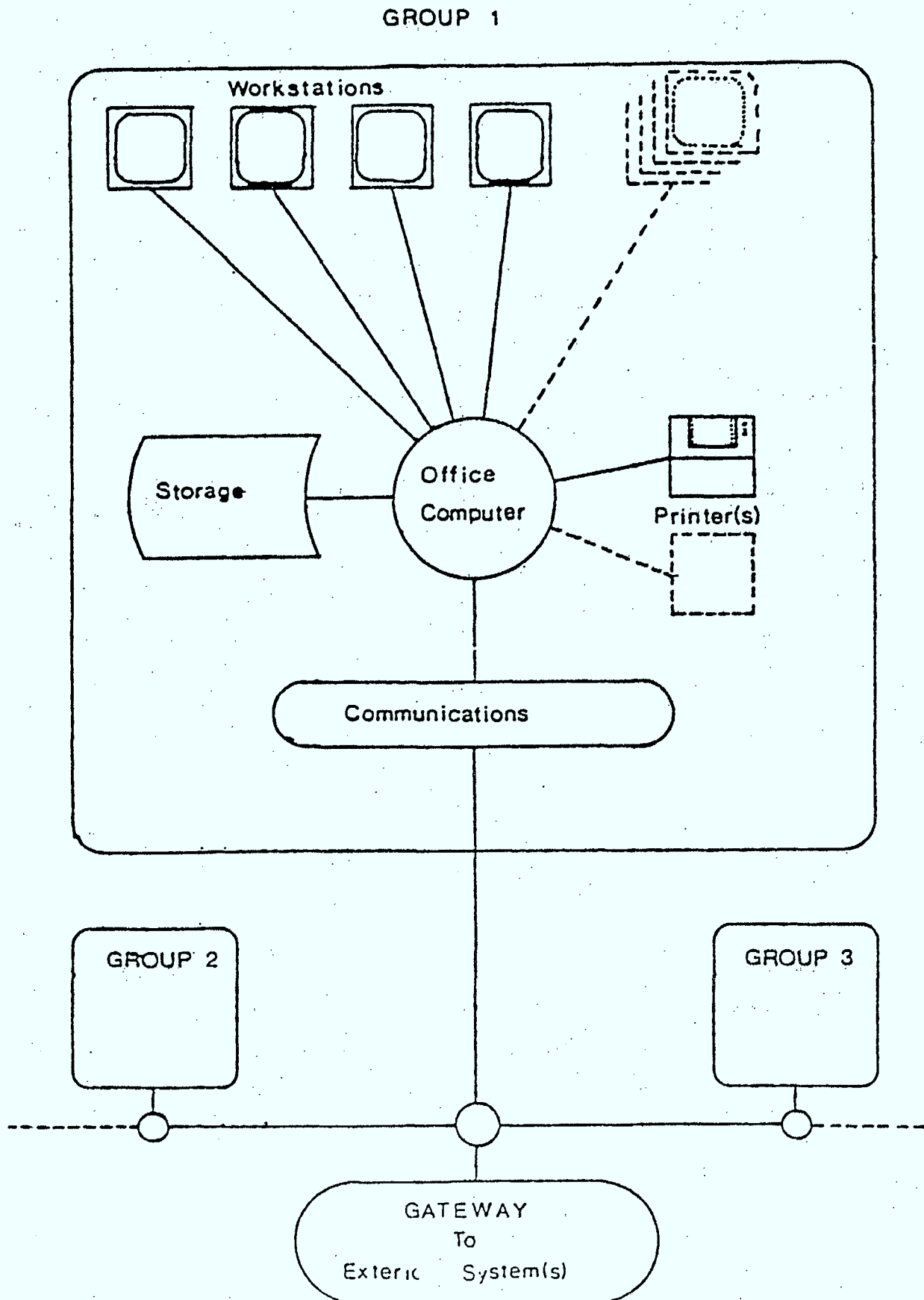


FUNCTIONAL COMPONENTS



WHAT IT MIGHT LOOK LIKE:

AN OFFICE GROUP



8

SUMMARY OF PROJECT PHASES

PHASE I - REQUIREMENTS DEFINITION AND DESIGN

PHASE II - TRAINING AND IMPLEMENTATION

PHASE III - FINAL EVALUATION REPORT

6

EVALUATION ISSUES

- . PEOPLE ACCEPTANCE
- . SYSTEM PERFORMANCE
- . HUMAN ENGINEERING FACTORS
- . PRODUCTIVITY
- . COST BENEFIT ANALYSIS
- . SECURITY

9

EXPECTED BENEFITS

- . IMPROVED KNOWLEDGE OF
 - TECHNOLOGY
 - AREAS TO APPLY IT
 - IMPACT ON PERSONNEL
 - PRODUCTIVITY GAINS
 - COSTS
- . IMPROVED EMPLOYEE MORALE
- . MORE EFFICIENT COMMUNICATIONS
- . QUICKER RESPONSE TO CUSTOMERS
- . MORE COMPREHENSIVE ANALYSIS

LESSONS LEARNED

- . MANAGEMENT IS CRITICAL
- . GOOD HUMAN INTERFACE LEADS TO READY ACCEPTANCE
- . TRAINING IS IMPORTANT

PRESENTATION
BY
OCRA COMMUNICATIONS INC.
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA CANADA
MARCH 27, 1985

Speech given by George Arkeveld, Vice President of Sales, Gandalf Systems Group, at the OCS Seminar on March 27, 1985 at the Conference Centre in Ottawa, Canada.

My name is George Arkeveld and I am here to tell you about OCRA Communications Inc. and how we approached the Field Trial at Environment Canada. Let me begin with some corporate history.

Back in 1981, OCRA was a very young company organized as a consortium of several high tech firms calling themselves the Office Communications Research Associates. These companies included originally:

- Gandalf
- Nabu
- CNCP Telecommunications
- Skyline Cablevision
- Cable Telecommunications Research Institute
- Telecable Laurentian
- Ottawa Cablevision

All had joined in an effort to consolidate their interests with respect to offering total office automation systems. How we were going to do this was a little unclear but the intentions were good. Then along came an opportunity which shaped the entire future and direction of the company.

The opportunity came in the form of the Office Communications Systems Program. For OCRA, the program is more than pure funding of research and development in the electronic office system arena - it's funding with a catch - it had to be followed by a clear set of deliverables. OCRA was given a chance to develop and test a system within a working

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office. An office which was expecting a fully developed system - one from which they could measure the impact of office automation on the organization. So we didn't have much time to get it right.

To mobilize ourselves to meet the challenge the company changed from a consortium to a fully incorporated operational company known to you all as OCRA Communications Inc.. We set out to put together a team of experts in the areas of systems design, UNIX, training and evaluation as well as project management. For the next two years, the company was fully engrossed in research and development and satisfying the requirements for our field trial.

Our goal was to develop a state of the art system, test it fully and then start marketing once we felt comfortable with what we had achieved. We realize this is a novel approach in an industry plagued with credibility problems from early product announcements and promises not kept. But it was the only way we would do business.

We are now at a point where we are ready to market a world class product developed as a result of the Office Communications Systems Program and in partnership with the Field Trial users at Environment Canada.

I would like to take this opportunity to thank all those at Environment who participated in our Trial and helped us to develop our product and expertise in systems

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integration. We at OCRA are grateful for Environment's support and patience during the course of the last three years. Remember that at the beginning of the OCS Program, we were a very young company, long on ideas and enthusiasm but short at times on some of the resources needed to fulfill all our obligations in a timely manner. Environment never lost faith in us and because of that we have matured as a company to a point where we are ready to meet the market with the full confidence of a successful field trial behind us. Of course none of this would have been possible without the system users from whom we learned so much. But in particular we would like to thank those responsible for the project, Evan Armstrong, Assistant Deputy Minister, Mike Magar, Director responsible for the Trial and John Smith Windsor the Environment Project Manager.

At this point I would like to give you some insight as to how the system evolved.

Originally, we had never intended to be in the software development field, our role was to act as systems integrators weaving together the products of various Canadian vendors into a complete system. For the hardware and communications elements of the system, this did not present a problem, however at that time there was no fully functional integrated office software system available.

So we decided to develop our own and we began from scratch.

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This was a chance to put the user-driven method of software development into practice. Anything from specifying the basic functionality of the system to defining interface specifics such as function key names was done with the user in mind and based on actual user feedback. The way in which our field trial was structured also helped in this process.

As John pointed out, our trial was divided into two major phases; a pilot contained within the National Capital Region and a Field Trial which expanded to sites across the nation. Because of this arrangement, we were able to observe the system in use and use feedback to further refine the product for the Field Trial.

We can divide the evolution of our product into three distinct phases;

Pilot System

Field Trial System

Marketable Product

In the pilot our aim was not to automate everything but to choose one primary function around which the rest of the system would revolve. After a thorough requirements analysis we decided that communications would be the key. Electronic mail could automate the exchange between diverse work groups without trying to automate the nature of the work within any one group. Besides, the majority of our users were senior managers who spend a good portion of each

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day communicating. Communications was important at the pilot stage because it provided a good introduction to the advantages of an electronic system with relatively little cost to the user in terms of training time. As well, communication benefits were readily apparent in terms of time savings and reductions in inefficiencies such as telephone tag. Other elements of the system included:

- Electronic Mail
- Word Processing
- Electronic Filing
- Personal Journal

As the pilot progressed we watched and learned so that we could apply the lessons in the field trial. Important decisions on issues such as the system interface evolved during our close work with the users. Our challenge was to develop an interface which allows experienced users to work quickly and efficiently but does not leave the novice bewildered. The decision was made to go with a function key rather than a menu driven approach with a context specific help system to guide the beginner.

The pilot was not only revealing in terms of the details of user perceptions to the system but also in general reactions to working on a system of this type. What we found is that users were maturing in their use of the system to the point where they said, What now?. The system was no longer a new world - a novelty in the office. They were ready to get at some of the real computing power of the

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machine, they wanted specific applications.

So, in the Field Trial we introduced a new version of the system, drawing one step closer to defining a marketable product. The Field Trial System surpassed that of the pilot in terms of sophistication but also opened up the possibilities for integration with user defined applications. System functionality included:

- Electronic Mail
- Electronic filing
- Word Processing
- Multiple Windows
- Applications such as
- Spreadsheet, database
- and sophisticated
- calendaring

The key features of the Field Trial system include a smooth user interface, seamless integration between the various system components and multi-tasking through multiple windows.

During the Field Trial we enjoyed watching users create unique applications for the system. The system had truly progressed beyond a communications tool to one that provided invaluable assistance in such diverse areas as:

- work and operational planning
- group projects
- engineering specifications
- even grizzly bear tracking!

As well, OCRA designed applications were added to the system in the areas of ministerial correspondence tracking and con-

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trol. Applications such as these, combined with the editing and electronic mail components of the system make for a powerful office resource.

