Teldok

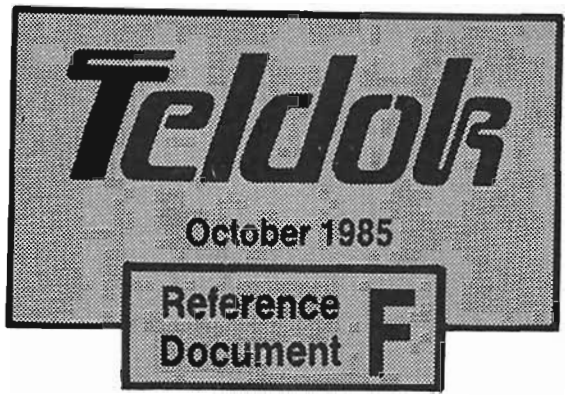
October 1985

Reference Document F

Office automation in Europe

An update of the survey in 1982/83

Reported by The Economist Informatics



Office automation in Europe

An update of the survey in 1982/83

Reported by The Economist Informatics

It is always very fascinating to monitor a lengthy process, such as the introduction and use of novel information technology in an office environment, during a relatively long time period. This has been achieved by Ian Young and his associates at the Economist Informatics.

This is an update of the survey carried out for Teldok by the Economist Informatics in 1982/83, describing several European Office Automation Pilot Trials. The first survey was published as Teldok Reference Document B: "Office Automation in Europe", February 1983. The update was completed on July 22, 1985.

We trust that you will gain from the insights on office automation usage that can be made from reading this case report. The update can be read or scanned just in its own right, but could also be viewed in context with the previous Teldok Report 14: "Informationsteknologi i Storbritannien", where incidentally meetings are reported with staff of the Economist Informatics.

In a few months, Teldok will issue a condensed Report, in Swedish, comparing and analyzing office automation experience within Europe -- as presented in this publication -- with that from Japan and the US.

Bertil Thorngren
Chairman of the Teldok Editorial Board

UPDATED SURVEY OF EUROPEAN OFFICE AUTOMATION PILOT TRIALS

CONTENTS

3. Computer Service for secretaries and managers: Siemens responded to a request for information by sending product literature. Thereafter there was no further response.

4. Optical character reading and word processing in the typing pool of the European Parliament and

5. Trial of Portable Text Editing terminals in the CR division of the European Parliament: Correspondence with a series of potential contacts, including the original contact, proved unfruitful. No further information was forthcoming.

6. Word processing by computer and

7. Stand-alone word processors: Both trials had already been completed at the time of the 1983 report.

8. Corail: There are major difficulties involved in drawing conclusions about the trials of the Corail B4000 system:

- as noted in the 1983 rpeort the system was not installed nor monitored on a pilot basis at Thomson CSF in 1982

- no evaluation exercises were formally introduced upon installation

- in 1983 Thomson CSF sold all their EDP interests, including the Corail B4000 system to Bull, making The Economist Informatics' research into the suppliers' own information trials inconclusive

However, in September 1984, updated information about Corail B4000 was received from Bull showing that they are confidently marketing and expanding the system which is fully capable of realising all the objectives of the original trials.

9. Price Waterhouse's pilot word processing trial: Contacts in the company did not respond to The Economist Informatics despite numerous requests.

Those user organisations or suppliers whose trials are included in this report are as follows:

- ABC Travel Guides
- BBC Breakfast Television
- British Rail Engineering Ltd
- Cabinet Office
- Cambridge County Council
- Coats Paton
- Department of Trade and Industry
- Deutsche Bundespost
- Direction Generale des Telecommunications, PTT
- Export Credits Guarantee Department
- Greater London Council
- National Economic Development Office
- National Westminster Bank
- Siemens
- South Eastern Gas
- Strathclyde Regional Council
- Thomson Holidays

The trials are reported as far as possible in the following standard format:

