February 1983

Teldok

Reference Document B

Office Automation in Europe

Survey of European Office Automation Pilot Trials

Reported by

EIU INFORMATICS

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PREFACE

This report surveys office automation pilot trials in Europe, and was completed in October, 1982, by consultants with EIU Informatics, a section of the Economist Intelligence Unit (formerly working with the Communications Studies & Planning).

The report was commissioned by TELDOK. Initiated by the Board of the Swedish Telecommunications Administration, TELDOK aims at documenting and distributing, at an early stage, experience related to the business use of novel telecommunications systems, in particular to office automation. The TELDOK Secretariat is with the Corporate Planning Staff of the Telecommunications Administration, and the TELDOK Editorial Board is presented at the back cover of the report.

Reports sponsored by TELDOK should be suited to a large, primarily domestic audience, many of whom might well be non-specialists. In spite of this, the timeliness and scope of this report merit its swift publishing, unabrigded and in English. The circulation is limited, as the report in its present format is intended chiefly for reference use by Swedish libraries. Eventually, the report will be translated and edited to appear in a Swedish-only volume which will also report on office automation in the US and in Japan, drawing on two more reports already published or to be published by TELDOK.

Bertil Thorngren
Chairman, the TELDOK Editorial Board

SURVEY OF EUROPEAN OFFICE AUTOMATION PILOT TRIALS

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SURVEY OF EUROPEAN OFFICE AUTOMATION PILOT TRIALS

1. THE SCOPE OF THE STUDY

Much is heard about the advances in information technology and office automation both in the popular media and in specialist journals and conferences. However, like many areas of new technological development, it is not always straightforward to separate the promotional sales pitch from reality. A single project may be written about many times creating an illusion of diverse activity, and new system concepts are often discussed so frequently that it is forgotten that they may still lie on the drawing board. Figures for increased productivity arising from the implementation of such equipment may be put forward as facts without any discussion of their reliability and the methodology used to derive them.

In the midst of all this discussion and over-enthusiasm, some organisations are taking a very studied approach to new office technology, by running pilot trials which are carefully monitored for impacts on businesss efficiency and effectiveness, staff attitudes, the organisation of the working unit etc. The knowledge they are gaining is potentially invaluable to those user organisations who are presently considering whether and how best to introduce office automation as well as to suppliers trying to develop new services and systems for the office environment.

The Swedish Telecommunications Administration, Televerket, is administering a fund called TELDOK for the purpose of documenting and disseminating information in the field of telecommunication supported office automation. This report, sponsored by the fund, contains details of new and planned office automation pilot trials in Western Europe.

Various factors determined which pilot trials are included here. Firstly, we are indebted to those organisations which were prepared to give us information concerning their products or the trials they are conducting. Secondly we imposed our own constraints which are as follows:

- trials should be true pilots in that a decision will at some time be made, based upon the trial's success, which will determine whether or not the particular equipment will be introduced throughout the organisation as a whole or to other departments within the organisation;
- evaluation should be of a sufficiently high standard and independence so as to guarantee the validity of any conclusions which may be drawn;
- current or planned pilot trials would allow Televerket to become more deeply involved in their progress and, perhaps, cooperate with the organisations concerned;
- trials should use the equipment in a real context, i.e. for the same purpose as normal work.

2. THE PROGRESS OF THE STUDY

The first stage of this research involved searching our own library and public databases and archives for references to pilot trials. EIU Informatics searched the following electronic databases:

Fintel (Financial Times)
MGMT
Predicast Prompt
INSPEC (Institute of Electrical Engineers)
SSIE Current Research
National Newspaper Index
Newsearch

The main problems encountered with these sources were that entries either referred to trials based in North America, or they were often sufficiently old for the research to have been completed and conclusions drawn before they were published and made publically available. Many potential studies were rejected on these two grounds.

In the second phase of the project EIU Informatics spoke to contacts in Office Automation consultancies, European PTTs, research establishments and equipment suppliers. Much time has been required for organisations to obtain internal approval and the approval of the other organisations involved in each trial in order to give us any details of the trials. The topicality of this subject also created its own problems. 1982 is a critical year for many suppliers who are either developing or about to release equipment. Competition is such that some suppliers approached were unwilling to reveal information about planned trials or to risk publicising any adverse results which may arise from using novel and, as yet, untested equipment.

It was because of these imposed delays that EIU Informatics asked Televerket to postpone the date for a final report by three to four months, by which time further information on pilot trials would be obtained. Details of 15 pilot trials were included in an interim report. This report contains updates to that information and details of a further seven trials.

Although the approach has been fruitful, it has not yielded a complete result. However, the researchers to feel confident about the standard of the evaluation, or the proposed evaluation, of each of the trials which are included here. The extent to which this exercise proved to be difficult illustrates the fact that very few trials exist which are of a sufficiently high standard.

Those user organisations or suppliers whose trials are included here are as follows:

British Rail Engineering
British Telecom
Cabinet Office
Cambridge County Council
Central Computer & Telecommunications Agency
Coats Paton
Department of Industry
Deutsche Bundespost
European Parliament
Export Credits Guarantee Department
Greater London Council
Institut National de Recherche en Informatique et en Automatique (INRIA)
National Westminster Bank
Price Waterhouse
Rank Xerox
Siemens
South Eastern Gas
Thomson CSF
Thomson Holidays

Other organisations we contacted, but were unable to suggest suitable trials, included:

Aregon International
BL Systems
Digital Equipment Co (DEC)
European Foundation for Improvement of Living & Working Conditions
General Electric Co (GEC)
IBM
Local Authorities Management Services & Computer Committee
Manpower Services Commission
Netherlands PTT
Olivetti
OTL
Philips
Plessey
Radio Suisse
Rank Xerox
Rediffusion Computers
Shell Petroleum
Volvo

Also various consultants and other people involved in office automation.

3. THE RANGE OF PILOT TRIALS

For the reasons given in the previous section, those pilot trials included in this report are biased towards public sector organisations which are more open with information. In addition the survey is biased towards UK organisations mainly because the majority of suitable pilot trials are in the UK.

In other respects this sample of pilot trials contains a range of:

- user types (mangers, professionals, secretaries and clerical staff);
- technical facilities (word processing, OCR, electronic mail and messaging, information storage and retrieval, support application (such as diaries) and some DP);
- equipment (text and voice terminals, LANs, teleconferencing and viewdata).

The coverage of the trials reported, and those on which further detail and publication authorisation is still sought, is shown in figure 1.

Figure 1. Range of Pilots Trials Included in this Report

	User group				Technical facilities										Sector		Nationality			
Trial	Managerial	Professionals	Secretarial	Clerical etc	W.P.	E.M.	Messaging	Info. storage	Man. aids	Teleconf.	Viewdata	D.P	Voice facilities	OCR	Public	Private	UK	France	West Germany	Other
1	X	X	X	X	?	?	?	?	?	?	?	?	?	?		X		X		
2		X	X		X	X	X	X								X	X	(X)		
3		X	X		X	X	X	X								X			X	
4			X	X	X	X	X									X			X	
5	?	?	?	?							X					X			X	
6			X		X									X						X
7			X			X														X
8	X		X		X	(X)	X	X	X		(X)		(X)		X		X			
9	X	X	X	X	(X)	(X)	(X)	(X)	(X)				(X)		X		X			
10	X	X	X	X	(X)	(X)	(X)	(X)	(X)			(X)			X		X			
11	X	X		X	(X)		(X)	(X)			(X)				X		X			
12	X	X	X	X	(X)	(X)	(X)	(X)	(X)		(X)		(X)		X		X			
13			X	X	(X)			(X)				(X)	(X)		X		X			
14	X	X								(X)	(X)				X		X			
15			X		X										X		X			
16			X		X										X		X			
17		X	X		X	X	X	X				X				X		X		
18	X	X	X	X	X	X	X	X								X	X			
19	X	X	X	X	X	X	X	X	X			X	X		X		X			
20		X	X					X								X	X			
21			X		X											X	X			
22			X		X											X	X			

() - proposed or planned facility.