The Field Trial involved enhancements not only to the end-user software but also to the communications network as the system increased in complexity to one encompassing sites in remote as well as metropolitan areas.

At the end of the Field Trial we are continuing development on the system with an eye towards refining it for world markets. Such refinements include integration with telephone management. We have fitted a telephone to the side of the terminal and functions such as automatic dialling are handled through the system.

At the conclusion of the OCS Program, we have reached a point where we are ready to go to the market not only with our software product, Colleague, but also with our expertise in systems integration, office software and consulting.

As the company enters this challenging new phase of its existence we are experiencing exciting changes in our structure and staff. Probably the most significant of these is the addition to our ranks of Gordon Gow as president. Gordon has always served as the Chairman of the Board of OCRA as well as being one of originators of the whole OCRA concept. Therefore he is a logical choice to take the helm as we begin our future. For myself, I'll be working closely

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with Gordon as Vice President of Sales.

At this point I turn you over to Gordon, who will outline where we as a company are going from here.

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Speech given by Gordon Gow, President of Gandalf Systems Group on March 27, 1985 at the OCS Seminar at the Conference Centre in Ottawa, Canada.

Whereas George has filled you in on what we've been up to for the last couple of years - it's my pleasure to let you in on where we are going from here.

Let me begin by re-emphasizing one of George's points. For a company that was never supposed to be in the software business - we've come a long way in a very short time. The Field Trial has left us with a state-of-the-art product - one which was conceived and developed entirely within the context of the OCS Program.

But software isn't the only area in which we have developed a marketable expertise. It is our intention to become leaders in office automation in systems integration, consulting and integrated software. We've already demonstrated our potential - it's now a question of exploiting this with a dynamic and aggressive marketing program.

We feel that there are great market opportunities in each of these areas. For example in systems integration we are currently witnessing many corporations reaching a point where they realize that too many players have been making office automation acquisitions. The proliferation of different types of personal computers and word processors in the organization is a perfect example of this. Someone at sometime must begin to reconcile this and start to think

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about a strategic plan. That's where we come in.

At OCRA we have the expertise to identify the problems in complex business situations and to specify and implement the solution. The key to any solution will revolve around communication and integration.

During our Field Trial we linked 300 hundred users across the nation in a network which may provide the basis for a department wide communication system. To us, a communication network involves not only interaction across one level of machine but also access to corporate and departmental computers as well as dedicated systems such as PC's and word processors.

Our approach is one that is tried and proven. We'll employ the very technique refined by us during the Environment/OCS Field Trial. This begins with a thorough requirements analysis - an examination of user needs and the technology and systems already in place in the organization. The results of the requirements analysis indicate what needs to be done and where. It's presented in the form of an office automation plan which reconciles existing systems with a total office automation strategy for the future.

In our approach, consulting and systems integration are linked. Consulting draws on our general office automation expertise and systems integration utilizes our technical know-how to get the job done. Designing systems such as

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these is a service which extends to full implementation and support. As John Smith-Windsor mentioned, the user organization must be careful not to underestimate the training time involved in introducing office automation systems. Most of these users are bound to be new to the electronic medium and therefore approach the intervention of such a system with a certain amount of apprehension. We are fortunate at OCRA to have gone through this experience first hand with the Field Trial users. In a new area, we developed innovative techniques in training the knowledge worker on electronic systems.

Our intervention strategy involved more than just training. It encompassed programs such as regular user group sessions where system users were able to express their enthusiasms and frustrations. We also produced a monthly newsletter which served to keep all participants informed and involved in project progress. A strategy such as this is not unique to Environment Canada - it's one that we can use wherever we install a system. We're finding that the lessons we learned in the Field Trial are valuable in the marketplace and enhance our office automation expertise.

Our other major area of business will be in marketing integrated office software. George has already given you some background on how our product evolved so I won't dwell on that. I will let you know one interesting fact about our product history. Our system is based on the UNIX operating

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system. When OCRA first decided to go with UNIX a number of years ago most considered this to be unwise. At that time, UNIX was little known and primarily associated with scientific shops. We had a hunch that it would take off and that's what we're seeing now. UNIX is fast becoming a standard operating system in the microcomputer market. It has recently received major endorsements from IBM and AT&T.

Jean Yates, a noted Unix expert predicts that UNIX will be used by the majority of office workers and small businesses by 1989. In terms of dollars, sales of UNIX-based hardware is expected to grow to \$12 billion by 1987. There is some indication that certain departments within the Federal government are coming around to standardize on UNIX for microcomputers.

However, there is a major problem with the UNIX market in that there is a definite lack of deliverable application software - particularly office automation software. That is where we can start to exploit some of this market potential. Our system is not only installed, tested and therefore deliverable it's also one of the most sophisticated integrated office systems available under UNIX.

We have sparked interest with a number of UNIX hardware manufacturers who are actively seeking quality office software products. We have, and are in the process of, adapting our system to a number of microcomputers. Some of these include the:

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ZILOG
AT&T 3B
ALTOS
IBM
ONYX
SPECTRIX

These companies are enthusiastic about our product and are leading us to software sales in the United States as well as in Canada. This flexibility gives us access to a larger market and is in keeping with our integrated approach - we are not tied to any one hardware configuration.

To fully exploit these three areas of market potential requires some changes at OCRA. Although we have an outstanding team in place we're adding to our ranks in all areas. There has also been a significant change in our corporate identity which reflects our new backing. Today we are officially announcing our new identity as Gandalf Systems Group, a division of Gandalf Technologies Inc. We feel that with Gandalf backing us we have the strength and credibility to attack the world wide market with confidence. We'll be providing details on this development at a press conference at 1pm today.

We are a dynamic young company with an exciting future and we encourage you to visit us in our booth.

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PRESENTATION
BY
DEPARTMENT OF ENVIRONMENT CANADA
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA CANADA
MARCH 27, 1985

TALK BY
JOHN SMITH-WINDSOR
OF ENVIRONMENT CANADA
AT THE
MARCH 27, 1985
OCS FORUM

When I was asked to give this presentation, I was very honored, until I found out that I had 15 minutes to compress three years of effort, so I will do my best.

First of all I would like to introduce you to our department. There are many people who are not familiar with the Department of Environment. We are a very diverse organization, we have services that deal with the environment in some very specific areas. We bring you the beautiful weather we have today, we have major programs in environmental protection, and of course the finance administration of the department. We have another service that deals in federal lands, wild life and in-land waters and the major part of our department in terms of the numbers of people are in Parks Canada, and this happens to be our Parks Centennial year. So you can see from that overview that we have a very large order to fill in terms of meeting the needs of our employees. Our department is very scientific. We have a very large operational budget running about \$760 million dollars. We have a slightly reduced population this year, we are down to 10,000 and we are dispersed right across the country.

Office technology in Environment Canada has been an active program for about four years now. Our original objective was to improve the communications (because we are spread across the country); to improve the access to information; to provide some value added benefits that the EDP Systems were not giving us; and hopefully to attain a productivity improvement. This is why we wanted to get into office automation and the access to information so that we could meet the needs of senior management.

The major projects that we have been conducting over these past four years, fall into four areas. We felt we should inflict this technology on ourselves to begin with so that we could indeed give people proper advise. Consequently, the Systems and Informatics Directorate which I am part of, put our system in very early. We expanded our system to an operational unit in the personnel directorate, to help our personnel people find out if these

systems could be used to increase their productivity. For that trial we used a fourth generation language package. Just recently, we have expanded our communications capability with a project called Execlink to link our executive offices across Canada.

The OCS Program has sponsored our fourth, but by far our largest trial. Our vendor, OCRA, started out as Office Communications Research Associates but the company has gone through many name changes since then. This is the trial I am here to talk about today. As you are aware, the major objective of DOC was to promote Canadian development. Our objectives were to assist DOC in that promotion but also to determine the potential for that technology and if it was suitable, to determine the appropriate means for the introduction of this technology in the department. Now we have learned many lessons, we have learned just about everything that we should've not do and how to introduce technology. I mentioned the diversity and the disperse nature of our department, we have offices all across Canada, from the very far north to the southern border. Communications is one of our major requirements. So one of the major product design specifications was the ability to communicate.

The OCRA concept started with a micro computer serving a group of people. The group varies in size but generally looks after the small office organization. The micro computer supports various workstations, styles, printers, and various kinds of capabilities on those workstations. Our objective was really to get a department-wide delivery system. So the next level in our plan was to look at how we could link these systems into our organizational computers. This may be a branch level, a director's level, a regional level. The third level in our plan was the corporate systems that already exists, i.e., the very large IBM mainframe corporate databases. So this was our goal when we began. The OCRA system addresses the lower layer.

We divided our field trial into two phases, a pilot phase to get the "kinks" out, to get the people familiar with the technology and to try and determine where to go from there. The field trial as was indicated was a semi-operational expansion of the smaller field trial. The pilot was carried out at two sites, with two approaches. We installed 38 workstations in the Environmental Protection Service and we took a senior management approach. We started at the ADM level down to the directors general, directors and the immediate support staff. So we took a horizontal slice of the organization. The Departmental Management Services directorate on the other hand is a very operational organization, supplying just that, management services. We installed 33

workstations in that organization and we took a look at a vertical slice, from a director-general down to the very operational level. The pilot systems itself was installed in our two major buildings in Hull, La Terrasses de la Chaudière and Place Vincent Massey, one being in North Hull and the other being down by the river. OCRA themselves had a system in at a small distribution centre about two miles down the road. So even within the local installation, we had a real communication's need. Any workstation connected to anyone of those boxes which represents a Spectrix micro-computer could send messages to any other workstation on that network. The field trial, as I mention was to expand this to a semi-operational organization. We had lots of volunteers. We chose people whom we felt could best represent the diversity of the department. We went into Jasper National Park, (and I don't know how many people realize it, but Jasper National Park is larger than some European countries) and into Calgary Parks Headquarters. In Toronto we expanded the Environmental Protection Headquarters pilot to a regional office. We also added our Atmospheric Environment Service in both Ottawa and Toronto. Just to give you some idea of the number of workstations, there are a total of 155 workstations spread out across the country in various sectors of our department. The OCRA product, and we worked very carefully with OCRA on this, because we found that there were many ergonomic values that had to be addressed. We could've had a workstation that took up too much room on the desk and it had to have some very easy-to-use features. Another slide presentation I think that most of you will recognize, is of a Digital Equipment Corporation product, the product itself is key driven and we learned a great deal about the differences between manual driven and key driven systems. To give you some idea about what our users have learned to do with systems: Jasper National Park has been one of our most successful trial sites and I believe that it was mainly because they had very little to begin with. Their expectations were not too high to accept a new and developing product and to put it to some very good use. People who are working in the North end of Jasper National Park need to know what is going on in the South end of Jasper National Park. Things like the daily bear incident report are very very useful to the people in that kind of a situation.