1. Organisation - the sponsor of the evaluation exercise

2. Funding Body

3. Contact - the name, address and telephone number of the contact

4. Confidentiality of Information - the present status of the information in this report

5. The Trial - a brief description
   - start date
   - finish date
   - number of sites
   - number of users
   - user status
   - user responsibilities

6. Equipment - the amount and type of equipment used in the trial
   - the facilities available on the equipment

7. Aims and Objectives

8. Evaluation - the methodology, the timing and the evaluation tools employed

9. Results

INTRODUCTION

Pilots trials are an accepted means of introducing office automation within many organisations in the public and private sector. Some people do, however, question the real utility of pilots. The theory of the pilot approach is undoubtedly a valuable one but its practise may leave something to be desired.

Experience suggests that there are many issues to watch for, some of which will be discussed below. In addition there is a growing change in the status of 'office automation'. Commentators have called it 'passe' and believe that the facilities offered are little more than expensive toys. In addition, there is considerable evidence to support the idea that the true value of many of the systems which have been implemented lies in their ability to automate the typing function. A large number of office automation systems are undoubtedly little more than 'up-market' word processing systems.

This situation does not, however, represent the complete picture. Several of the trials reported here include management and professional use of equipment and the organisations have learned much about the relevance of available systems to their organisations. In addition the belief that the introduction of office automation involves much more than just solving technical problems has also been demonstrated.

There are several concerns when analysing the effectiveness and success of pilot trials. A major problem is often that of trying to determine the start date and finish date of the trial period: in several of the trials reported here the trial period rolled into a full operational system without any having definitive end. The UK-based trials sponsored by the Department of Trade and Industry managed to avoid this by having a stringent two year trial period.

Another problem is to try to ascertain the specific goals which were set when the projects began. In many cases the trials set out with laudable but somewhat broad objectives which became increasingly difficult to assess

as they progressed. The general aims and objectives of pilot trials could be described as follows:

- to encourage and promote the use of technology within a particular industry

- to provide suppliers with the opportunity of field trialling new equipment

- to demonstrate operational benefits within a particular user organisation

Many of the pilots reported in this document combined one or more of the above objectives and were attempting to test both unproven systems and also inexperienced environments. One of the clearest lessons to emerge from the UK Department of Trade and Industry Office Automation Pilots Programme (of which a number of sites are reported here) is the need to be clear about the overall limitations of pilots trials as well as about what is being piloted at each stage of a trial.

The following are observations on what a pilot is and what it can do:

- a pilot is essentially a learning exercise, and should be viewed and evaluated as such

- it can test the value of office automation software facilities to users

- it can test hardware interfaces or specialist peripheral products

- it can indicate what type of benefits accrue to the organisation: eg, cost savings, individual/group/management effectiveness, etc and what these are 'worth'

- it can examine the human implications: ergonomics, job content and design, work organisation, job satisfaction etc

- it provides valuable experience about users' training requirements and appropriate training techniques

- it indicates what new operational procedures and working practices might be implemented, as well as what form continued user support should take

- it provides valuable implementation experience in terms of introducing office technology to users with no previous experience

- it can help to build up the necessary new balance of technical, management and user-oriented skills for project implementation

Although the points listed above have been put forward as being achievable in pilot trials it is also pertinent to note the issues which pilot trials could not and should not address. These include:

- a pilot should not be justified as if it were proven technology in an experienced work group

- it should not be testing general computer hardware and related operating systems, nor the ability of equipment to withstand unsuitable environmental conditions (heat, dirt, power surges etc)

- it should not attempt to test and evaluate too many innovative aspects at one time

- it must not suffer from a lack of commitment, particularly from senior management. The existence of a 'pilot trial mentality' which produces such comments as 'it's only a trial - it may end next week' is very damaging to the realistic assessment of the success or failure of the trial

- it should not suffer from a lack of technical or management resources

- it should not have unrealistic expectations of the level of supplier support required

The conclusions to be drawn from this long list of 'do's and don'ts' are still encouraging. Pilot trials are a useful approach to trying out new technology. However, to be valuable, they must be evolutionary rather than revolutionary in nature and must also be part of a larger plan to implement information systems. The experiences gained can be very profitable and provide opportunities for the future. Trialling technology has demonstrated the immaturity of many of the products offered in certain applications and for certain groups of users.