4. PILOT TRIALS

To ease comparability, each pilot trial is briefly described on the following pages under a number of standard category headings. Only in some cases have any evaluation results been obtained yet and sometimes the exact form of evaluation has yet to be decided.

The confidentiality of the information is recorded in each case. However, we have undertaken that we would allow the organisations concerned to comment on the details which we have reported here before they may be made publicly available.

The category headings are:

Organisation. The sponsor of the evaluation exercise and of the equipment itself.

Contact. The name and address of the contact.

Telephone. His, or her, international telephone number.

Confidentiality of information. The present status of the information in this report.

The trial.
- timing or start and finish dates of the trial
- number and location of sites
- number of users
- status of users
- responsibilities of users

The equipment.
- the number and types of equipment in the trial
- the facilities available

The aims and objectives of the trail

The evaluation.
- Methodology
- Timing
- Evaluation tools i.e. the logs, questionnaires etc.

The results. Any conclusions which have already been drawn from the evaluation exercise, if it has been completed.

The future. Any plans for further trials.

4.1 PROJECT KAYAK

Organisations

A bank in Toulouse, an international consulting organisation in Paris and an administrative-managerial chamber in Paris.

Funding body

Institut National de Recherche en Informatique et en Automatique (INRIA).

Contact

Clovis Zanetti
Project Pilote IRIA
Domaine de Voluceau
Rocquencourt
BP 105
78150 Le Chesnay
France

Telephone

39 (1) 954 90 20

Confidentiality of information

None.

The trial

At present, the pilot project is still at an early stage. A Methodology is being developed and tested which examines the nature of office activities prior to the introduction of office automation technology. The report which identifies the final version of a tested methodology will be published in December 1982. Afterwards the work of implementing and evaluating the technology will begin.

Three trials which tested the methodology are described below.

Timing: Each trial took place over four weeks and was held in the beginning of 1982.

Sites: There were three sites involved. One is the head office of a bank in Toulouse (BT), another is a consulting organisation (CO) employing 200 people and the third is an administrative-managerial chamber (AC) of a large banking organisation in Paris.

Users: BT - 11 in total:
- 4 from the marketing department.
- 7 from the legal department (3 managers, 4 clerks and 4 secretaries)

CO - 31 in total:
- 13 executives
- 9 engineers
- 9 secretaries

AC - 23 in total:
- 11 executives
- 5 middle-managers
- 7 clerks & secretaries

Aims and objectives

The main aim of the trial at this stage is to develop and test a methodology for examining office activities.

This methodology will then become part of a unified strategy which may be used for a number of different purposes, such as:

- to specify the right type of office automation equipment;
- to introduce such equipment;
- to evaluate Burotique in its field of application.

Investigation tools

A series of investigation tools have been developed which examine the activities of an office.

- Questionnaires: These examine the users' use of equipment presently available in an organisation;
- Task records: These are completed by the users' themselves describing their activities in terms of a given set of standard processes;
- Communication diaries: These are completed by managers and senior personnel recording every communication in terms whether it was face to face or held over a telephone, for example, the other party involved, who initiated it and what difficulties were encountered;
- Detailed task analyses: Using data collected by the task records, each subject was interviewed in depth about a sample of the more important and/or time consuming activities.

4.2 OFFICE OF PATENT COUNSEL PILOT

Organisation

Rank Xerox.

Funding body

Rank Xerox.

Contact

David Jones,
Albion House,
55, New Oxford St.
London W1
England

Telephone

44 (1) 836 6600

Confidentiality of information

None.

The trial

The trial described here has been included even though it was concluded in 1980. This is for two reasons: Firstly, a rare feature of this trial was that it included a control group whose performance can be directly compared to the group using office automation equipment. Secondly the equipment used was a prototype of that being introduced this summer in various commercial pilot trials. Details of those pilot trials can be usefully combined with the results contained here. This particular trial does suffer from the fact that the equipment supplier, users and trial evaluaters are all from the same organisation.

Start date

11/79.

Finish date

3/80.

Number of sites

Two.

Number of users

	Test group	Control group
Attorneys	4	4
Secretaries	3	3

Responsibilities

Production of reports concerning patents.

Equipment

Test group	Control group
2 file servers 2 printer servers 6 prototype 8010 work-stations 1 ethernet LAN linked via 2 Gateways & an analogue telephone connection to: 1 prototype 8010 work-station 1 ethernet LAN	3 electronic memory typewriters

Facilities (the test group)

- creation, editing, storage and printing of text by all users;
- electronic mail.

Aims and objectives

The focus of the pilot project was to examine the effect of introducing such a system on:

- communication and coordination;
- document creation and editing;
- filing and retrieval;
- legal research;
- time management and scheduling.

Evaluation

Methodology: the activities, performance and attitudes or reactions of the subjects were compared for the test and control groups.

Timing: continual monitoring throughout the trial.

Some results

a. Internal correspondence. Both the test and control groups were situated at two sites. The average times taken for an item of text to reach first a secretary and then an attorney at another site are shown in the table below.

Table 1. Internal Mail

	(Business work day hours)	
	Test group	Control group
Hours to secretary	0-0.5	8-24
Hours to Attorney	0-2.0	0-22
Total delivery time	0-2.5	8-46
Average	1	21.1

b. Telephone call activity. As shown in Table 2, the times spent by attorneys on the telephone was much reduced in the test group. The estimated savings of time spent away from the telephone were 47 minutes per attorney on average per day.

Table 2. Telephone Call Activity Per Attorney Per Day

	Test group (%)	Control group (%)
Incoming calls		
At start of trial	6.0	5.3
At end of trial	3.3	5.3
% change	-45	0
Outgoing calls		
At start of trial	11.7	4.0
At end of trial	8.5	4.2
% change	-27	+5

c. Secretarial activities

The percentages of time spent on various activities is shown in Table 3. The total amount of time spent on document related activities is little changed.

Table 3. Secretarial Activities

	Test group (%)	Control group (%)
Initial typing	15	19
Revision/retyping	15	22
Proof reading	8	1
Telephone	12	1
Other	50	57
	100	100
% change in pages of final text produced	0	100-150

The evaluation exercise concluded that the daily savings in time ranged from 40 to 60 minutes per Attorney and 48 to 70 minutes per secretary. In addition there were numerous intangible savings in output quality, job satisfaction and responsiveness to business needs.

4.3 COMPUTER SERVICE (CS) FOR SECRETARIES AND MANAGERS

Organisation

Unknown.

Contact

Herr Klaus Wimmer, Siemens AG
Zentralbereich Technik
Zentrale Aufgaben Informationstechnik
Postfach 83 09 55
D-8000 München 83
West Germany

Telephone

49 (89) 636 44639

Confidentiality of information

Draft only - not to be published yet.

The trial (preliminary study in 1975)

Start date

1979.

Finish date

1982.

Number of sites

Five locations in two cities.

Number of users

About 60 users (managers, secretaries and information workers of all levels).

Responsibilities

Secretarial, planning and finance.

Equipment

35 Siemens terminals (VDU, special function keyboard and typewriter) linked by telephone to remote sites.

Facilities

Text creation, editing and storage, text messaging and electronic mail.

Aims and objectives

The main objectives were:

- facilitate better group cooperation and working;
- greater flexibility;
- to create shared databases;
- improve communications;
- reduce the number of secretaries' repetitive tasks by taking care of the routine daily work;
- no disruption of the office environment.

The evaluation

The purpose of the trial was not only to evaluate the effects of introducing an item of office automation technology, but also to help design the equipment and facilities offered.

The preliminary study involved the analysis of the system's automatic usage recording. Using discrete blocks of varying lengths of time (ranging from seconds to minutes) patterns of usage were built up. These lead to conclusions about man-machine interaction, possible applications and the working structure of an office.

The second study was designed so that the users' knowledge of their own tasks allowed them comment on and suggest applications for the equipment.