To address some of the lessons we have learned, we believe that you should first start with a small pilot. We now believe that we went much too large, 155 workstations in that number of sites is almost unmanageable. Select a vendor that will work with you and believe me this is not an easy task. Vendors have a profit motive and we have a different kind of motive. You have to get together with the vendor and work out some compromises. It can be done! One thing we learned just recently is that pilots don't go away. You put them in and if

if they serve any purpose at all, people are very good at justifying the system. It is very difficult to convince people and to continue to have people believe, that although it is a pilot and it is not working as well as it should be, it should be performing as an operational system.

Choosing a site. I think that it is important to find management who is committed to improving the way things work, to improving productivity not just by using technology, but by other means as well. Technology is one of the tools. You have to define the site where expectations are high but not too high, because people can be let down. You need management encouraging people to work and to involve themselves to give us feedback on how to change systems to make them work for people. You have to know what those information needs are because they are different in every organization and I think that vendors have to work towards more versatile systems that will meet different lifestyles and different work styles.

Training. We feel that it is the "achilles heel" of any system. We severely underestimated the requirements. We now know what that requirement will likely be and we don't know how to pay for it. It is going to be a big problem introducing office systems. You need lots of support to get people started, technology is new, people feel uncomfortable with it and if you can get them over the hump, they will be successful with it. Eventually, that requirement will diminish over time and people will start to become very innovative with the new systems. One thing I should mention - there has been a very innovative approach in Calgary. When new employees joined that organization, they are introduced to a new employee orientation program. One of the things that they have just recently done is added a module on office technology, so that their people are now aware of what this technology is and what it can do. We have also introduced an information technology centre in La Terrasses de la Chaudière to help people overcome some of the fears of getting started in office automation.

Some of the critical factors for success. A mandate for recommending organizational change. You cannot just come in with technology and say here is your new technology, improve your situation. There are many things that have to change. A basic understanding by management and by staff of the capabilities of the new system and that includes things that computers will not do for you. People are believing that all you have to do is buy them, put them in, press the button and they will do anything. People must have time to learn. Many managers feel that their employees are wasting time, working on their workstations and learning how to use the system. You have got to have experts and people on site, who can come and help one get over the problem areas. We have found out that you have to focus on the

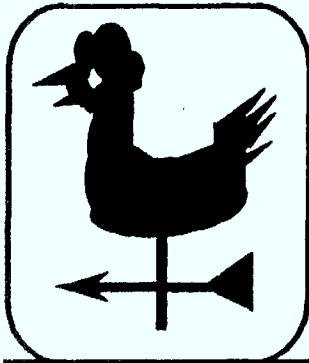
communications, the improved access to information, the better decisions, not necessarily the productivity in the early stages of using the technology - that will come later. On the benefit side, I have already mentioned the communications. We think the productivity improvement will be demonstrated as users mature and start to find new and better uses to adapt the technology to their work style.

To sum up, we feel that electronic data processing is the key, it is the heart of any office system, and the generic office automation as we have known it and as we think of it, is only the icing on the cake. It has to have a very good data processing backbone to succeed. We must assist the user in doing things the way the user has been accustomed, not forcing the user to change the way they work. They must be very easy to use. If you look at the automobile industry today. When automobiles first came out, you could buy one brand, one colour and it did one thing. If you look at automobiles today, you can buy an automobile to fit your lifestyle, and I think that workstations and office systems have to move in that direction.

Finally, before I leave, I would like to thank the OCS Program for giving us this opportunity. It has been a real learning experience and I think our department will benefit significantly from the Program. I would like to thank OCRA who have been very tolerant when we brought our criticisms to them. We worked together closely and I think that we have come up with some very good solutions. I would like to thank, and I think that these are the important people, the users and the participants, the people who have tried out this technology and had the frustration of systems going down and software not working. I would like to thank our senior management who put an early interest in this project, have gone along with us and are now working with us to develop an office technology development strategy. Thank you very much.



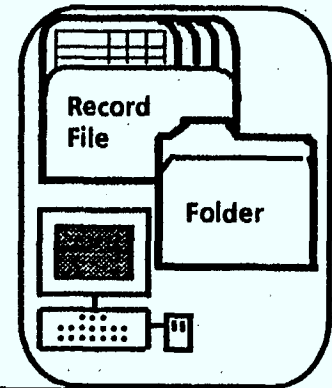
**Environment Environnement
Canada Canada**



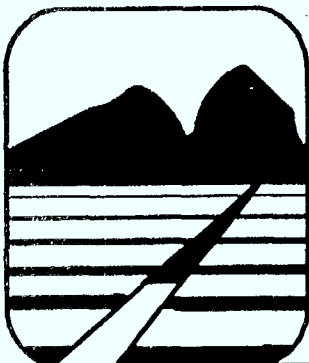
**ATMOSPHERIC
ENVIRONMENT**



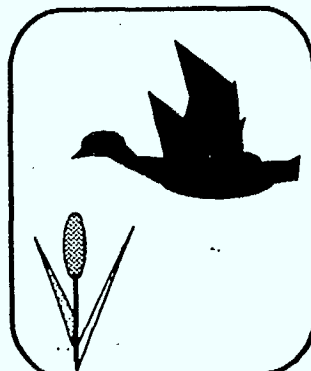
**ENVIRONMENTAL
PROTECTION**



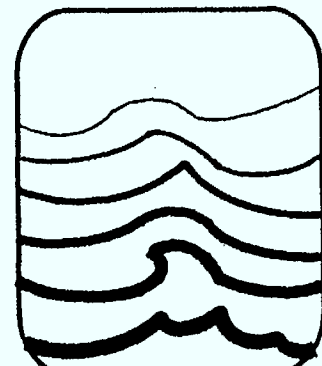
**FINANCE &
ADMINISTRATION**



LANDS



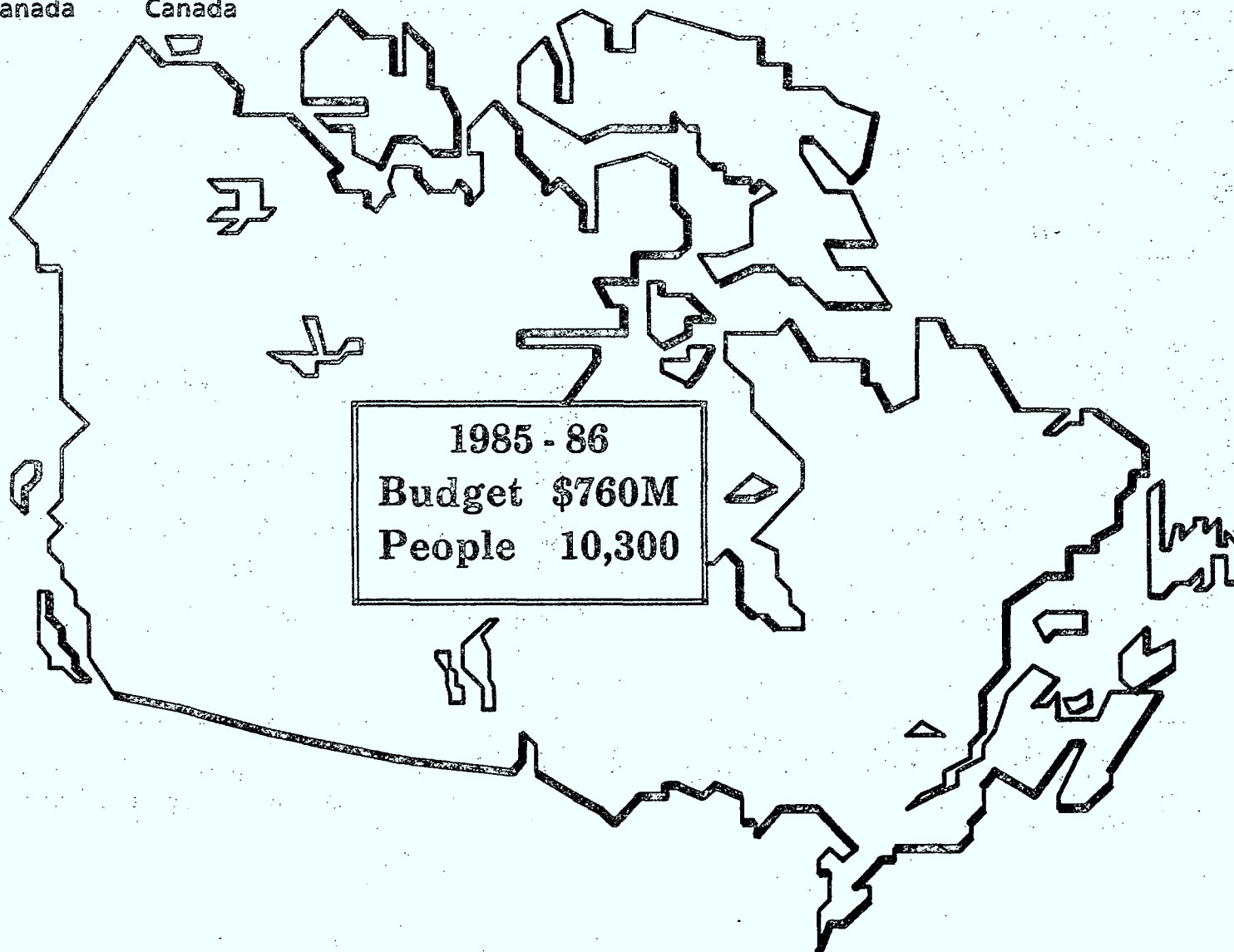
WILDLIFE



**INLAND
WATERS**



Environment Canada
Environnement Canada





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Environnement Canada

D. O. E. PILOT PROJECTS

*Systems & Informatics
Directorate*

EXECLINK

Personnel Directorate

O C R A



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D. O. E PILOTS

Systems & Informatics Directorate

- ***First Experimental System.***
- ***Data General - Comprehensive Electronic Office (CEO).***
- ***Now - 160 Users, Operational and Growing.***
- ***Extended to Minister's Office.***



Personnel

- *4th-Generation Language Application.*
- *Parks NCR Staff.*
- *Now - Preparing Operational System.*



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D. O. E. PILOTS

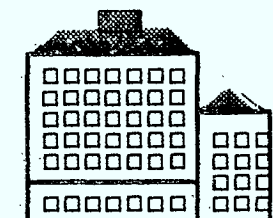
EXECLINK

- *Communications and Office Support for Executives.*
- *Mitel - Kontact Workstations.*
- *Limited Access to Departmental Information Base.*
- *Short - Term Solution Only.*

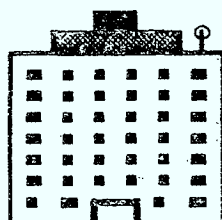


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EXECLINK PARTICIPANTS



TERRASSE de
la CHAUDIER



PLACE
VINCENT MASSEY



FONTAINE BLDG

Minister
Deputy Minister
E.R.M.U.
F.P.A.
A.E.S.
Planning
Parks
D.G./ Personnel
D.G./ Information

E.C.S.
E.P.S.
C.F.S.