1. TELETEX SERVICE TRIAL

1.1 Organisation

Various organisations were involved, including users and manufacturers, and trials were monitored by personnel from the university of Hannover and the Military Academy at Munich.

1.2 Funding Body

Deutsche Bundespost.

1.3 Contact

Herr Hiusil
Deutsche Bundespost
Fernmeldetechnisches Zentralamt
Postfach 5000
6100 Darmstadt
West Germany

Telephone

49 (6151) 83 5226

1.4 Confidentiality of Information

None.

1.5 The Trial

Several extensive field trials involving the introduction of teletex facilities were carried out over the period 1979-1981. They included the following projects under the overall designation 'Research Project Office Communication':

1. ALLIANZ ; user: Allianz Insurance Company.

2. TEKUM; user: Siemens AG

Start Date

December 1979.

Finish Date

1982.

Field trials were carried out as follows:

Preliminary period: Investigation of existing organisation and structure/quality of text traffic (before introduction of the new technique).

Phase 1: Testing of local functions by operators.

Phase 2: Testing of communication functions, influence on office automation.

Number of Sites

The Allianz Insurance Company and Siemens AG are both nationwide organisations so the sites were spaced throughout Germany. Allianz had nine sites while Siemens had four.

Number of Users

Terminals were installed for the use of secretarial and clerical staff. In all there were:

635 users (departmental clerical workers)
142 typists

1.6 Equipment

Prototype teletex terminals manufactured in 1980 were provided by AEG/Telefunken, T&N and Olympia for Allianz , and by Siemens for the Siemens trial. Altogether 77 terminals were installed.

Facilities

Text creation, editing and messaging.

1.7 Aims and Objectives

The main objectives of this trial were to test the teletex terminals under normal operating conditions; and to stimulate the development and acceptance of the teletex service. Various factors were considered to be important, such as:

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

Two further aims which emerged during the trial were: to test the economic viability of teletex; and to assess its influences on personnel and office organisation. The Deutsche Bundespost forecast about 40,000 teletex terminals in 1987 and about 100,000 in 1982. Ultimately it predicted that 40 percent (or 8 million)

of the letters produced each day in West Germany will be produced and sent by teletex.

1.8 Evaluation

In Phase 1 users were asked, by means of a questionnaire, about their use of the system, its effectiveness, its applications and any positive or negative comments.

In June 1982 the system was converted from the Teletex Hannover Fair Protocol to the CCITT Standard. All the parties involved were then interested to know whether this modification had introduced new problems or whether earlier problems could be solved, and statements by users were obtained.

A second questionnaire was transmitted by teletex to users in the second phase of the trial.

1.9 Results

The results of the Teletex Service Trials in West Germany were published in mid 1984, together with a view of Teletex development in an international context.

Figure C1, below, illustrates the development of Teletex connections.

Results of Phase 1 of the trials show that because only 10-20% of the total correspondence of a large organisation is external communication, teletex was being used primarily for internal communication. However, results of the second phase of the trials show that the volume of messages to be handled by Teletex increased for 60% of the subscribers over the period of the trials.

1982		1983
13%	over 100 messages per week	30%
22%	51-100 messages per week	25%
55%	11-50 messages per week	35%
10%	less than 10 messages per week	10%

The results of a distributed questionnaire showed that fifteen percent of the users in the first phase of the trial had decided to withdraw from Teletex. Of the remaining eighty five percent, thirty percent could not be reached when a second questionnaire was transmitted. Forty five replies were registered and evaluated although the questionnaire was successfully received by eighty six subscribers.