Methodology:	30 to 35 of the 60 users in total were observed over the three year period of the trial. This included observing how the system coped with real crises.
Evaluation tools:	Questionnaires, interviews and discussions were used. In addition Siemens observed the working patterns of the users and any changes which occurred, such as sending messages in preference to visiting someone. Automatic logging facilities recorded the use made of the equipment.

The results

They found a high degree of acceptance amongst the staff in the office. A large number of suggestions were received, some were unpractical but all were worthy of note.

The results were:

- colleagues sent messages rather than arranged meetings;
- databases were successfully set up;
- costs of the system were 'acceptable';
- people successfully shared more information and edited each other's work;
- secretaries carried out a reduced amount of repetitive work leaving time for other activities. However, there were no drastic changes to the secretarial work done in the office despite individual improvements.

4.4 TELETEX SERVICE TRIAL

Organisations

Various.

Funding body

Deutsche Bundespost.

Contact

Herr Rolf Rüggerberg
Deutsche Bundespost
Fernmeldetechnisches Zentralamt
Postfach 5000
6100 Darmstadt
West Germany

Telephone

49 (6151) 83 2161.

Confidentiality of information

None.

The trial

Timing: Phase 1, 1st technical trial - 12/1979 to 2/1981
2nd technical trial - 3/1981 to 28/2/1982

The first trial was mainly for demonstration purposes and to initiate discussions on international protocols. During the second trial, the teletex service was developed in accordance with these specifications. Users paid no subscriber charges. Users gained experience of operating their terminals while being able to send telexes worldwide.

Phase 2 was due to start in May 1982 and to finish at the end of the year.

The same users would now be able to take advantage of a full teletex service. International links will be provided as and when other nations develop their own teletex service.

Sites

Throughout West Germany.

Users

Secretarial and clerical staff from two groups of organisations:

Group a: Large organisational units which currently use medium-sized or large PBXs, teleprinters, EDP systems and word processing equipment and which may have typing pools;

Group b: A greater number of medium-sized, small and very small firms.

Equipment

Prototype teletex terminals manufactured in 1980 by:

Siemens
Triumph-Adler
Olympia
Philips
Standard Elektrik Lorenz

Facilities

Text creation, editing and messaging.

Aims and objectives

The main objective of this trial is to stimulate the development and acceptance of the teletex service. Various factors are considered to be important, such as:

- the compatibility of all terminals and systems connected by the national and international services;
- the compatibility with telex;
- the high speed and reliability of the transmission of text documents;
- the low telecommunications charges;
- the multifunctional character of the terminals;
- the capacity for further development of the service and thus its long term viability.

The Deutsche Bundespost forecasts about 40,000 teletex terminals in 1987 and about 100,000 in 1992. Ultimately 40 per cent (or 8 million) of the letters produced each day in West Germany will be produced and sent by teletex, predicts Deutsche Bundespost.

The evaluation

The results of the trial will be published in 1983. It is hoped that they will cover:

- productivity;
- production times;
- flexibility;
- efficiency;
- individual workload;
- job description;
- qualification requirements;
- independence of users;
- social environment;
- degree of user satisfaction.

4.5 BILDSCHIRMTEXT PILOT TRAILS

Organisations

Various.

Funding bodies

Länder North Rhine-Westphalia and Berlin and Deutsche Bundespost.

Contact

Herr Gerhard Laubisch
Deutsche Bundespost
Arbeitsgruppe
Bildschirmtext
Stresemannstrasse 92
1000 Berlin 61
West Germany

Telephone

49 (30) 218 3302

Confidentiality of information

None.

The trial

This pilot trial is designed primarily to examine and promote the use of Bildschirmtext by 3,000 private households. However, one aspect of the trial which is relevant to business or office applications concerns the ability that up to 50 IPs have to set up closed user groups (CUGs).

Equipment

Viewdata editing terminals with a colour TV suitable for Bildschirmtext. In some cases, IPs will have facilities for data processing and for storing and printing pages.

Evaluation

Evaluation will be in terms of the use made of these closed user groups and the number that are set up.

4.6 OPTICAL CHARACTER READING AND WORD PROCESSING IN THE TYPING POOL OF THE EUROPEAN PARLIAMENT

Organisation

European Parliament.

Funding body

EEC.

Contact

P. Bianchessi
4-12 Shuman Building
European Parliament
Luxembourg

Telephone

352 4300 1.

Confidentiality of information

None.

The trial

Start date

(Planned 1/1/1982), Actual 1/5/1982.

End date

1/5/1983.

Number of sites

One; typing pool.

Number of users

There are 350 typists in total in the typing pool. Three types and grades of people will be involved in the trial:

16 typists	-	grade C
3 typist supervisors	-	grade B
1 trouble shooter	-	grade C

Responsibilities

Secretarial.

Equipment

1 OCR B reader (Formscan)
1 shared logic word processing system (Wang OIS 140)
8 work stations (1 per EEC language)
Printers

Purpose

Text will continue to be typed in the normal way in the typing pool. However, if any corrections or changes are necessary, this text will be read by the OCR and the corrections made using the Wang workstations.

Aims and objectives

It is hoped that the OCR will absorb the work of 30 typists. However, problems are foreseen with personnel and unions and the trial will also examine the best way of introducing such technology. If successful the trial will be extended to cover the whole typing pool involving 50 to 80 workstations.

The objectives are:

- find out whether OCR technology combines the advantages of traditional electronic typewriters (flexibility, low price and no special skills needed) with the advantages of word processing (re-editing, archiving etc);
- explore the technical and organisational problems connected with word processing in a multi-lingual environment (seven languages);
- familiarise typing pool personnel with word processing practices and study their reactions from the ergonomic point of view.

Evaluation

No special evaluation tools have been designed so far. A working group meets once a month. Its main task is to report on feed-back from users (both direct users such as operators and indirect users such as translators) and help the project leader identify and solve problems.

Since increases in productivity are not the main objective of the project, little attention is given to activity measurements. No questionnaires are planned.

4.7 TRIAL OF PORTABLE TEXT EDITING TERMINALS IN THE CR (COMPTE RENDU) DIVISION OF THE EUROPEAN PARLIAMENT

Organisation

European Parliament.

Funding body

EEC.

Contact

P. Bianchessi
4-12 Shuman Building
European Parliament
Luxembourg

Telephone

352 4300 1

Confidentiality of information

None.

The trial

Start date

1/1/1982.

End date

1/4/1982.

Number of sites

One; Parliament.

Number of users

Four typists, grade C.

Responsibilities

Typing.

Equipment

Portable terminals (BOBST SCRIBE).

Purpose

Typists enter text directly into the system, via their keyboards. This text is transmitted via the public switched telephone network to the phototypesetting facilities of various printers. This would avoid having to enter the text twice and proof read it twice. Once at Parliament and once at the printers.

Aims and objectives

The main aim is to save both the manpower and time spent keying the minutes of Parliament proceedings. At present the text is typed by the translators and then is re-keyed by the printers themselves. It is hoped that this pilot system will result in text only being keyed once, thus allowing the printed documents to be produced overnight.

The objectives are:

- to find out whether urgent texts (wanted within 24 hours) can be typed, edited and tele-transmitted to a printer's shop where they can be automatically fed into a photocomposition system;
- to explore the problems connected with a multilingual usage of the system (a previous pilot only dealt with Greek and Danish text);
- to explore ergonomic and organisational aspects.

Evaluation

No formal evaluation tools were used, because of the small size of the pilot group. Evaluation meetings were held whenever it was felt necessary.

4.8 COMAT (CABINET OFFICE MANAGEMENT AID TRIAL)

Organisation

Information Technology Unit, UK Cabinet Office.

Funding body

Department of Industry.

Contact

Adrian Norman
Cabinet Office
70, Whitehall
London SW1A 2AS
England

Telephone

44 (1) 233 7758

Confidentiality of information

None.

The trial

Start date

1/5/1982.

Finish date

1/5/1984.

Number of sites

One.

Number of users

Four professional administrators and three secretaries.

Responsibilities

Coordination of UK Government's Information Technology policy.