FEARO

REGIONAL DIRECTORS GENERAL

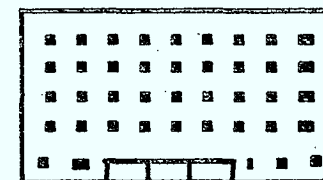
Atlantic

Quebec

Ontario

Western &
Northern

Pacific &
Yukon



A.E.S. HQ
DOWNSVIEW





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D. O. E. PILOTS

OCRA

- D O C Sponsored Field Trial.
- Canadian Product Development.



O.C.S. PROGRAM / O C R A

D O E's Project Objectives

- Assist DOC in Promoting New Canadian Office-Technology Products and Companies.
- Determine the Potential for Technology to Improve Both Personal and Organizational Productivity.
- Learn Appropriate Means and Methods to Introduce and Promote Effective Utilization of Technology.



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OCS / DOE PROJECT

Two - Phased Approach:

**Pilot - *Test Product and Reactions of Participants
(small group).***

Field Trial - *Semi - Operational Wider Cross Section.*



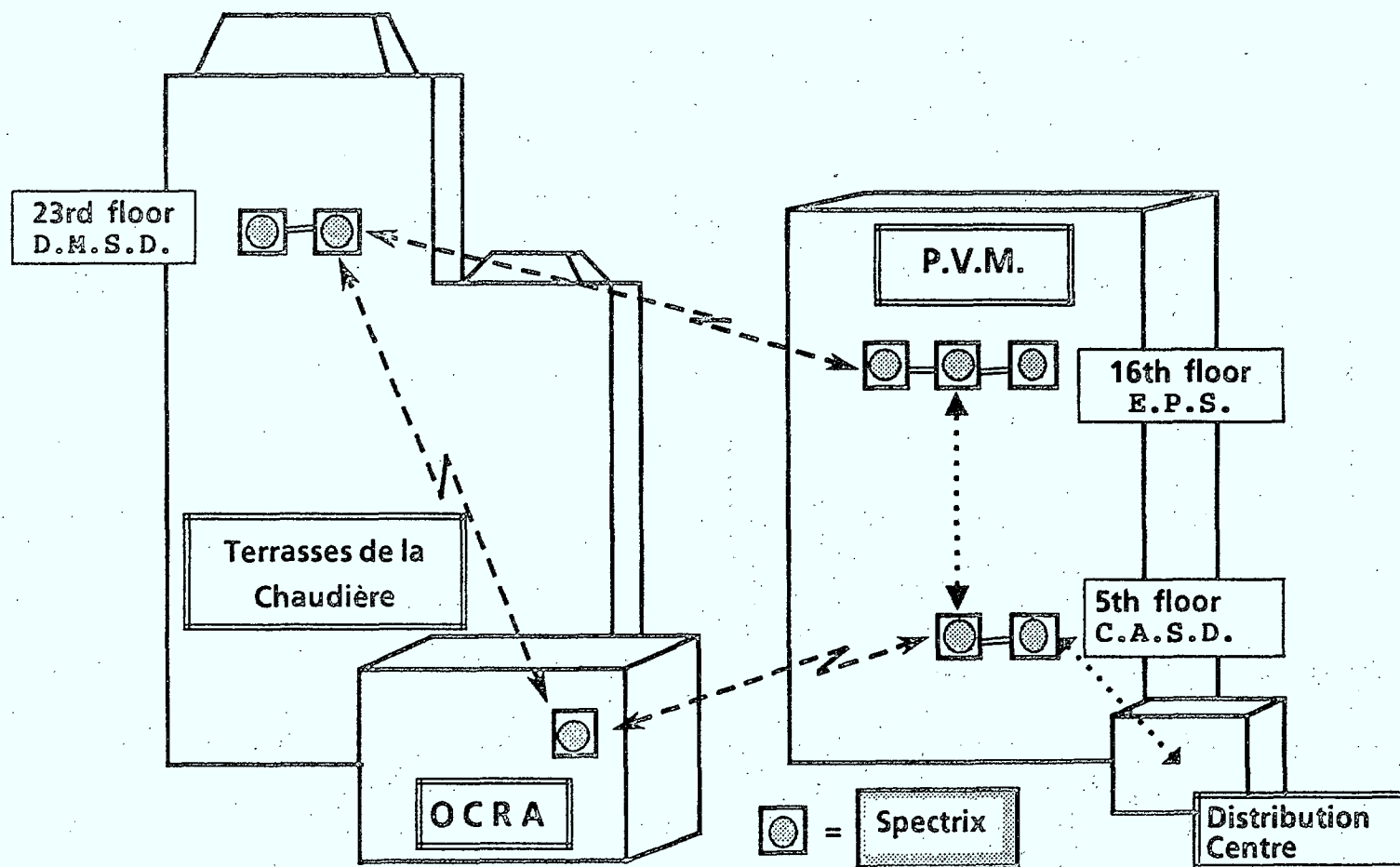
The Pilot

- 2 Sites**
- Environmental Protection Service:
 - *38 Workstations.*
 - *Senior Management Emphasis.*
 - Departmental Management Services Directorate:
 - *33 Workstations.*
 - *Vertical & Administrative Emphasis.*

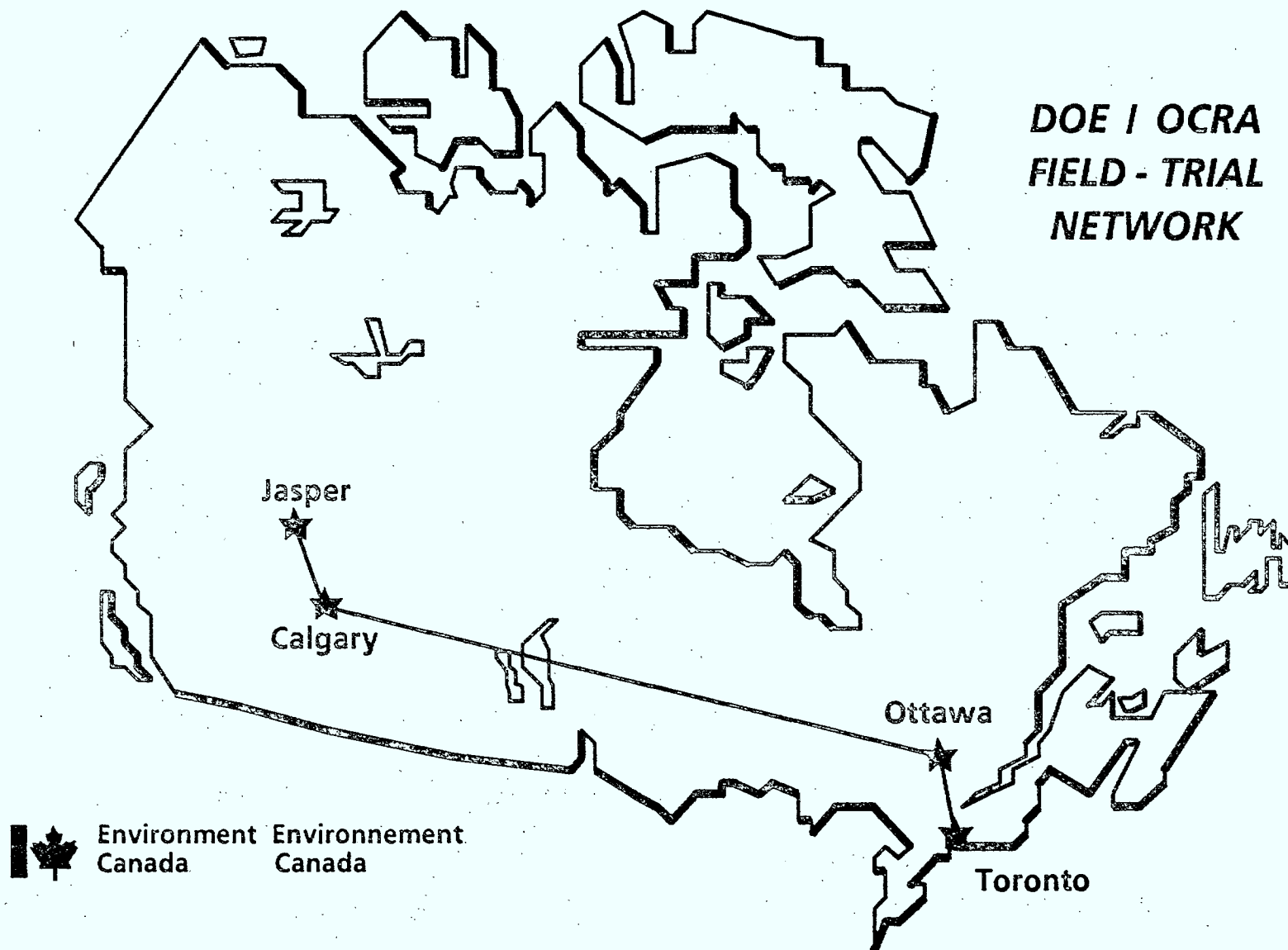


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O.C.R.A. / D.O.E. PILOT SYSTEM NETWORK



**DOE / OCRA
FIELD - TRIAL
NETWORK**





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THE FIELD TRIAL

Numbers of Workstations by Site

Parks Canada:

Headquarters	6
Calgary (Western Region)	24
Jasper National Park	9

Atmospheric Environment:

Headquarters (Ottawa)	11
Downsview	13

* = Pilot Sites

Environmental Protection:

Headquarters (Ottawa)	*41
Ontario Regional Office (Toronto)	13

Finance, Personnel & Administration:

Departmental Management Services	*32
Systems and Informatics Directorate	6

Total 155



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Canada

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Canada

JASPER NATIONAL PARK

APPLICATIONS DEVELOPED ON O. C. R. A.

- *Telephone Lists;*
- *Employee Holidays
Schedules;*
- *Building Inspection
Appointments;*
- *Land Lease Notices;*
- *Land Billings;*
- *Contractor Listings;*
- *Equipment Inventory;*
- *Equipment Location
Reports;*
- *Park Events Listings;*
- *Meal Schedules;*
- *Park Accomodation
Questionnaires;*
- *Private Home
Accomodation Lists;*
- *Tourist Alert Bulletins;*
- *Building Rental
Notices;*
- *Interpretive Services
Index;*
- *Daily Bear Incident
Reports;*
- *Park Patrol Incident
Reports & MORE.....*



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LESSONS LEARNED

GETTING STARTED:

- Start With a Pilot!
- Keep it Small!
- Select a vendor that will try to accomodate user needs.
- User - Driven approach is not easy!