Between the first and second phases of the trials a change in the attitude to Teletex usage was noted. Teletex usage grew 11%. The number of subscribers increased five times between the first and second questionnaires, from 400 to 2,000. As a rule there was a marked positive and constructive attitude towards Teletex among users.

User Statements About Teletex

Evaluation of the user statements in the first questionnaire proved already that the motives which led the users to subscribe to the service are closely associated with a preferred application. The problems (and/or the unfulfilled expectations) stated by the subscribers allow conclusions to be drawn as to what the preferred applications are, and thus to the users' understanding of Teletex.

10% of users claimed to have problems with Teletex transmission. 50% claimed to have problems with teletex-telex communication.

There were four categories of replies when users gave their spontaneous reactions to the service:

Positive Reactions: - Speed - super-fast, error-free, instant text transmission.

- Progress - future-orientated, makes things easier, flexible, better than telex, time-saving.

Negative Reactions: - Economic Aspects - basic fees too high, terminals too expensive, not favourably priced.

- Accessibility - not enough terminals in use, hardly any communication partners, terminals badly positioned by organisers for user access.

All problems to do with operating errors or misunderstandings had to be dealt with. Officials of the Deutsche Bundespost confirmed that transmission faults in the initial phase of the trials had been rectified.

The organisers of Teletex systems in subscriber sites preferred a central location for the terminals. In about two thirds of all cases they alone decided on the selection and application of equipment. Application of new communication technology such as Teletex is always finally dependant for its smooth integration on the knowledge, good will and constructive effort on the part of all involved. Communication terminals such as those of Teletex are restricted in their effectiveness without active and ready acceptance from users in all organisations. The following criteria were therefore drawn up:

- equipment must be located to suit the user

- operators must associate easily with the terminal

- operators must be integrated into the superior task of correspondence processing

Conclusion

Teletex needs organisation. Its uses for local and international communication have not been properly developed. As long as Teletex is not largely widespread, it is up to the user to create effective communication networks based on stable and reliable communication links. Constructive involvement of all potential users is a precondition to its success. In view of the experience gained by distribution of questionnaires during the trials a further confrontation with user problems would be fruitful and necessary to advance further technical development.