Equipment

Seven Xionics workstations (VDU + keyboard) linked by a LAN to a central database store.

Facilities

Text creation, editing, storage and printing. Full text searching of information, text messaging between workstations, voice messaging and annotation (planned for October 1982), viewdata interface (planned for November 1982), teletex (planned for December 1982), PSS Interface (planned for March 1983) and Encryption of stored data (planned for March 1983.)

Aims and objectives

The trial is sponsored by the UK Department of Industry whose main objective is that the Cabinet Office will consider that the trial is a success and will wish to continue to use the equipment. Other secondary aims are that this trial will improve and serve to illustrate the performance of UK suppliers of office automation equipment.

The users' main objectives are:

- better quality and quicker production of documents;
- greater sharing of information and greater re-use of existing material in new documents;
- elimination of lost and mis-filed documents;
- less retyping by secretaries and an enrichment of their work.

The Cabinet Office's main objectives are:

- to identify and evaluate the problems, disadvantages and costs associated with introducing the system;
- to assess the operational and organisational implications, user reactions and staff requirements.

Evaluation

Methodology:	The success of the pilot trial is measured in terms of the fulfilment of each of the aims and objectives defined beforehand. These aims and objectives are investigated by measuring the relevant activities, attitudes and organisation of the users during five snapshots. One snapshot took place one month before the implementation of the equipment and the others are proposed to take place four, 9, 17 and 22 months afterwards.
Timing:	Five snapshots of three weeks each.
Evaluation tools:	All the principals complete project and daily logs over a two week period. These record the users' activities and the frequency of the difficulties they encounter. Typing tags and typing pool logs monitor all the typing done by the secretaries. They record the number and duration of every piece of typing and proportion of original work to minor and major corrections. Every member of the Unit and some of its major 'clients' are interviewed using questionnaires which, are designed to investigate the users' work patterns, attitudes to office automation and the problems they encounter in their work. Logs are continually completed in the Unit which record the number of incoming and outgoing hard copy documents.

The equipment itself will monitor the use made of it in terms of the number of records created and stored on the system and the number of messages sent between users.

The results

The conclusions drawn from the first snapshot held prior to the implementation of any office automation equipment refer mainly to the activities of the office and how these differ to what was assumed to happen before any actual measurements were taken.

Some difficulties which had been put forward as being very important by the users' themselves were found to occur only rarely. Such difficulties were:

- problems with lost or mis-filed files;
- out of date information contained in contacgs lists etc;
- the users were found to have a greater degree of control over their work patterns than they had feared. Sequential stages of a task were carried out according to plan;
- the number of missed deadlines was also found to be very small during the period of the snapshot.

The size of the differences between the individuals' workstyles surprised the researchers and the users themselves. It may be more informative, in such a small group, to compare individuals' activities and performances at different snapshots rather than compare the aggregate figures.

4.9 PILOT PROJECTS IN OFFICE SYSTEMS AND INFORMATION TECHNOLOGY

Organisation

British Rail Engineering Limited (BREL).

Funding body

Department of Industry.

Contact

Hylton Craig
British Rail
11 Tavistock Place
London
England

Telephone

44 (1) 387 9400 (ex. 2047)

Confidentiality of information

None.

The trial

Start date

10/1982 for text editing and creation;
12/1982 for management aids and electronic mail;
6/1983 local and remote site communications;
1983 for voice facilities.

Finish date

10/1984.

Number of sites

Three sites, Derby, Doncaster and London.

Number of users

There are five groups of about 40 users in total:

a. Business Systems Department;
b. six Executive directors and seven Senior managers at Headquarters;
c. secretaries also at Headquarters;
d. one Works Manager, one Production Manager and typists at the remote engineering works at Doncaster;
e. British Railways Board in London.

The Business Systems Department's role is to test and develop the system before it is introduced throughout trial.

User status

	%
Managers	55
Professionals	2.5
Secretarial	32.5
Clerical & other support staff	10

Responsibilities

Repair and manufacture of railway locomotives and rolling stock on a commercial basis.

Equipment

Business Systems Department

3 OTL Principal workstations

1 OTL Secretarial workstation

1 letter quality printer

1 x 160 Mbyte store

Headquarters

13 OTL Principal workstations

6 OTL secretarial workstations

6 letter quality printers

2 x 160 Mbyte store

Doncaster Works

2 OTL Principal workstations

2 OTL secretarial workstations

2 letter quality printers

1 x 160 Mbyte store

Headquarters will be linked to the Doncaster works by the system. A link to London will also follow in the future.

British Railways Board

2 OTL Principal workstations

2 OTL secretarial workstations

Facilities

Text creation, editing, storage and printing;

Technical information retrieval system;

Internal voice and text messaging;

Appointments diary;

Voice annotation of text;

Calculator.

Aims and objectives

The main objectives are:

- improved availability of information;
- improved communications;
- reduced administrative delays;
- reduced paperwork;
- electronic information distribution with immediate delivery.

Evaluation

Methodology: (same as for all DOI sponsored sites). The success of the trial is measured in terms of the fulfilment of the above aims and objectives.

Timing: One snapshot took place in June 1982 prior to the implementation of the equipment and four others are planned at various stages throughout the two year trial period.

Evaluation tools: Information gained at each snapshot will be of five types:

- Attitude of users - obtained by means of interviews and questionnaires.
- Attitude of clients - obtained also by means of questionnaires.
- Activity analysis - concentrating on the early stages of document production and the life cycles of documents.
- System performance - maintenance logs, system monitoring software and benchmark tests.
- Organisation review - to establish the organisational context in order to understand the significance of information obtained via the above methods.

4.10 PILOTS (GLC)

Organisation

Scientific Branch of the Greater London Council (GLC).

Funding body

Department of Industry.

Contact

Sam Radcliffe
County Hall
London SE1
England

Telephone

44 (1) 633 6222.

Confidentiality of information

None.

The trial

Start date

4/1982 stand alone word processors;
6/1982 word processor network;
9/1982 advanced workstations;
3/1983 external communications.

Finish date

6/1984.

Number of sites

One.

Number of users

130.

User status

	%
Managers	15
Professionals	71
Secretarial	2
Clerical & support staff	12

Responsibilities

To provide scientific information and advice to the members of the Council, council departments, London Boroughs and the Fire Brigade.

Equipment

23 Rank Xerox 860 terminals, 4 Rank Xerox 8010 advanced workstations - plus two printers (840 and 845), file servers and the ethernet local area network (10MB coaxial cable).

Facilities

- electronic message system;
- mailbox facility for messages;
- word processing for creating and editing documents;
- diary facilities;
- task monitoring system;
- vehicle fleet management system;
- forms facility for completion of standard forms and letters;
- mathematics capability for standard unsophisticated calculations;
- information retrieval system;
- graphics production facilities;
- external communications.

Aims and objectives

The main objectives are:

Quantifiable savings

- reduction in cost of producing scientific and administrative reports;
- reduced overheads;
- elimination of duplicated information systems.

Improved effectiveness

- efficient processing of administrative work;
- reduction of non productive activities;
- fewer interruptions to professional and administrative staff.

Additional information

- greater availability of information;
- more rapid provision of information and opinions;
- establishment of common information systems;
- greater awareness about current activities and progress of tasks;
- faster and more effective feedback.

Less quantifiable benefits

- faster response to enquiries;
- more effective management control;
- more effective use of managerial, professional and administrative time;
- faster and more responsive methods of communication;
- improved systems of branch and financial control;
- on-line contributions to problem solving;
- higher and more consistent quality of documents;
- greater coordination between multiple work programmes;
- experience in the use of advanced communications systems.

Evaluation

Methodology:	(same as for all DOI sponsored sites). The success of the trial is measured in terms of the fulfilment of the above aims and objectives.
Timing:	One snapshot took place in June 1982, prior to the implementation of the equipment, and four others are planned at various stages throughout the two year trial.
Evaluation tools:	The main measurement technique will be asking users about particular problems identified in daily activity logs. Attitude questionnaires will also be used. System logging facilities are available on the equipment.