LESSONS LEARNED

CHOOSING A SITE:

- Find management committed to improving performance *NOT* just using technology.
- expectations are high but not too high.
- management will encourage involvement at all levels.
- information needs are known and can be well defined.



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LESSONS LEARNED

GENERAL:

- **PILOTS Don't Go Away!**
- **Don't Use Developing Technology if You Want to Show Immediate Results.**
- **Systems Must be "State-of-the-Art" When Introduced!**
- **Even in PILOTS, Users Lose Interest When Systems Don't Work.**



LESSONS LEARNED

TRAINING:

- Training will be the Achille's Heel of O.A.!
- Provide Lots of Support to get People Started.
- Requirement for Support diminishes as users become accustomed !
- Training requirement will be ongoing as new employees arrive, as systems and applications change over time..



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LESSONS LEARNED

CRITICAL FACTORS FOR SUCCESS:

- A Mandate for Recommending Organizational Change.
- A Basic Understanding of the Capabilities of Computer Systems.
- People Must Have Time Set Aside to Learn.
- Sites Must Have People Who Can Lead and Help Others.



LESSONS LEARNED

CRITICAL FACTORS FOR SUCCESS:

- **Focus Early on Improved Communications and Information Access - Not "Productivity"!**



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LESSONS LEARNED

BENEFITS:

- Early benefits will be from improved communication and access to information resulting in better more timely decisions and improved service to the public.
- Productivity improvements cannot be demonstrated until systems and users are mature and serve a greater portion of a department's information - management needs.



LESSONS LEARNED

*Office Automation is not simply electronic word processing,
filing, personal time management, mail & messaging.*

These features are merely icing on the cake.

Information Processing is the KEY!



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LESSONS LEARNED

Office Systems must provide convenient access to data and information needed to accomplish daily tasks.

They must assist the user in analysing personal data, and in accessing, updating and sharing organizational information; and, they must be as easy to use as pen and paper!

PRESENTATION
BY
OFFICESMITHS INC.
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA CANADA
MARCH 27, 1985

Vendor Strategies and Lessons Learned
in the
Office Communications Systems Field Trials

March 27, 1985

Government Conference Centre

2 Rideau Street

Ottawa, CANADA

The Market For The Officesmith

Glenn A. McInnes

History of Officesmiths Inc.

Officesmiths was founded in 1981 to be a software product company. The product to be developed would fill a gap in a major market which would emerge in the second half of the 1980's.

Our mission was, and is, to build a high quality software product for this major market that would be seen to be first on an international basis.

In our first year of operation eight people, including five cofounders, developed the product architecture and laid the missions for the company. Part of that original mission was to have a major field trial of the product to prepare ourselves for international distribution.

On July 1982 we were fortunate to become, at that time, one of four participants in the OCS program.

Our criteria for the field trial were that:

--we would apply our product to a business process important to top management that would improve the organization's ability to deliver its goods and services. We chose the automation of policies and procedures to be that application.

--we would work with a group that had day-to-day operational responsibility for that application.

--we would work with office workers who were not technical people

The EMR staff we have worked with in our field trial have been absolutely critical to our success. The project Manager, Vivian Pettis, and Camille Marion and her staff; the project Director, Dan Normandeau; and the ADM of Finance and Administration, Stu Mensforth have maintained a perfect balance between a demand for operational results combined with the flexibility that is needed in a field trial.

The field trial has also provided us with feedback on how our product should function and given us the opportunity to build a product that meets worldwide market standards for reliability and performance.

All of our staff have a real sense that our accomplishments have resulted from the working relationship and sense of respect for each others aims that we have shared with EMR.

At the same time, we could not have been successful without the OCS program itself. Being able to field test our product for a year has made the difference between having the potential for an Ottawa product and a worldwide product.

The OCS field trials have primarily been a technology experience for the vendors and a management experience for the host departments. For the past year and a half Officesmiths has also made a significant effort to identify and test the market demand for its product.

The major challenge corporations and government agencies face is the need to reduce their paperburden in the second half of the 1980's to achieve new productivity gains.

These new gains will not be achieved with existing software available from corporate computing centres or with existing personal office productivity software.

The major new market demand will be for cost effective, multi-user departmental information systems which can be tailored to specific needs.

It is important to distinguish between personal and institutional applications. In a personal application, the beneficiary of the system is the actual user of the system, as an individual. A manager who uses a spreadsheet program to compute his budget more rapidly and thereby gets to have dinner with his family is deriving personal benefit from this application. A marketing coordinator who uses a lead tracking system derives little or no personal benefit from that system; the real beneficiary is the company which spends less to secure orders, or ships more goods.

A company is not simply a collection of individuals. People work together in groups, variously known as offices, departments, divisions, or branches. The work done by individuals in a group is structured and has a purpose which is related to the objectives of the department. This purpose is met by processing departmental documents and procedures. Individuals in these groups or departments who share data and follow common procedures require information systems of their own to carry out their department's business.

Consequently, a departmental information system should include a document-based management system and a common environment for rapid, user-driven application development.

Three categories of departmental applications can exist in decentralized responsibility centres: transaction processing, engineering processing and document-based processing applications. Document-based applications consist of interrelated forms, procedures and documents.

Two types of documents are processed in large organizations: structured institutional documents with standard formats and processing procedures and unstructured adhoc personal documents. Structured applications deliver institutional results, and unstructured applications deliver individual results.

The requirement for fourth generation tools to automate departmental information systems is being driven by two forces: the basic innovations taking place in fourth generation software; and the dwindling ability of programmers to keep pace with user demand for new updated solutions.

In the next five year, the demand for multi-user departmental information systems will be dramatic. But, an even greater demand will be for application development tools in the form of complete environments that will fill the shortfall in the availability of programmers.

The Officesmith is a complete document management system, developed under the UNIX* operating system, which integrates modern database technology, an intelligent editor, and fourth generation application development tools.

It provides complete document information and application creation facilities that can be used by a wide range of end user business professionals without computer training, to satisfy their own application needs.

In 1984, Officesmiths completed over 40 person-years of product development and field testing to produce Release 1 of The Officesmith. The Officesmith has been extensively field tested and meets market functional, performance and reliability standards.

Officesmiths has participated in eleven U.S. and European trade shows over the past 20 months.

This has resulted in the qualification of over 40 distributors, with 15 having executed agreements.

The product is being installed in every Olivetti sales office in Italy over the next couple of months. It was installed in the Chemical Bank in New York City last month and will be installed in the Philip Morris Research Centre in Richmond Virginia this month. It is also installed in major systems integrator companies in Washington such as C3, Inc.; Integrated Microcomputer Systems Inc.; and M/A COM Information Systems Inc. As well, it is being distributed in Canada by companies like Genamation and JTS Computer Systems in Toronto and Eclin Corporation in Montreal.

It has been ported to AT&T's 3B Series, Convergent Technologies MegaFrame, DEC VAX's, as well machines from Cadmus, ISI, Plexus, Pyramid, Sun and Zilog.

We would be delighted to have you evaluate our product to meet your departmental information system requirements.

Please come by for a demonstration.

VENDOR STRATEGIES AND LESSONS LEARNED
IN THE
OFFICE COMMUNICATIONS SYSTEMS FIELD TRIALS
MARCH 27, 1985

PRODUCT DEFINITION

PAUL J. HEBERT

A G E N D A

- The Officesmith - Architecture
- OfficePolicy
- OfficeRecords
- Unique Approach to Pilot Projects
- What Can We Do For You

THE OFFICESMITH - ARCHITECTURE

The Officesmith is a complete document management system, developed under the UNIX* operating system, which integrates modern database technology, an intelligent editor, and fourth generation application development tools.

THE DIALOGUE:

- Function key oriented
- Uses menus extensively
- Accommodates multi-window environment
 - up to 12 windows on the screen
 - interrupt one application and resume another
 - scroll through windows of any size
- Help Messages
 - can be used to explain ACTIONS
 - can be used to define document structure
 - can provide standard terminology
- Glossary
 - can store commonly used phrases and commands under an abbreviation
- Multilingual
 - menus, messages, prompts

THE INTELLIGENT EDITOR

- Automatic Formatting
 - reduces learning time for new users
 - simplifies the dialogue with the system
- Prompting
 - is keyed to specific headings of each document
- Security - is provided at three levels
 - to add information
 - to delete information
 - to view information
 - different views can be specified for different individuals
- Word Processing - features includes
 - function keys
 - electronic cut and paste
 - global search and replace
 - glossary feature

.../3

INFORMATION RETRIEVAL

- Contextual Retrieval - supports
 - Query by example model
 - Multi level queries
 - Boolean searches
- Indexing - is provided in 3 modes
 - full text inversion
 - keyword lists
 - value indexing
- Phonetic Searches - allows for minor misspelling

FOURTH GENERATION TOOLS

- improve the application development productivity by up to 400%

.../4

OFFICEPOLICY APPLICATION

DEFINITION - A methodology which includes the Officesmith aimed at automating the resource intensive activities associated with creating communicating and finding policies and procedures in large organization.

PRODUCT COMPONENTS

- Implementation Methodology - with guidelines for
 - project managers
 - manuals staff
 - authors
 - end users
- Software Product - has been tuned to the directives application and includes
 - automatic indexing/cross referencing
 - powerful search and retrieval tools
 - automatic enforcement of standards
 - can be operated by non-experts
- Training Courses - have been adopted to three audiences
 - manuals staff
 - end users
 - authors
- Business System Consulting - can be provided to
 - answer your questions
 - implement OfficePolicy in your organization
 - train your staff

OFFICE POLICY BENEFITS

Powerfull Query Capability - can support authors maintainers
and end users in

- analysing impacts
- identifying conflicts and redundancies

Automatic Indexing

- indexes are maintained dynamically as the text is modified
- people who don't have access to a terminal have an up to date paper index
- cross references can be easily maintained

Electronic Cutting and Pasting - accelerates the product process

Bilingualism - is supported by the system in the following ways

- all prompts, help messages and menues are available in either official language
- side by side English and French text are easily managed

Security - allows authors and maintainers to change policies
and procedures - end users can only view them

OFFICER RECORDS APPLICATION

DEFINITION - OfficeRecords combines a methodology and software aimed at

- improving information response time
- automating the tracking and reporting of access requests
- streamlining records management procedures

PRODUCT COMPONENTS

- Implementation Methodology - with guidelines for
 - project managers
 - records office staff
 - users
- Software Product - has been adapted to the records management application generic to the Government of Canada
 - incorporates the reporting requirements specified by Treasury Board and Archive
- Training Courses - have been developed for Records Office Staff
- Consulting Services - are available to assist in implementing this product

.../7

OFFICER RECORDS BENEFITS

Classification/Indexing - tools has been developed to

- reduce transcriptions by a factor of 5 to 1
- update indexes and cross references automatically

Filing and Retrieval - facilities are provided to

- reduce processing time by 50%
- produce automatic
 - recall notice
 - charge out lists
 - bring forward lists