FIGURE C1: THE DEVELOPMENT OF TELETEX CONNECTIONS

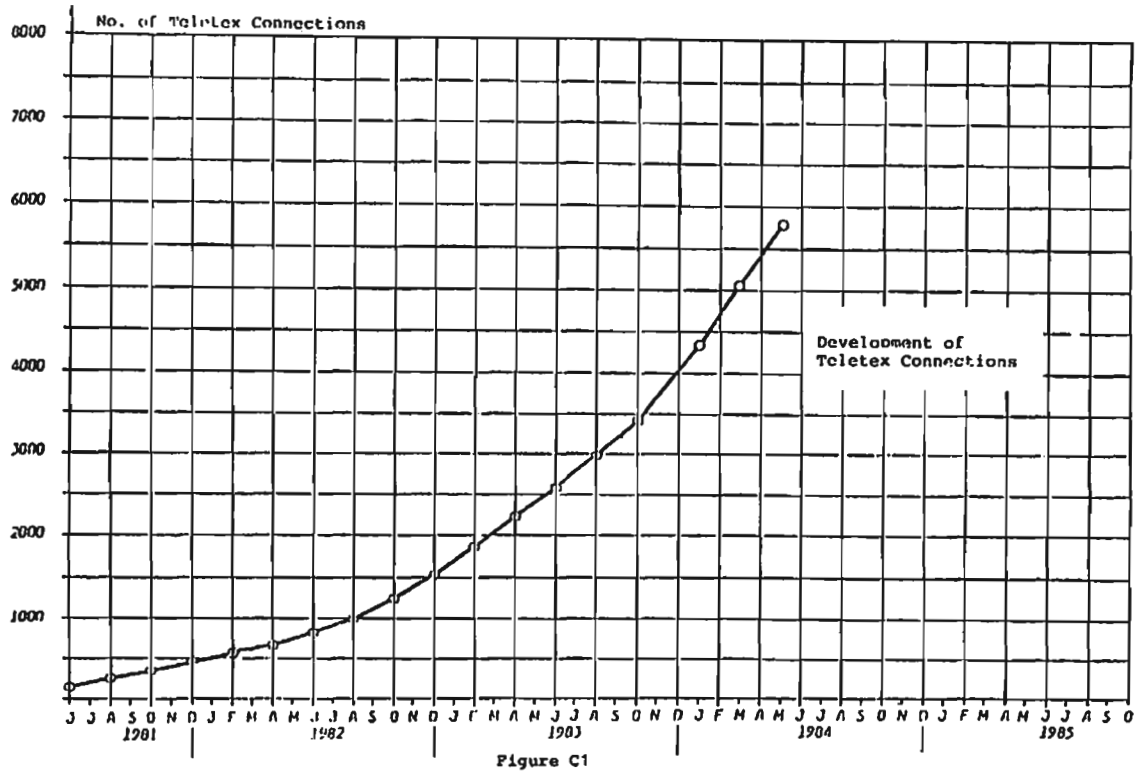


Figure C1

2. BILDSCHIRMTEXT PILOT TRIALS

2.1 Organisation

Various.

2.2 Funding Bodies

Lander North Rhine-Westphalia and Berlin and Deutsche Bundespost.

2.3 Contact

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

Telephone

49 (30) 218 3302

Herr Eric Danke
Postdirecktor im Bundesministerium fur das Post und Fernmeldewesen
Referatsleiter Bildschirmtext
Adenauerallee 81
5300 Bonn 1
West Germany

Telephone

(0228) 14 2510

2.4 Confidentiality of Information

None.

2.5 The Trial

The BTX trial was designed to explore patterns of use by both private and business participants and to analyse interest in various services including banking and shopping. Information providers were also analysed and the development of their services noted.

Surveys to gather information were carried out with all participating private households (1,204) and all business participants. Interviews were also held with all information providers. All surveys were carried out between August 1980 and October 1982.

The Bildschirmtext pilot trials ran from June 1980 to June 1983 in Berlin and North Rhine-Westphalia. The trial looked at three groups: information providers, business users and private users. However, the scope and structure of the trial focussed mainly on the last group.

2.6 Equipment

BTX is an adapted form of Prestel using an enhanced standard to cover all characters in European and Latin languages. Users must have a BTX terminal or a suitable TV set or TV set with an external adapter.

2.7 Aims and Objectives

The trial covered three target groups: BTX information providers, private participants and business participants. Information was sought as follows:

1. Providers

   - analysis of the development of providers' BTX activities during the trial

   - information and services offered

2. Private and Business Participants

   - analysis of use made of the service and acceptance during the trial.

   Questions covered:

   - frequency and scale of use

   - reason and intention of use

   - problems encountered, including technology, handling, routing structure

   - cost aspects, disposition to spend

   - chronological development of use

Surveys were carried out at several stages during the course of the trial.

2.8 Evaluation

A great deal of emphasis was placed on rigorous evaluation of the trials. A series of fourteen interim reports covering a number of aspects relating to IPs or users is available from the Deutsche Bundespost (in German). Two summary volumes in English are also available.

2.9 Results

a) Selected Conclusions from the Business Trial

1. Use of BTX by businesses was lower during the pilot trial than use by private households. However, this was largely due to the limitations of the trial which concentrated on private users. Business use is expected to be much higher than private use for at least the next three years.