4.11 PILOTS (ECGD)

Organisation

Export Credits Guarantee Department.

Funding body

Department of Industry.

Contact

Mick Long
Export Credits Guarantee Department
Aldermanbury House,
Aldermanbury
London EC2P 2EL
England

Telephone

44 (1) 606 6699

Confidentiality of information

Total: Trial has not yet been officially announced.

The trial

Start date

7/1982.

Finish date

7/1984.

Number of sites

One.

Number of users

60-150 users in one division (PD2) of the ECGD.

User status

	%
Managers	25
Underwriting officers	60
Clerical & other support staff	15

Responsibilities

To guarantee credits to firms exporting goods from the UK.

Equipment

40-100 GEC 4000 series viewdata terminals;

3 AB Dick Magna screens;

6 Xerox 850 word processors (already installed).

Facilities

- automatic updating of information on viewdata system using existing documentation;
- user updating of viewdata information at their own terminals;
- shared wordprocessing system;
- editing of wordprocessed text using users' own viewdata terminals;
- display of notices using viewdata;
- mailbox facilities for senior staff;
- access to information at remote computers.

Aims and objectives

The main objectives are:

- to increase effectiveness of officers generating export credits;
- to reduce backlogs of work;
- to enable reports to be generated by the users themselves;
- to increase communication between officers;
- to make information more easily available.

Evaluation

Methodology:	(same as for all DOI sponsored sites). The success of the trial is measured in terms of the fulfilment of the above aims and objectives.
Timing:	One snapshot took place in June 1982, prior to the implementation of the equipment, and four others are planned at varous stages throughout the two year trial period.
Evaluation tools:	Measure the size and numbers of reports produced. Record users' daily activities. System logging of numbers of frames accessed and generated. Attitude questionnaires.

4.12 DOI/REDIFFUSION PILOT

Organisation

Department of Industry.

Funding body

Department of Industry.

Contact

Mike O'Connor
Sanctuary Buildings
Great Smith St
London
England

Telephone

44 (1) 215 3609

Confidentiality of information

None.

The trial

Start date

1/9/1982.

Finish date

1/9/1984.

Number of sites

One; Department of Industry, Information Technology Division.

Number of users

32 in first year; 60 in second year.

User status

	%
Managers & professionals	50
Secretarial	20
Clerical & support staff	30

Responsibilities

To sponsor and monitor the progress and development of the British computer industry.

Equipment

22 viewdata terminals (rising to 64 in second year) each with a keyboard and in clusters of four, linked via a multiplexor to a central mini computer and filing system; printers.

Facilities

Creation, editing, storage and printing of text, filing and retrival of text, text messaging, diary functions, calculations - and at a later stage - external gateway to viewdata, external electronic mail, telex, teletex and OCR; DP; voice annotation and voice-mail; access to system via small remote portable terminals.

Aims and objectives

The main aims are:

- to reduce the effort required to process the division's typing work;
- to increase the speed and accuracy with which information can be retrieved;
- to increase the frequency of communication between the users;
- to speed the production of reports and memos.

Evaluation

Methodology: The success of this trial, as with all the DOI sponsored trials will be measured in terms of the fulfilment of the aims and objectives.

Timing: Five snapshots, one of which will take place a month prior to the implementation of the equipment and the others at various stages throughout the two year trial.

Evaluation tools: Using interviews estimates of the following activities will be obtained from each user:

- volume of typing and the number of drafts involved for each type of document.
- the number of documents received and generated by the pilot group.
- the number of external and internal phone calls.
- the number of files maintained by each pilot section the rate of retrieval and per cent of documents which originate from outside the pilot group.
- the number of, and time spent in, different types of meetings and the time spent arranging them.

- the amount of time spent reading.
- the organisation the pilot group.
- the attitudes of the pilot group towards the equipment.

4.13 PILOTS (CCC)

Organisation

Cambridge County Council.

Funding body

Department of Industry.

Contact

Jack Barton
County Treasurer
Cambridge County Council
Shire Hall
Cambridge
England

Telephone

44 (0223) 358811 (Ex. 423).

Confidentiality of information

None.

The trial

Start date

Summer 1982.

Finish date

Summer 1984.

Number of sites

Three; Fire and Rescue Headquarters in Cambridge, Shire Hall (Location of present manframe computer) in Cambridge and the Social Services Department in Huntingdon.

Number of users

Unknown.

User status

Mainly secretarial and clerical.

Responsibilities

The production of standard fire safety certificates, reports and statistics. To deal with matters relating to residential accommodation, home helps and children in care.

Equipment

Fire and Rescue HQ

2 IBM displaywriters

Social Services Department

1 IBM displaywriter

1 IBM 8100 processor

Various terminals, such as:

- 3270 DP terminal
- 3732 word processing terminal
- 8775 combined DP/word processing terminals

Printers

Shire Hall

A leased line will connect the mainframes (IBM 370/138 and 4331) at Shire Hall to the Social Services Department.

Facilities

- text creation, editing, storage and printing;
- DP and calculation of statistics;
- voice and graphics facilities may be added at a later stage.

Aims and objectives

The main aims are to:

- produce savings which exceed costs;
- gain staff acceptance of new technology;
- reduce production and movement of hard copy documents;
- improve management control of the council's services;
- make more effective use of people and equipment.

Evaluation

The exact form of the evaluation exercise has yet to be established. However it will be of a similar standard and form to those methodologies used in other DOI sponsored sites.

4.14 VISUAL SERVICES TRIAL (VST) AND THE EUROPEAN VIDEO EXPERIMENT

Organisations

Various.

Funding body

British Telecom.

Contact

Dr. Norman Kenyon
British Telecom
Centre for Visual Telecom
Martlesham Heath
Ipswich, Suffolk
England

Telephone

44 (0473) 643909

Confidentiality of information

None.

The trial

Timing

One year trial starting in 1983. (Although a couple of user organisations will start in November 1982).

Number of sites

Main sites are London, Nottingham, Middlesborough, Glasgow and Liverpool.

Number of organisations

20 organisations (+ five system X manufacturers), 50 to 60 sites (two sites per organisation except for in three cases, when three to five per organisation).

Number of users

Unknown; white collar, but definitely not only very senior personnel.

Equipment

12 inch monochrome monitor; two cameras (one for view of two or three participants/site and one for documents); analogue signal is converted by STC codec and routed via trunk switches and two Megabit digital links. Local distribution in some cases via microwave. Codecs are shared between users at each major site.

Facilities

- monochrome video teleconferencing (conditional replenishment of changing parts of visual image);
- Prestel interface;
- booking of codecs via viewdata over system;
- facsimile and freeze frame, if required (using part of audio channel or advanced multiplexors which take advantage of when there is little visual change). Colour will be provided, if requested and paid for.

Aims and objectives

It is hoped that after the year long trial users will opt to use the equipment while paying for the terminals and call charges. Patterns of usage will be examined so that British Telecom can plan the size of a network which would rarely become congested.

The costs will be about £1,000 to £8,000 for a monitor and terminal and £60 to £80 per hour for a typical connect charge, depending on the quality of equipment required and the level of usage. Overall, an organisation can expect to pay on average £20,000 per year for 200 hours of use.

It is anticipated that between 100 and a 1,000 organisations will eventually have the equipment installed.

Evaluation

The terminal is provided with a number of facilities, such as:

- zoom lens;
- separate documents camera, for articles placed on the desk;
- ability to switch off one's audio output;
- ability to switch off one's camera output.

Monitoring equipment encorporated in the system will measure the use made of such facilities. It is anticipated that a final version would not require all of them and thus the more useful need to be selected.

Independent researchers will interview senior personnel and the major users within each organisation in order to calculate:

- cost savings in terms of reduced travel and time saved;
- the correct marketing which should be adopted within an organisation to get people to use the equipment.

In addition control organisations will also be interviewed which do not have the equipment. Interviews will also be carried out when users begin to be charged for the equipment.