Security Features - include

- automatic checking for security authorization at charge out time
- data base of employee records holdings

Correspondence Management - is supported by the product including correspondence tracking

Reports - automatically produced by the system include

- INDEXES by subject
 by file
 by major subject area
- STATISTICS
- SUMMARY LISTS
- RECALL NOTICES
- DISPOSAL AND REVIEW NOTICES

Access To Information and Privacy - is supported by tools which

- track documents through this life cycle
- produce flags to indicate processing delays
- produce required Treasury Board ATIP reports

.../9

UNIQUE APPROACH TO PILOT PROJECTS

- INVOLVE THE USERS FROM THE BEGINNING
 - Produces user inspired design
 - Secures a commitment to making the project a success
 - Facilitates the training process
- FOCUS ON HIGH PAYOFF APPLICATIONS
 - Provide an early success momentum
 - provide a basis for measuring productivity gains
- RAPIDLY PROTOTYPE THE REQUIREMENTS
 - Allow users to see, feel and touch the application
 - Resolve any communication conflicts
 - begin planning for organizational and procedural ramifications
- TRANSFER THE APPLICATION DEVELOPMENT METHODOLOGY
 - Taylor the training to the specific audience
 - Help to identify follow-on applications
 - use training feedback as a basis for planning enhancements

.../10

WHAT CAN WE DO FOR YOU

- Deliver a pilot in 6 months
 - the tools are ready as well as the methodologies
- Provide a solution approach which can be taylorred to your organization
- Transfer application development skills to your organization to allow them to solve a new generation of problems

PRESENTATION
BY
DEPARTMENT OF ENERGY, MINES AND RESOURCES
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA CANADA
MARCH 27, 1985

OCS FIELD TRIAL
AUTOMATION OF POLICIES
AND
PROCEDURES
EXPERIENCE AT EMR

A MANAGEMENT PERSPECTIVE

TARGET GROUP

- ADMINISTRATIVE POLICIES AND
PROCEDURES MANUAL GROUP

OBJECTIVES

- ° IMPROVE PROCESS AND ACCESS
- ° TRY OUT OFFICESMITHS SOFTWARE

APPROACH

- ° IDENTIFY PROBLEMS AND SOLUTIONS TO IMPROVE PROCESS
- ° INVOLVE TARGET GROUP "HANDS ON"
- ° EVALUATE RESULTS
- ° BUILD ON SUCCESS

ACTION PLAN

- I ° ANALYSE NEEDS
 - ° DEFINE IDEAL SYSTEM
 - ° EVALUATE OVERALL SITUATION
 - ° IDENTIFY GAP
- II ° DEFINE REQUIRED FORMAT
 - ° PRODUCE SOFTWARE PROTOTYPE
 - ° USE SOFTWARE
- III ° TOTAL IMPLEMENTATION

SITUATION APPRAISAL

- 30% TURNOVER
- NO DOCUMENTATION STANDARD
- NO USER FEEDBACK
- CAN'T FIND POLICIES & PROCEDURES
- NO IMPACT ANALYSIS ON EXISTING POLICIES
- HIGH "FOG" FACTOR IN TEXTS
- NO UPDATING MECHANISM

CONCLUSION

- DEFINE BUSINESS YOUR'RE IN
- STREAMLINE PROCESSES
- FIND SOFTWARE SOLUTION(S)
- DEVELOP SOFTWARE STRATEGY
- START SMALL AND BUILD ON SUCCESS

LESSONS LEARNED

° INTRODUCING CHANGE

- EMPLOYEE MORALE
- TRAINING TIMING
- METHODS OF WORK
- THE SPOTLIGHT SYNDROME

° BEWARE OF BETA TEST

- ESTABLISH CLIMATE TO SUPPORT RISK
- WATCH FOR FALSE HOPES
- RESEARCH IS RESEARCH
- GIVE TARGET GROUP LOTS OF SUPPORT

LESSONS LEARNED

- ° SENIOR MANAGEMENT

- OBTAIN SUPPORT FOR RISK
- MAINTAIN SUPPORT THROUGH INFORMATION
- COMMUNICATE RESULTS

- ° ENSURE CONSULTANTS KNOW YOUR BUSINESS

- LOOK FOR CONSULTANTS
WITH STATE-OF-THE-ART EXPERIENCE
- LOOK FOR CONSULTANTS
WHO KNOW HOW TO LISTEN

- ° BEWARE OF THE HYPE

- PRESSURE FROM MANAGEMENT
- PRESSURE FROM EMPLOYEES
- PRESSURE FROM EVENTUAL USERS
- PRESSURE FROM TECHNICAL EXPERTS
- PRESSURE FROM OUTSIDERS
- PRESSURE FROM EVALUATORS

RESULTS

PROACTIVE MANAGEMENT

- MANDATE
- PLAN

IMPROVED PROCESS

- COMMUNICATION/COOPERATION
- PRODUCTIVITY INCREASE

CLARIFIED ACCOUNTABILITIES

- ROLES

QUALITY PRODUCT

- CUSTOMIZED SOFTWARE

JOINT PRESENTATION
BY
DEPARTMENT OF COMMUNICATIONS
AND
COMTERM INC.
AT THE
OFFICE COMMUNICATIONS SYSTEMS
FORUM
HELD AT THE GOVERNMENT CONFERENCE CENTRE
OTTAWA, CANADA
MARCH 27, 1985

March 27, 1985

DOC/COMTERM
OCS FIELD TRIAL

INTRODUCTION

MARY: Good afternoon, my name is Mary Meloshe. I am a Director in the Policy Sector of the Department of Communications. Over the past 2 1/2 years I have been responsible for directing the design and implementation of a field trial of an office communications system in the Department. I would like to take this opportunity to introduce my co-presentors on this panel: Mr. Jens Laursen, who is the Vice-President of Business Program Management for Comterm, and Mr. Doug Hardie who is the Account Executive for the Comterm field trial at DOC.

We would like to spend the next 45 minutes highlighting the decisions and the events that shaped the trial in the Department of Communications. We'd like to give you an overview of the system that has been developed for and installed in DOC. We'd like to share with you some of our experiences from this field trial. We would also like to talk about future directions, particularly the directions that have been suggested to Comterm as a result of this experience.

DOC GOALS

I'd like to begin by taking you back to a time in late 1982 when senior management in the Department of Communications were considering their own policy goals for the DOC trial.

Now I always begin this presentation with a disclaimer. I am assured by our creative staff that any resemblance between this character in the slide and me is pure coincidence.

It will come as no surprise that the goals that DOC set for itself, parallel very closely the goals of the other 4 field trials. We wanted to create an opportunity for Canadian equipment suppliers to develop new products and to test those products out in the Department of Communications. We also wanted to have the opportunity to

assess the implications of introducing that technology in the department both from an organizational as well as an individual perspective.

Our senior management, however, had even more ambitious goals for the DOC trial. They wanted to ensure some added value to the specific program objectives. To this end, they articulated a set of guidelines, which would govern the development of the DOC trial:

- They wanted a trial that was user-designed and driven.
- They wanted to introduce OCS technology in the Policy Sector in the Department of Communications to assess the potential of using an integrated office communications system to support the way we manage our policy function and policy operations on a day-to-day basis.
- They wanted a system that was bilingual.
- They wanted a system that would integrate existing DOC technology, in other words, interconnect with our mainframe computer, our invested base of AES technology, and our Develcon data switch.
- They also wanted a system which would integrate Telidon technology.
- They added as sort of a parting shot that this field trial should be done cheaply ... and that the clock was ticking.

We were already well into November of 1982 when preliminary decisions were made on approaches and orientations for the DOC trial.

THE FIELD TRIAL SITE

Before I tell you how we achieved all of this, I'll outline the characteristics of the site in the Department of Communications. The principal site is the Broadcasting and Content Services Policy Branch, which is a group of about 32 people. They are a mix of managers, officers and support personnel; francophones and anglophones; men and women ... a relatively young group. They are the group responsible for providing the Minister of Communications, the Honourable Marcel Masse, on a daily basis, with policy advice on issues relating to broadcasting and content services policy, CBC and CRTC related matters. They generate information quickly, often on short notice. The information moves through the system quickly. Requests for information usually have very tight turn-around times.

Now, this particular group, the Broadcasting and Content Policy Branch is linked via the system vertically through the organization to the Office of the Senior Assistant Deputy Minister, and up from there to the Office of the Deputy Minister. Recently we made the leap into the Minister's office.

We also decided at the outset that we would extend the system horizontally across the department; across the Policy Sector to the offices of the Directors General who often, in the case of our Directors General of International Relations, and Federal - Provincial Relations, comment on and sign off on documents that flow up to the Minister from the Broadcasting and Content Services Policy Branch. As well, we decided to extend the system horizontally across the corporate management group of the department, through the offices of several Assistant Deputy Ministers at the corporate level.

The thinking behind choosing Broadcasting and Content Policy as the principal site was that this group would drive any new integrated system that was put in place. They are a primary feeder group for a lot of the policy information that flows upwards through the department. And just in case they didn't get onto the system quickly enough, we threw in our writers and managers from the Information Services Branch just to enrich the environment.

This then was the site that was designated at the outset.

USER-DRIVEN DESIGN

Now let me come back to the objective of user-driven design. We are often complimented on being very progressive in deciding to put users in charge of design and implementation. The other way to interpret this, orientation, however, is simply this ... we were being very practical. We had no money left in the budget to hire consultants, so we were going to do it ourselves. What we undertook to do, or what I undertook to do, with a lot of support from the senior management committee, was to pull together users from across the department. There were thirty in all; they were a mix of engineers, personnel advisors, users, managers at all levels, support staff, Telidon experts, and elected union representatives. Together we worked out, in a couple of months, the functional requirements for the system; the preliminary technical specifications even down to the level of ergonomic design features for the terminals that we were going to put in place in the department: tilt-swivel, screen display, footprint size,...

We also developed an evaluation plan ... and set out priorities in respect of the impact assessment. Then we set out in search of a supplier. I'll come back to that in just a minute because I want to expand just a little bit on the evaluation plan.

RESEARCH OPPORTUNITIES

I heard one of the previous speakers talk about having evaluation done to you, well we did it to ourselves in the Department of Communications. We saw this field trial as offering us a really significant vehicle for undertaking research in a number of areas.

Public Archives Involvement

On the one hand, we wanted to look at the implications for information management in the department. As many of you are aware, in the federal public sector, we live with very well-developed policy guidelines governing records management, archiving, and now access-to-information legislation and privacy legislation. All of these, policies have implications for the way we handle our information, and the way we store and retrieve it in the Department of Communications. It was those policies that we thought would likely be impacted by the introduction of electronic systems.