2. Information provided by banks was accessed most, followed by up to date business information.

3. The DBP sees the way forward for business BTX in Closed User Groups. Specific information is required, ie relevant to a shared-interest group. CUGs were tested by a relatively small number of information providers again largely due to the trial's limited scope. However, the range did include service providers, commercial enterprises and public institutions. Established CUGs enjoyed higher frequency of use, higher rates of information retrieval and higher interactive use.

b) Selected Conclusions from Private Trial

1. The trial found a good response to home banking and high use of sports information, news and mail order.

2. The main target audience for future promotions has been identified as younger, higher income and male.

Progress Since the Trial and Future Expectations

BTX has been expanding during and since the trials. In 1985 there are 20,000 subscribers, roughly 30% private users, 70% business users. Diebold predicts an installed capacity for 150,000

subscribers by the end of 1985. The DBP expects to have less than 100,000. The trials started with 600 IPs. There are currently 2,500 and the number is growing. The milestone will be achieving critcial mass of one million subscribers which DBP expects to do in 1988. Private use is expected to increase once this level of penetration is achieved.

3. COMAT

3.1 Organisation

Science and Technology Secretariat, UK Cabinet Office

3.2 Funding Body

Department of Trade and Industry

3.3 Contact

Mr P Harris
Science and Technology Secretariat
Cabinet Office
70 Whitehall
London SW1 2AS
England

Telephone

(44) 1 233 7478

3.4 Confidentiality of Information

None.

3.5 The Trial

A trial involving word processing and information systems was set up to obtain practical experience of the application of office automation systems. Equipment manufactured by Xionics Limited is currently installed in the Science and Technology Secretariat of the Cabinet Office.

Start Date

1st May 1982.

Finish Date

1st May 1984.

Number of Sites

One.

Number of Users

At the beginning of the pilot trial the system was used by members of the Cabinet Office Information Technology Unit. This unit was disbanded in April 1983 and use of the pilot system was transferred to the Science and Technology Secretariat.

Initial use of the system was made by:

4 principals
3 secretaries
1 database administrator (for two months)

The Science and Technology Secretariat consists of 13 people:

8 principals
1 assistant
4 secretaries

Two secretaries and one principal were members of the original Information Technology Unit, and are thus experienced users.

Responsibilities

The functions of the Science and Technology Secretariat include:

- o supporting the head of the Secretariat in his capacity as Chief Scientific Adviser to the Cabinet Office
- o providing Secretariat for various committees, including ACARD, ABRC etc
- o reviewing of government funded research and development
- o provision of international science and technology relations

3.6 Equipment

All except two users have individual workstations. The terminals are linked together via a local area network to a central processing unit and a large database. Access to external databases and external message systems is provided by means of the central Xibus. Users were able to access these external services in June 1983, and to have access to the viewdata services of the Department of Trade and Industry and the CCTA; to Telecom Gold and Comet; and also to have a link to the Business Statistics Office in Newport.

Facilities

Facilities include text creation, storage and printing; full text searching of information; text messaging between workstations; voice messaging and annotation; viewdata interface; teletex; PSS interface; and encryption of stored data.

3.7 Aims and Objectives

The trial was sponsored by the UK Department of Trade and Industry, whose main objective was that the trial should be considered successful by the Cabinet Office and that the equipment would continue to be used. A secondary aim was that the trial would both improve and serve to illustrate the performance of UK suppliers of office automation equipment.

Users main objectives:

- 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 re-typing by secretaries and an enrichment of their work

Cabinet Office's main objectives:

- 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.

An additional aim proposed for the trial following the introduction of voice facilities was:

- reduction of the proportion of abortive to effective incoming and outgoing telephone calls, involvement of intermediaries and frequency of interruptions

It was also agreed that a further aim of the trial should be to obtain greater control over a principal's own work pattern and to increase the workload of the unit.

These additional aims were only recognised as being important when the exercise to evaluate the system was already under way.

3.8 Evaluation

The original plan was to evaluate use of the system by a single user group over a period of two years, by carrying out five snapshots. However, because the circumstances of the pilot trial dictated that the system was used by two different user groups, the arrangement of the snapshots was somewhat different from that expected:

First: Prior to implementation in March 1982

Second: 5 months after implementation in October 1982

Third: May 1983, interim 'final' report on first trial

Fourth: November 1983, first snapshot for most of the new users

Fifth: May 1984, final snapshot and overall review

Evaluation Tools

Project and daily logs were completed over the two week period of the snapshot, to record users' activities and any difficulties encountered. Typing work was monitored using typing tags and typing pool logs, and the number and duration of every piece of work was recorded.