The future

A similar line of research, running in parallel to this work, is the European Video Experiment involving the following countries:

UK	Also building codecs
France	
Italy	
West Germany	
Holland	
Sweden	
Belgium	

University based groups and PTTs are developing a standard for codecs which will allow two Mbit monochrome video-teleconferencing via satellite (OTS and, in the future, ECS and Telecom 1). On the last week of each month the first three countries successfully conduct teleconferences using such equipment. West Germany is, at present, not linked via satellite. The research is still at a working but developmental stage. However, in 1983, organisations taking part in the VST will also be able to hold conferences throughout Europe.

4.15 WORD PROCESSING BY COMPUTER

Organisation

Department of Education and Science, Darlington.

Funding body

Department of Education and Science.

Contact

W. Diggens
Central Computer and
Telecommunications Agency (CCTA)
Riverwalk House
157/161 Millbank
London SW1P 4RT
England

Telephone

44 (1) 211 3000

Confidentiality of information

None.

The trial

This trial is included, even though it was completed some time ago, because the evaluation methodology was thorough and because it was the first stage in a continuing programme of research involving the CCTA. Details of later research organised by the CCTA is described in the next section.

Start date

10/6/1977.

Finish date

28/7/1978.

Number of sites

One; the word processing pool at the Department of Education and Science.

Number of users

The typing pool consisted of:

10 copy typists
4 audio typists
2 shorthand typists
2 specialist typists
1 superintendent
1 senior superintendent

Responsibilities

The production of documents and letters.

Equipment

A control group of five typists continued to use the types of equipment previously available i.e.:

4 electric typewriters
1 dual magnetic tape cassette automatic typewriter.

The pilot group used a Wordplex shared resource word processing system consisting of:

1 wordplex 7 central processor with 64K byte store;
2 Disc storage units @ 40M byte each;
5 Input keystations with VDUs;
2 Qume "daisy wheel" printers;
1 stand alone Wordplex-1 word processor.

Costs

	£
Equipment	65,000
Maintenance (pa)	6,000
Additional support staff	4,000

Facilities

Creation, editing, storage and printing of text, standard letters, forms and distribution lists.

Aims and objectives

The main objective was to study the effect of introducing computerised word processing for the range of work performed in a Government typing pool.

Evaluation

Methodology: The average output of the whole typing pool, taken over a five month period prior to the introduction of CWP, was compared to that afterwards.
The output of the control group per typist was compared to that of the pilot group.

Results

Main conclusions were:

- documents can be altered, but not drafted, significantly faster on a word processor than on a typewriter. Individual rates of output ranged from 40 to 200 per cent higher than that previous to the pilot. This depended on the extent of amendment and on operator aptitude;
- the pool showed overall gains varying between 10 and 70 per cent depending on the work-mix. This only became evident after six months had elapsed;
- use of standard text (whole letters and paragraphs) led to productivity gains well in excess of 100 per cent;
- on general correspondence prepared from shorthand notes or written drafts, CWP did not demonstrate any advantage over electric typewriters. However, audio typing was found to suit CWP;
- cost savings could only be enjoyed if the size of the trial was increased.

Personnel considerations included:

- ADP/O & M resources were required throughout the trial;
- training is vital;
- operators may produce useful work within a few days, however, the learning and familiarisation curve may take months to level out;
- selection of operators by aptitude is desirable;
- staff reaction to the CWP system was widely, but not unanimously, enthusiastic. The total separation of the printing function from typists was accepted and it was found possible to rotate the task of acting as a print controller within a group of typists;
- problems with software have a profound and lasting effect on both morale and output.

4.16 STAND-ALONE WORD PROCESSORS

Organisations

UK Public Sector Organisations:
Overseas Development Administration
Ministry of Defence
Office of Population Census and Surveys
Inland Revenue
Welsh Office
Department of Trade

Funding bodies

The same.

Contact

W. Diggens
Central Computer &
Telecommunications Agency (CCTA)
Riverwalk House
157/161 Millbank
London SW1P 4RT
England

Telephone

44 (1) 211 3000

Confidentiality of information

None.

The trial

Start date

3/6/1979.

End date

3/6/1980.

Number of sites

Six; two in London, one in Surrey, one in Hampshire and two in Cardiff.

Number of users

For each site:

4-5 typists using word processors;
4-5 typists using standard electric typewriters (the Control Group).

A total of 62 typists (six left during the course of the trials, five of which because of unrelated reasons i.e. promotion or resignation).

Responsibilities

Typing.

Equipment

Stand-alone word processors:

4 x Data Logic VT1202 (22 line display)
4 x Rank Xerox 850 DTS (1 line display)
3 x Rank Xerox 850 PDS (40 line display)
4 x Addressograph Multigraph (54 line display)
4 x IBM System 6 442/452 (6 line display)
4 x Data Recall Diamond 4 (26 line display)
Data Recall Diamond 3 (26 line display)

Facilities

Word processing only.

Aims and objectives

The main objectives were:

- to evaluate the effect on typing productivity of stand-alone word processing;
- to determine whether the use of such equipment is cost effective by comparison with standard electric typewriters and automatic typewriters.

The addition the trials looked at:

- operational and organisational aspects;
- environmental and job satisfaction characteristics;
- training requirements of typists and supervisory staff;
- the role of supervisory staff;
- the general factors bearing upon selection of staff to use WP's;
- the impacts of WPs on authors and their relationship with WP pools.

Evaluation

Individual and group figures for output and the proportion of time spent on each type of work were collected weekly. Comparisons were made between each typists' performance using a word processor and an electronic typewriter.

Questionnaires were completed by typists and authors. These gauged the reactions of the staff involved in the trial.

In addition, at the end of the trials, group discussions and seminars helped assess the operational, organisational and human aspects.

The results

A full description of the results may be obtained from the report written by the CCTA. The results are summarised below:

- increases in typing productivity of between 43 per cent and 72 per cent are needed in order to cost justify use of word processors;
- mean productivity improvements of this order were not achieved, on day to day work by, the majority of operators;
- gains of 50 per cent were achieved on a mixture of standard text and long report work by the five most proficient WP operators;
- the operators most likely to be successful using WPs are those who perform best using electric typewriters for amendment typing;
- a high percentage of typists found WPs satisfactory and wanted to continue using them. Only 4.7 per cent were dissatisfied and only 7.0 per cent did not want to use a WP again;
- in conclusion, selection of work and operators is of great importance. If WP operators are carefully selected and properly trained, WPs can be justified for multi-draft textual and tabulation material, and for standard text work.

4.17 CORAIL

Organisation

Thomson CSF, Information and Business Communications Systems Group: Fr1.5 billion turnover in 1981 for group alone; 5.5 thousand employees in group.

Funding body

Thomson CSF.

Contact

M. Verges
Deputy Director
Marketing and Planning
Information and Business
Communications Systems Group
Thomson CSF
24 Rue de Courcelles
Paris 8
France

Telephone

33 (1) 563 1212.

Confidentiality of information

None.

The trial

The Corial system has only been sold to one or two organisations since being recently released. These sites have not introduced the system on a pilot basis nor have any evaluation exercises been planned. However, we have included details of the trial at Thomson CSF itself and, as more systems are introduced, details of any pilots trials may be added.

Start date

1/1982.

Number of sites

One; Direction Industrielle.

Number of users

200 (500 by the end of the year). Mainly professioanls. Secretaries will begin to use the system, only when a training scheme has been designed.

Responsibilities

Preparation of papers comparing the company's own products to those of its competitors.

Equipment

Multifunction workstations (High resolution VDU, Keyboard and 30 Mbytes storage on a rigid disc).

Groups of 16 workstations are connected via ethernet (LAN) to microcomputers and minicomputers.

The ethernet is connected via a gateway to the company's main frame computer and a 64 Kbs digital PABX.

The PABX may be connected to external databases, facsimile etc.

Costs

A stand-alone workstation costs about Fr50,000 while a complete system of ethernet and 12 worksations may cost about Fr5,000,000.

Facilities

- information storage and retrieval;
- DP.