As well, we live with, as most large organizations do, protocols and procedures, some of which are unwritten, which govern the way we present information and sign off correspondence. In order to assess the impacts in this area, we sought out some experts. As I may have mentioned, we had a very limited budget to do this, so we looked to co-opt other people's resources as creatively as possible. Our search took us to the Public Archives. Within the Public Archives there was a group in the Machine-readable Archives Branch who wanted the experience of being involved in the field trial. They signed on in early 1983, both on the implementation team and on the impact assessment team.

Public Works Involvement

The field trial offered another research opportunity, namely to look at the interaction between the technology and the user, and ultimately the built environment. Much of the literature at the time suggested that there was a relationship between user response to technology and ergonomic design issues, both with respect to the terminal, the product being installed, and the environment in which the technology was being installed.

My search for experts and complementary resources in this area led me to Public Works Canada, where I found a group in the Architectural and Building Sciences Branch who were already well advanced in developing approaches for measuring building performance.

One hypothesis that they were interested in testing had to do with putting controls at the level of the individual user. They hypothesized that by giving control back to the users at the micro level, we could not only improve the building performance overall in terms of energy efficiency, but that we might also positively influence users response to the technology. To this end, they developed a research tool called a functional diagnostic unit, or a FUNDY for short, which has gone through various iterations.

We enlisted their support, and signed them up both to work with us on the implementation of the project, and on the impact assessment itself.

University Involvement

Now I come back to the question of impact assessment. We had a need to find a home for the impact assessment activity or a group that would take overall responsibility for co-ordinating the impact assessment.

We decided that, in order to finance this activity, we would tap into our University Research budget in the department. At the time, our Deputy Minister, Bob Rabinovitch, thought that this field trial would provide a rich research opportunity to Canadian universities. At the same time, we had a source of funding support for the impact assessment which would otherwise not have been available through the OCS program.

We enlisted the support of a consortium of universities. Dr. Susan Clark from Mount St. Vincent University offered her support; she has been leading the impact assessment team for the last two years. Also on the impact assessment team are researchers from the University of Montreal, Dr. Annie Mear from the Communications Department, and several graduate students. We also enlisted support from Queen's University from Professor Loreen Schneider.

The impact assessment has been moving forward over the last two years with the additional support and resources from Public Archives and Public Works. Specific research support has also been contracted from researchers at Concordia and McGill Universities. In terms of the environmental impact assessment, we also enlisted the support of an independent consulting firm, Architectural Diagnostics. Pleasantine Drake, of that firm, has been advising us on issues relating to site preparation, facilities management, wiring, acoustics, lighting, heating, air quality; a lot of things I thought I would never have to know being a Director in a policy environment.

Supplier Selection

I'd just like to pick up where I left off with the actual development of those functional requirements and technical specifications. With this grand design in hand, we went in search of a supplier. Our search led us to Pointe Claire, Quebec, to a company called Comterm. I'll let Jens Laursen pick it up from here.

COMTERM'S GOALS

JENS : I'd like to spend just a moment to give you a bit of background. Comterm started in 1970, and began building terminals. In 1982 we were still a small company, about \$14 million revenue, headquartered in Pointe Claire, Quebec. We were developing and marketing IBM-compatible

terminals for the North American market, France, and the Middle East. But the market was changing. Our customers were asking for more and more applications processing power on their machines, and they didn't want multiple machines. Early in 1983 we were planning to take probably the logical move for a terminal manufacturer, which was to use a super-micro to achieve greater processing power. However, on reflection, we decided that a more powerful approach would be to integrate all of that application power right in the same workstation. In fact, to develop networks around intelligent workstations and personal computers.

Now in 1983, the DOC field trial presented itself. To us, it represented the challenge we would have to meet in the future. DOC was a willing user. DOC had a real organization with real problems. To us it was a tremendous opportunity to develop an operational system. It was R&D in the pure sense of the word. So we took a leap of faith.

We committed ourselves in principle to carrying out this project. We committed ourselves to make it work, even though, at this early stage, we still did not fully understand the requirements.

THE DOC ENVIRONMENT

MARY : The requirements were, in fact, relatively straightforward. We wanted a system that would support the creation of information. We wanted a system that would allow us to move that information around. We wanted a system that would allow us to store that content, and to retrieve it. Sounds simple!

Let me just lift the veil now and take you behind the scenes, and tell you what that really means in the DOC environment.

I talked about the Broadcasting and Content Services Policy Branch earlier which, for purposes of this discussion, is my reference point. At the beginning of this field trial we looked at the business processes in this particular branch. Staff create a large volume of unstructured information on request from senior management and often at their own initiative. This information is formatted in a certain way. It is routed through a predetermined approval process. Ultimately the original finds its way into the corporate archives which is organized and managed in a highly controlled way.

Consider for a minute our handling of ministerial correspondence. In 1983 when we sampled the volume of ministerial correspondence routed at this Branch, staff were averaging about 800 new letters annually. That number has since jumped to about 1,400, and it has been climbing monthly. With respect to the 800 new letters, we asked what the processing time was and what happened to these letters as they were being processed. It should be noted that the turn-around time imposed by the senior management is targetted at 10 working days. The average turn-around time is about 29 working days. Each letter can go through up to 15 revisions before it clears the Deputy Minister's office.

We decided to probe that a little further and we found that these letters go through up to 15 revisions, sometimes for typographical errors, but often for content changes. When we looked at the track that these letters followed, we found out that a letter created in the Broadcasting and Content Services Policy Branch could travel through up to 32 different loops enroute to the Minister's office. Each letter often gets copied up to 40 times. By time Legal Services, International Relations, Federal Provincial Relations and other responsibility centres had signed off or had their revisions made to the letter, we were well over our target turn-around time.

We thought that in the area of policy correspondence we could potentially achieve some of the promised efficiencies that these new systems were to bring.

That will give you at least a glimpse of the information environment in DOC.

CONSTRAINTS

JENS : Along with the requirements, let me just give you an idea of the timeframe. As Mary said earlier, we were the last trial on the block to begin. We were first approached by DOC in January of 1983. We basically agreed that we would explore this opportunity. We were given the functional specifications in April and technical specifications in June. The go-ahead came in October; that's 8 or 9 months down the road. At that time, we started the design study, and that phase began in October and ended at Christmas time.

The build phase, the actual building of the product, and the testing started in January and was to be delivered in the spring. Now, not only was the schedule tight but the user, DOC, wanted the system to be bilingual. They wanted Telidon. They wanted to integrate the existing DOC technology. They also wanted it to work! Early in the game, I realized that what they expected was a production system. Was this madness? I mean wouldn't it be simpler to just reorganize the government?

MARY : Well, in fact, we considered that option, but cool heads prevailed. I said, "I don't have a mandate to reorganize the government; or DOC for that matter ". We made a fundamental and a critical decision at that point in terms of the overall design and the implementation of this field trial. That was to develop a system which would support, even mimic the way in which the users did their work in the existing DOC environment. Coming from a user's perspective, that suggested to me that we could potentially minimize the disruption of introducing this technology, assuming we could introduce it in a way that would be complementary to the way staff were used to working. It also gave us a known, or at least we thought a known blueprint in terms of the design phase. To realize our ambitious goals, we also made a commitment at that point to pool our resources. From there on, the design phase, the build phase, and the implementation phase became a collaborative effort between Comterm, DOC, Public Archives, Public Works and our research team.

The installation of the system began in June of 1984.

THE INSTALLATION

JENS : And what was that system? We installed seventy, intelligent, IBM-compatible workstations, 25 printers, and 275 Mb of hard disk storage, all hooked together on a LAN covering 8 floors of the Slater Street building. The LAN, the local area network, Mary likes to call the smart wire.

There are a number of ways of looking at the system. Some people see it as a lot of PCs. We think of it as spreading the processing power of an IBM 4381 or a couple of large VAX machines over 8 floors of the site. The system has 50 Mb of RAM, on-line memory.

The system was designed to provide a mix of customized applications and, where it made sense, tested off-the-shelf software products. To support the creation of textual documents, we provided one of the best word processing packages available at the time; that was Multimate, and we made it operate in French on the network. For numeric documents we chose the best spreadsheet package available, LOTUS 1-2-3. We really didn't see an advantage in developing "me too" products. What the user needed was top quality, working, document-creation tools. We quickly found that they already existed.

To meet the requirement for graphic information or Telidon, every workstation on the system has a page-create and page-display capability. We worked with Limicon in Toronto to put their Prodraw product on the network. I might add that the slides we are using here were done with Telidon technology. That gives you some idea of what you can do in a presentation.

To support the storage of information, we were faced with the challenge of putting a storage system together that complemented the way information was stored in the department's paper information system. The storage applications are the result of a joint effort between DOC, Public Archives and Comterm. We developed a set of interrelated bilingual applications which comprise folder management, group space and archiving.

Folder Management is an application that allows users to store information in any way they feel like storing it. On the system itself, each user has a minimum of a half Mb or maybe one hundred to two hundred pages of text. It is a tool that allows users to operate their electronic desk the way they operate their paper desk.

To support policy analysts, we put together an application called Group Space which allows a project team to work together on the same information, such as a policy paper.

To achieve the orderly management of corporate files, and on-line electronic archiving, we developed corporate Archiving. What's distinctive about this system is that it mirrors the existing corporate records system, and it was developed to reflect as closely as possible the policy requirements in place across the federal government respecting the management of public records. It provides the identical file structure, and it also allows for the insertion of access-to-information and privacy-exemption data.

To support the movement of information, we developed an easy to use bilingual E-mail package for informal transfer of information across the network. It allows users to attach documents so they can pass them one to another. Users can create distribution lists and do all the rest of the good things we expect from E-Mail packages.

To support the formal movement of information or executive correspondence through the organization, we created Document and Task Management. We developed a bilingual application which formally moves the information across the organization and tracks its movement. This basically provides one-time logging of executive correspondence and tasks. It also supports a number of features such as automatic generation of bring-forward dates. You can get reports of what's active, what's due, what's late, and the user can select the parameters of what they are interested in looking at.

DOC already had in place some technology - AES word processors, a Develcon data switch, and a Honeywell mainframe computer used for corporate financial and personnel records. Comterm developed applications to support the movement of information to and from these external systems.

EXPERIENCES AND LESSONS LEARNED

MARY : Next we would like to speak of the experiences and the lessons learned from the trial...

JENS : One of the very important things for us was to be able to test out the methodologies for user-driven design. From our viewpoint, one of the most important things that happened was the decision to put the user right on the build team. This meant that DOC technical staff were working with us full-time. Public Archives staff also joined the build team at critical points in the development of the storage applications. That meant that we could continually get an explanation on the requirements. Comterm and DOC were both able to make intelligent decisions and trade-offs as the process evolved. Remember this process occurred from January to June, so we had to optimize our decision making.