In addition, members of the Science and Technology Secretariat and some of their 'clients' were interviewed. The interviews were

carried out using questionnaires designed to investigate work patterns, attitudes to office automation, and the problems encountered during their work.

3.9 Results

In summary, the results of this pilot trial are as follows:

- There was a high level of use of the Xionics system, the user groups spent about six hours of each day logged on to the system, about half this time being spent actively using the system.

- The system has proved to be a valuable demonstration of office automation.

- Prime use of the system is as a shared word processor and a shared database.

- External interfaces allow the users to access outside databases and message services.

- The database is used for electronic diaries and general information. The personal computing facilities are also used.

- One of the major uses of the system is the ability of principals to retrieve and read documents sent or archived on the system.

- At the moment little use is made of the interfaces to external databases. It is anticipated that they will be of more use when other government departments have office automation systems.

- The system security facilities have not yet been fully developed.

- The voice facilities were withdrawn half way through the trial, for further development.

- The effects of the system were demonstrated in increased quality reported by the 'clients' of the users, rather than an increase in the number of documents produced.

- The users reported that the system was a success in terms of their ability to achieve faster and more convenient working procedures.

- The objective of accomplishing greater re-use of existing documents, more accurate databases, and a greater degree of sharing information between users has been achieved to some degree. Existing documents are now being re-used, a situation which assists the meeting of deadlines.

- The message facility has increased the amount of contact and information flowing between users. It is said to complement, rather than substitute for, other means of internal communication.

- The shared database and shared address and contact list are said to be effective and useful. Electronic diaries were thought to be of limited utility: they were less reliably kept up to date and did not replace paper-based diaries.

- The objective of reducing the necessity for re-typing was met, but the potential benefits of this have not been fully realised because of the amount of re-drafting which now takes place.

- The secretaries feel that the system has contributed, to some degree, to job variety, interest and better career prospects.

- The objective of reducing the number of telephone interruptions by means of voice and text message systems has not been met fully, although principals now feel that they have more control over their working style.

- It is felt that the necessity to share a terminal reduces the potential value of the system.

- As the pilot progressed the experiences of the principals and the secretarial support staff appear to have converged. This seems to indicate that the system has become a working tool and that the difference between groups are related to the tasks rather than the tools available.

- The users are now operating at an 'in-depth' level with the system and are much more aware of its possibilities, advantages and shortcomings.

- The decision to retain the system, at the completion of the pilot, has been made, indicating the ultimate success of the installation.

4. PILOT PROJECTS IN OFFICE SYSTEMS AND INFORMATION TECHNOLOGY

4.1 Organisation

British Rail Engineering Ltd.

4.2 Funding Body

Department of Trade and Industry.

4.3 Contact

LH Smith
Office Systems Officer
British Rail Engineering Ltd
Railway Technical Centre
London Road
Derby

Telephone

(41) 332 49211 ext 3664

4.4 Confidentiality of Information

None.

4.5 The Trial

Start Date

October 1982.

Finish Date

December 1984.

Number of Sites

1. Derwent House, Derby
2. Derby Locomotive Works, Derby
3. Doncaster Works
4. British Railways Board, London

Number of Users

Approximately 40.