And in the future:

- WP;
- graphics processor (in five to six years);
- storage and retrieval of up to 20,000 pages of graphics or 50,000 pages of text;
- external communications to other host computers.

Aims and objectives

The main objectives are:

- to increase efficiency and decrease communications costs by decentralising DP functions;
- to ease the workload of the host computer and thus reduce the times spent waiting to use it;
- to improve security;
- to be able to reduce the cost of the system;
- to improve the system's facilities.

The evaluation

Feedback will be mainly verbal and informal. Improvements or changes to the system will be made mainly on the basis of this feedback.

Use made of each of the various functions will be monitored by the system.

There will be more formal evaluation procedures when the secretaries are using and are accustomed to using the service.

The proposed expansion of the trial system to involve 500 users will not depend on the results of this evaluation exercise.

Comments

Thomson CSF feel that in the UK, for instance, too much time is "wasted" evaluating the benefits or effects of introducing a system or service. Instead their emphasis is on marketing the right facilities in the right places.

14.18 NATIONAL WESTMINSTER BANK PILOT SCHEME

Organisation

National Westminster Bank PLC.

Funding body

National Westminster Bank PLC.

Contact

Brian Keyte
Senior Executive
Planning and Development
National Westminster Bank PLC
Management Services Division

Telephone

44 (1) 726 1777

Confidentiality of information

None.

The trial

Start date

Phase 1: 5/1981: Phase 2: 10/1982.

Finish date

Phase 1: 5/1982: Phase 2: 10/1983.

Number of sites

Phase 1: One branch and then, two branches;
Phase 2: 51 branches in same area (Epsom, Surrey).

Number of users

Each person in the branch has his, or her, own workstation (VDU and keyboard).

User status

All grades (managerial, clerical and secretarial).

Responsibilities

Maintainance and use of customer's records for the purpose of lending and control of accounts.

Equipment

Phase 1: IBM 8100 system, VDUs, keyboards and printers;
Phase 2: 51 x IBM 8100 systems, VDUs, keyboards and printers.

The Branch Processors will be linked to the Bank's main accounting system, maintained at its central computer centres.

The total value of the equipment is nearly £3 million.

Facilities

Information retrieval and production of standard forms.

Electronic mail will be feasible when more than one branch is equipped with a system.

Aims and objectives

The system is expected to provide assistance in the following areas:

- lending and control of accounts;
- marketing;
- general data inquiries for personalisation and customer identifications;
- automatic production of some forms such as credit advices, enclosure letters and notices of unpaid charges.

The objectives are:

- to measure the degree of assistance such a system gives to the staff in carrying out the above tasks;
- to identify any changes to be made to the system;
- to establish how the operation of the system may be designed so that branch staff do not have to acquire computer skills;
- to identify any other functions which could be added in the future;
- to identify how these systems could interface with each other and area and regional offices.

Evaluation

Much of the evaluation was based on the subjective judgement of the users.

The objective measurement of productivity and increases in productivity will be attempted when more branches have systems.

Results

- computer based records are manageable;
- productivity has improved;
- users of all grades have no problems using the system;
- the system is easy to use with all commands being menu driven;
- at present not all records are kept on the computer, but in the future more will be maintained in electronic form rather than hard copy.

4.19 SEGAS TRIAL

Organisation

Segas. 10,700 employees, £500 million turnover.

Funding body

British Gas Corporation.

Contact

Alf. C. Collins
Director of Corporate
Planning & Management Services
South Eastern Region
British Gas Corporation
Katherine House
Katherine St.
Croydon CR9 1JU
England

Telephone

44 (1) 688 4466

Confidentiality of information

None.

The trial

Start date

1982.

Number of sites

Nine; HQ, three major sites and five minor sites.

Users

All grades, executives, clerks and typists.

Responsibilities

Various.

Equipment

There are at present four systems with little or no communication between it:

- Decision Support System ; Amdahl V8 computer and 150 VDUs;
- Information support system (Viewdata) - Amdahl V7 computer and 1,100 VDUs;
- Administration support system - Wang VS computer and 60 VDUs.

In addition there are:

- two Wang OIs;
- six Wangwriters;
- 50 Apple IIs.

Facilities

- Word processing;
- Electronic mail (late 1982);
- Financial budget and planning models;
- Voice messaging and annotation of text (in the future);
- Diary management (1982);
- Personal filing of information (1982);
- Keyword retrieval of information (1982).

Aims and objectives

During the trial the existing systems will be linked together allowing information to be both entered and retrieved from any workstation.

The objectives are:

- to improve the productivity of typists;
- to improve the handling of information;
- to provide facilities enabling management to be more effective;
- to enable office operations to be more efficient and cost effective;
- to ascertain which types of facilities would best serve various levels of management;
- to be able to identify productivity improvements and quantitative benefits which will assist both the design of the system and give a firm basis for justification in future years.

Evaluation

Evaluation will use measures of how an individual uses his time and will look for time saved on less productive activities.

4.20 THOMSON COMPUTERISED AGENT RESERVATION SERVICE (CARS)

Organisation

Thomson Holidays (Travel Agency).

Funding body

Thomson Holidays.

Contact

Doug Goodman
Press Office
Thomson Holidays
Greater London House
Hampstead Rd,
London NW1 7SD
England

Telephone

44 (1) 387 9321.

Confidentiality of information

None.

The trial

Start date

3/1981.

Finish date

3/1982.

Number of sites

66 independent travel agents.

Equipment

Videotex terminals with Prestel Interfaces (Philips 14" and Sony 9" or 14") connected via Master System's Videotex 1200 bps modems to a regional network concentrator (RNC). This microcomputer was designed by Microscope Limited and built by Newbury Labs. It consists of five 64 Kbyte 280A microprocessors, one master and four slaves. Each slave board supports four videotex ports, 24 and 32 port versions are planned.

The RNC is connected to the company's main booking computer (TRACS). There are plans for at least 17 RNCs offering a total of 272 videotex ports.

Facilities

- booking of holidays, car hire etc;
- searching for availability of holidays etc, using price, locations or length of holiday;
- up to date information about particular holidays;
- travel agents are prompted by the system for the booking details.

Aims and objectives

The main function of the trial was:

- to learn about the practical and technical aspects of linking videotex screens with a booking system maintained on a computer (IBM 370/158).

Other objectives were that the system should:

- be comprehensive and easy to use, following Prestel user standards;

- appeal not only to the travel agent, but also to the client with whom the agent is dealing (i.e. it should be a powerful selling tool for Thomson);
- offer a reliable and fast service;
- improve travel agents' access to Thomson;
- keep travel agents' costs to a minimum;
- where possible, offer standard communication interfaces;
- allow for Thomson's continued expansion plans and aid the further reduction of administration costs per holidaymaker.

The results

The trial was a success. The level of business of all the trial agents did with Thomson over the period went up significantly. One agent was reported to have increased Thomson bookings by 120 per cent during the year. Three out of four of all his deals were made via the system.

All the agents liked using the system and preferred it to the previous procedure using normal telephone calls to the operators.

Starting in September and October 1982 Thomson went ahead with a full scale introduction of the technology. The Thomson Open-Line Programme (TOP) will at first involve two thousand agents but, eventually, five thousand agents.

4.21 PRICE WATERHOUSE'S PILOT WORD PROCESSING TRIAL

Organisation

Price Waterhouse Associates. 1,500 staff in the London Office.

Funding body

Price Waterhouse Associates.

Contact

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Confidentiality of information

None.

The trial

Start date

8/1/1980.

Number of sites

One.

Number of users

Two departments.

Equipment

15 word processing workstations.

One department was equipped with stand-alone machines, while the second department operated a shared facility system.

Facilities

Word processing using large volumes of standard or re-usable text.

Aims and objectives

The terms of reference for the study were:

- to assess the firm's secretarial support requirements in the light of recent developments in word processing equipment;
- to make recommendations on the quantity and type of equipment required to meet its needs;
- to make an assessment of the costs and benefits that might be expected from the use of word processing equipment;
- to identify the organisational and other implications of installing word processing equipment.