In addition to the day-to-day participation of DOC technical staff, the project manager and project director did structured walk-throughs of the software with the build team on a regular basis to refine and, sometimes redefine, the applications. For instance,

Document and Task Management was rebuilt three times at least. Archiving has been rebuilt twice. E-mail went through numerous iterations. I guess the basic lesson is you can't build a user-driven system without the user being part of the process.

MARY : Let me just speak to a number of issues from a user's perspective, including system use and implementation.

The system in the Broadcasting and Content Services Policy Branch is being used four to five hours a day on average by a majority of users in the branch. It is being used primarily to create documents, to move documents around within work groups, and up to the Director's level, for joint authorship, for revision, and for sign off of documents.

Outside of the Broadcasting and Content Services Policy Branch, at the level of senior executives in the department, the system is being underutilized. Our senior management were very enthusiastic about the introduction of the system. They went through training when we installed the system. They all made an effort to use the system, however, after the first few months, I think we all realized that this was not going to be a system that was going to have a pay off for senior management. They had resources in their executive assistants and their special assistants and their support staff who could run the bases for them faster than they could key in information on the electronic messaging system. That did not really come as a surprise to us, however, I think it was important that senior management shared the field trial experience at DOC. They now have a better appreciation for what the technology can do and how their needs might be met in this area.

As far as the introduction of the technology is concerned, I would just say that the introduction of these systems provides the potential for introducing chaos into any organization. More and more, as time went on, as project director of this field trial, I realized that my principal role was to direct and to manage the chaos that resulted from bringing in an integrated system. I think that the fact that our users are using the system in the way it was intended, at least at the working levels in the department, suggests that the project team has been doing some things right in terms of managing the chaos.

Let me just comment on some of the operating principles governing the introduction of this system. We learned early on with an experience involving changes to the

actual physical environment in the Broadcasting and Content Services Policy Branch, which had some people moving into open space who had previously been in closed space; that we had to be very conscientious about consulting the users on each and every change we introduced into this organization. Thereafter, we decided that, as a rule of thumb, we would exaggerate all user resistance by about ten times and plan for it. In fact we consulted those poor users until they said "Please don't tell us any more about the DOC field trial".

I often get questions related to user resistance. We certainly had some users who were negative about the trial. We sought to involve them in the build team. We tried to harness their criticism in a constructive way. We sent them to Montreal and had them critique the software and the training instruments. They made a valuable contribution. Along the way we also worked them through a few training tutorials, and by the time they came back they knew how to operate the system. These same people are now using the technology, and are quite positive about its benefits.

One of the things that we realized early on when we were planning the introduction of the system and when we were actually developing the training modules, was that it wasn't enough to give the users in the DOC organization these tools; we had to tell them how to use them if we were to achieve some of the promised efficiencies. As I mentioned earlier, there are protocols and procedures governing the way we move information around in that organization. A lot of those protocols aren't written down. We thought we knew something about them and we thought we had reflected this knowledge in the actual design of the system. But we realized when we began to introduce the system, that we had to tell the users how to format information on this system to make it look like the information generated in the parallel paper-based system. We had to tell them who did what at each level of the integrated office system, as information got created, moved through the organization, signed off, and moved into archives. It has been a major project of DOC and Public Archives over the last six months to develop procedures for the staff to use to guide them in the use of the system.

Let me turn briefly to the impact assessment. Impact assessment is often thought of as a soft issue. We were informed throughout the process of designing and introducing the system by the actual impact assessment. In fact it has been an invaluable tool in helping us to disentangle the noise from the real problems.

TRAINING

JENS : Comterm's responsibility was to train the trainers; DOC would train the users. We found that the requirement for training people in integrated systems was very different from training people on stand-alone machines like word processors or their own PCs. We also found in the first phase of training that expecting people to learn from tutorials like you get for a PC isn't enough. For one thing, it can't be done in the timeframe. For another thing, the documents and the manuals aren't necessarily easy to read - they are not clear. Mostly they are not relevant. There is often no linkage between the training materials and the actual requirements.

What we undertook was on-the-job training for all users at all levels on all functions...and that's a challenge.

The training team requires people who understand adult education. They have to understand large organizations. They have to understand the technology. We tested a variety of approaches. For the directors and up, we provided one-on-one training. Below the director level, we trained staff in work groups initially for two days. We subsequently offered training in peer groups on specific functions.

An interesting by-product of workgroup training was that it reinforced the team spirit within the workgroup itself. We found that we were able to get people on the system quickly, using a customized training approach. We also provided user support. An interesting human psychology problem is that people don't ask questions when they don't know, so we had to go out and solicit questions - actively support the users.

We put three Comterm staff members full time on the DOC project team in order to learn to live the experience with the users and really understand what was happening in this user environment. As a result, we have a very good appreciation of what it takes to train and support this kind of a system in a large organization. We are now using these insights in developing our training programs.

MARY : Finally, it should be noted that it's costly to introduce and support these systems. It required a mix of skills that weren't readily available in the department: organizational analysis skills, system design skills, technical expertise training skills, user support skills, facilities management skills, research design expertise and project management skills. As far as

possible, we developed these skills within the department as we went along.

Results

Let me wrap up by saying that in terms of our initial goals we certainly benefited from the experience of the field trial in DOC. We learned a great deal about integrated office systems, and what the "state of the art" really is. Through our own in-house experience with the introduction of this system, we gained expertise both at the level of the individual user (they acquired new skills - computer-based skills) and at the level of the organization. As a result of this field trial project, we also gained expertise in terms of how to introduce technology in the Department of Communications. I'm pleased to say that at the corporate level, we have initiated work on a strategic plan for integrated systems in DOC.

I think from the point of view of efficiency, we did achieve significant efficiencies, certainly at the working level in terms of creation of content, the revision of that content, and the movement of that content through the system up to the Director and Director General level. Within the Broadcasting and Content Services Policy Branch, my colleagues would argue productivity improvements in terms of "cost avoidance". They continue to do more with the resources allocated over two years, in part, because of the system.

In terms of research, we are just now grinding away at the impact assessment study. We think it's going to be a major piece of trans-disciplinary research which should contribute significantly to the literature in this area. We are trying to make the link between environment, social/human factors, organizational issues, as well as information management issues. We hope that the research study which is likely going to be available in the summer will help to lead future discussions in this particular area.

JENS : I mentioned our goals earlier on. In short, I think we met our goals. In fact, we exceeded them.

We tested new concepts. We tested out network concepts: network response, the reliability and integrity of a large network with a lot of activity, as well as security mechanisms.

We investigated and tested network operating systems. We really experienced and learned about distributed processing systems, and whether PC's, a whole bunch of PC's, really do the job. I think the usage in the trial says it can.

The integration of products was a difficult problem. Bilingualism is a particular concern for Canadian suppliers. One of the things we have had to do is to build some software to allow bilingualism and French language support. This is expertise that we can market internationally. We are working with US vendors to ensure that they really understand the bilingual requirements when they start the design process.

We have made some major adjustments in our new products from where we were two years ago as a result of the experience with DOC. We changed our user shell environment. We changed our network operating system. We are changing the way we handle printers. These are all significant things that we have learned on the technical side. The DOC field trial is the most significant R&D program that Comterm has ever undertaken, with the biggest payoff. The payoffs are basically due to the field trial approach.

What I'd like to do as I leave is thank DOC: the OCS Program; Alain Gourd, the Senior Assistant Deputy Minister; Shirley Sarrafini, the Director General of the Broadcasting and Content Services Policy Branch where this equipment was placed; Ken Hepburn the ADM for Technology and Industry; all of the staff; and really in particular, Mary, Ken Dagg, and Lise Fournier for a tremendous team effort.

I would now like to introduce Doug Hardie, the DOC Account Manager who will talk about Comterm's future directions.

COMTERM'S FUTURE DIRECTIONS

DOUG : The fall-out from the Department of Communications project for us is a real prize. The fall-out has been our new Research & Development centre on Woodward Drive, which is dedicated to developing the current new products. These products are based on the multifunction workstation concept.

One thing we learned from our experience with the Department of Communication was that we have to remain flexible in our approach. It has to take into consideration the changes that are happening in user

requirements, and in the thousands of pieces of software which are being developed out there. So, our structure is even more open today than it was at the outset of the DOC field trial. We are dedicated to an open architecture concept based on the PC.

Of course, once you build a system and introduce it in a work group, you have to have external communications for that workgroup. That is a key focal point for Comterm.

We learned that the human considerations were so critical in making a system work. It is not just a matter of connecting a series of black boxes to pieces of software. A phrase you have heard all day is "user-driven design". I believe it has to be that way. The system has to function the way people work. We can't change that. We have to adapt to them.

Also we found that our product marketing is now having to take a different approach than the typical vendor/purchaser relationship. It used to be you bought a piece of hardware. You took receipt of it and it was yours! The design and integration of that technology now has to be a cooperative, collaborative effort. Some of those barriers have to change. Some of those approaches have to change. The cooperative, consultative approach is a very popular phrase nowadays, and I think it is very applicable to the approach that Comterm is taking to our office automation systems.

Multifunctionality - we based our system on IBM PC technology. We feel many departments and many industries have hundreds of PC's sitting out there that need more added value. Some of them have cobwebs on them, while others are being overly utilized. We can hook those IBM PC's or compatibles together for greater efficiency. Comterm is also going to be providing a workstation that is PC-compatible and ergonomically designed.

Another thing we've learned from the field trial is that we thought we'd designed the menu system on the product to be very friendly, very easy to use. We saw we had to make it even easier to use, so we built the new Comterm user interface using multiple windows. It is designed to protect the end user from ever having to know anything about how a computer works. The disk operating system is something that we are protecting the user from.

In short, we made it simple - you simply point to where you want to go. However, to be perfectly candid, we haven't resolved the problem of learning how to use a spreadsheet. You still have to read a manual for that part.

After the system is working as a unit, it becomes necessary to connect to the outside world. We have developed a series of bridges and gateways. Gateways to things like IBM systems network architecture SNA, which is the host-driven, private network on an IBM mainframe system, to the public networks provided by Bell and CN/CP, X.25, bridges to other technologies. We must be able to run on token passing or collision detect LANs for example, and our system is designed to be able to do just that. We've designed to integrate and utilize existing technology.

Archiving - You might say that we are dealing with electronic paper; it is really what we are creating on office automation systems. Developing an electronic method of storing and retrieving, such as laser discs is all part and parcel of our plan and an obvious requirement for storing and retrieving this electronic paper.

Training is a key point. The training has to be customized, and the training will be customized to meet the individual needs of the user. We find that most manuals teach the entire system, whereas the end user needs to know how to do the function. In the final analysis, the quality of user support is really the key. That's what makes it all work. If our systems are going to work, and they will work, then we have to be dedicated to not walking away after we put it in. The system has to evolve. The customer has to feel comfortable that as things change, the vendor will be able to come back and provide them with a continued level of support. Comterm is committed to this philosophy.

Thanks DOC, you provided a terrific testbed for us to develop a product that we are taking to market.

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