Evaluation

Questionnaires were used to assess the volume and nature of the work done in the office. It was expected that word processing would not only benefit the simple production of typescript,but also help make more effective utilisation of professional and managerial staffs' time. The questionnaires covered not only the volumes of inputs and outputs of documents but also the form in which material was submitted for typing (dictation, manuscript or shorthand) and other characteristics such as urgency, quality and use of standard text. It examined the ways in which secretaries, managers and professional staff spend their day and peoples' satisfaction with the present secretarial service.

Results

The lessons learned carrying out the pilot trial were as follows:

- An initial fact finding or feasibility study is of great importance. There is a tendency to assume that the problems are relatively simple, the organisational structure is well understood and the nature of the work is self evident. However, this is not true. It is necessary to first establish from research the types and quantities of equipment required, the basis upon which software is to be evaluated, any organisational alternatives and the most appropriate areas for a pilot study.
- Properly prepared benchmark tests, using examples of an organisations own real work are important for drawing distinctions between the various available suppliers' systems.
- When assessing word processing equipment, technical excellence is not the only important factor. Equally important is after-sales support (maintenance, training, software etc) and the ease with which the organisation's secretaries may operate the equipment and be trained to use it.
- The credibility of a systems both with secretaries and authors relies on the speed and quality of support given during the trial by a team of people within the organisation overcoming any teething troubles.

- There should be a careful monitoring of all the costs incurred including costs of training, consumables, software etc.
- The technology now available is effective and may be cost justified. However, it must be recognised that a decision to use word processors is in no way analogous to deciding to purchase an improved form of typewriter. The decision is of much more fundamental importance.

4.22 COATS PATON'S PILOT WORD PRCESSING TRIAL

Organisation

Coats Paton.

Funding body

Coats Paton.

Contact

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44 (041) 221 8711.

Confidentiality of information

None.

The trial

Start date

Phase 1: 15/12/1978: Phase 2: 1/1981.

Number of sites

Phase 1: One containing typing services and financial control departments.

Phase 2: Two. One containing the manufacturing department and the other containing typing services, financial control and commercial departments.

Number of users

Phase 1: About 20
Phase 2: About 30

Responsibilities

Typing.

Equipment

Phase 1: Typing services:

5 workstations (Logica's VTS100 and Wordplex);
1 top quality printer;
1 high speed matrix printer;
1 printer monitor screen;
1 Raytheon PTS 100 computer.

Financial control:

2 workstations;
1 top quality printer.

Phase 2: (Additional equipment):

Typing services:	2 workstations
	1 printer
Manufacturing:	2 workstations
	1 printer
Commercial:	2 workstations
	1 printer

Facilities

Word processing.

Aims and objectives

A number of problems had been identified:

- there was little coordination between the central typing pool and departmental typists;
- as a result departmental secretaries and typists were underworked when authors were away;
- managers were not connected to the dictation systems of the typing pool;
- existing IBM Magnetic Tape machines were unpopular and little used.

It was hoped that the introduction of word processing would help solve these problems and an aim was set to reduce the number of staff in typing services by 10 and in financial control by one. In addition it was hoped that the trial would answer two questions:

- how would word processing functions be organised?
- what type of equipment would be best for two large old buildings?

Evaluation

Typing surveys were carried out which used activity logs and duplicate copies of all work produced. An average number of lines typed per day was calculated. The shared logic word processing system provided daily statistics for the numbers of characters input and output.

Results

The numbers of characters input rose slowly during the trial. However, the numbers output increased from about 336 lines per workstation per day to about 820. It was estimated that about a third of the output was unnecessary. Other reasons for the increase were:

- the introduction of standard letters and paragraphs;
- the facility for drafting longer reports especially;
- when making corrections, pages are reprinted in full, rather than using white paint.

The attitude of typing staff to word processing has been enthusiastic. Savings in personnel were achieved through natural wastage.

Once authors have become used to the idea of drafts, they are generally keen on the system. This is especially true in the Financial Department where speed of turn round and good appearance of work was praised.

Continuous monitoring of input and output statistics enabled management to have better control over typing.

Typing efficiency of secretaries is less than that achieved by the typing pool and a significant proportion of their time is spent doing menial tasks.

5. SUMMARY AND RANKING OF TRIALS

As initially indicated in Section 1 of this report, we found that there were surprisingly few trials of office technology going on in Europe which met the selection criteria we proposed. The confidentiality of material is a major problem in this regard, as product manufacturers often do not want to reveal details of the performance and faults of developmental products, and end users may not want to publish information about their operations if it could be used to commercial advantage by their competitors.

For this reason the current set of pilot trials of office automation in public industries, being funded at least in part by the UK Department of Industry, is unique. By providing financial support to user organisations which would not otherwise be able to support such high levels of technology, the Department of Industry is providing a ready-made test-bed for the latest developments in office technology. The 'price' being extracted for this support is stipulated as the need for independent evaluation of the trials, and the right to publicise results. This approach contrasts with that expressed in some other European countries who believe that the UK is unnecessarily getting involved in trials and evaluations at a time when they should be aggressively selling the new products. Hence the representation of European trials is less than had been hoped.

The next stage of the Teldok programme as defined in the invitation to tender, is to make a preliminary selection of promising projects for further investigation. Although this activity is outside of the requirement for Stage 1, we have considered the projects described in terms of the main expressed objectives of the Teldok programme, i.e. that the pilot trials should include:

- novel technologies;
- real use of the equipment, albeit in a trial context;
- high quality of evaluation;
- independent evaluation, carried out by an independent body;
- the ability for Televerket to involve themselves in the design of the evaluation exercise.

Figure 2. Classification of Trials

	Very novel technology	Real use	Very high quality evaluation	Completely independent evaluation	Flexible evaluation
Project Kayak (1)	?				?
Teletex Service Trial (4)					?
COMAT (8)					
Pilot projects in office systems & information technolgoy (9)					
Pilots (GLC) (10)					
Pilots (ECGD) (11)					
DOI/Rediffusion pilot (12)					
Pilots (CCC) (13)					
Office of Patent Counsel Pilot (2)				X	X
Computer service for secretaries & managers (3)				X	X
Visual Services Trial (14)			X		X
Bildschirmtext Pilot Trials (5)			X	X	X
Optical character reading & word processing (6)			X	X	X
Trial of portable text editing terminals (7)			X	X	X
Word processing by computer (15)	X			X	X
Stand alone word processing (16)	X			X	X
Corail (17)			X	X	X
National Westminster Bank pilot scheme (18)			X	X	X
Segas trial (19)			X	X	X
Thomson computerised agent reservation service (20)			X	X	X
Price Waterhouse's pilot word processing trial (21)	X			X	X
Coats Paton's pilot word processing trial (22)	X			X	X

In figure 2, the 22 trials are ranked according to these criteria. Only eight trials score highly in every respect. Most of the other trials suffer from the fact that their evaluation, though good, was or is being carried out by either the equipment supplier or user organisation. One can not therefore guarantee the independence of the results since both groups may perhaps be motivated to ensure that the trial is a success and, furthermore, is seen to be a success.

With respect to the first eight trials, it is possible that Televerket would be able to contribute to the design of the evaluation. This would be Step 4 in the Teldok plan outlined in the invitation to tender.

They do also cover the range of technologies intended by Teldok, with the exception of teleconferencing, and a range of end-users (clerical to professional and managerial). The only limitation exists with the geographical spread of the trials.

TELDOK

Initiated by the Board of the Swedish Telecommunications Administration, the aims of TELDOK include:

- documenting, as early as possible, working applications of telecommunications systems, particularly for office use;
- publishing and distributing – when needed, also translating to Swedish – information on the use of telecommunications systems (particularly for office use), which might otherwise be difficult to obtain; and complete the information so as to increase its value to a Swedish audience and in a Swedish environment;
- study travel and conferences related to the documenting and distributing of information on working applications of telecommunicatons systems, particularly for office use.

On request, more information on TELDOK activities will happily be supplied by members of the TELDOK Editorial Board:

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