Responsibilities

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

4.6 Equipment

- Derwent House, Derby:

  1 OTL system processor
  5 workstations for executive directors
  5 workstations for executive directors secretaries
  1 workstation for PA to production director
  4 workstations for senior managers' secretaries
  1 workstation for the project team
  8 letter quality printers

- Business Systems Department, Derby Locomotive Works:

  1 OTL system processor
  3 workstations for systems department/project team
  1 letter quality printer

- Doncaster Works:

  1 OTL system processor
  4 workstations for works manager, production manager, works accountant and personnel and administrative manager

- British Railways Board, London:

  1 OTL system processor
  4 workstations
  2 letter quality printers

In addition, BREL has purchased the following equipment direct from OTL. It is designated as 'non-pilot' equipment:

1 OTL system processor)
7 workstations) In St Peter's House, Derby
5 letter quality printers)

Facilities

Text creation, editing, storage and printing
Technical information retrieval system
Internal voice and text messaging
Appointments diary
Voice annotation of text
Calculator

4.7 Aims and Objectives

The main objectives of this pilot trial were:

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

4.8 Evaluation

The evaluation process was similar to that used for all Department of Trade and Industry office automation pilots: the success of the trial is measured in terms of the fulfillment of the aims and objectives listed above. The progress of the pilot is monitored by periodic reviews: 'snapshots', at intervals throughout the trial period.

Each snapshot aims to review information gained from the following sources:

User attitudes: obtained by questionnaire and interviews

Client attitudes: also obtained by questionnaires

Activity analysis: concentrating on the early stages of document production and the 'life cycle' of documents

System performance: maintenance logs, system monitoring software, and benchmark tests

Organisational review: to establish the organisational context so that the significance of the information obtained above is understood

Project History

February 1982: The Project Team began using the basic system facilities.

June 1982: Doncaster works started as 'guinea pig' users although the system facilities were limited to rudimentary word processing.

January 1983: Secretaries at Derwent House, Derby, began using the system for basic word processing.

June 1983: Electronic mail and improved word processing became available. Implementation of system for use by executive directors commenced.

August 1983: Implementation of system at St Peter's House commenced.

January 1984: Full word processing, desk top facilities and communications via BT Gold became available.

4.9 Results

- The system's basic use is as a word processor. The electronic filing facilities are used, but on a limited basis.

- The electronic mail facilities are barely used: the population of users is too small and their locations are too close. Mailing between different sites (and different processors) was not available.

- The advanced system facilities are rarely used, but the system is generally popular with managers who continue to explore new uses for it.

- The word processing system is effective, although the secretaries' enthusiasm has lessened as the pilot has progressed: the novelty value has worn off.

- It is felt that the usefulness of the system at Doncaster would be increased if the user population was extended.

- o Analysis of the information gathered using typing tags, call logging and diaries has revealed that:

  - there is very little change in the number of documents produced

  - the incidence of re-drafting has increased

  - checking of documents has become a secretarial responsibility

  - Little use is made of the electronic mail facility

In general terms the results of this trial can be summarised as follows:

- o the system is widely used for word processing at a secretarial level

- o use of the system by management is limited to text editing, textual message exchange with secretaries and accessing personal file stores.

- o Electronic mailing of documents and the voice facilities for messaging and annotation have hardly been used.

5. PILOTS (GLC)

5.1 Organisation

Scientific Service Branch of the Greater London Council.

5.2 Funding Body

Department of Trade and Industry.

5.3 Contact

Dr Sam Radcliffe
Scientific Services Branch
Greater London Council
County Hall
London SE1
England

Telephone

(44) 1 633 6222

5.4 Confidentiality of Information

None.

5.5 The Trial

The pilot trial provides a range of office automation facilities to members of the Scientific Services Branch of the GLC.

Start Date

April 1982:	stand-alone word processors
June 1982:	word processor network
September 1982:	advanced workstations
March 1983:	external communications

Number of Sites

130.

User Status

	%
Managers	15
Professionals	71
Secretarial	2
Clerical and Support	12
	100

Responsibilities

Scientific Services Branch provides analytical and advisory services to clients within the GLC and outside it. The response to client requests usually takes the form of a written report which may vary in length from a few lines to one hundred pages.

5.6 Equipment

- 26 Rank Xerox 860 word processing workstations
- 5 Rank Xerox 8011 'Star' Advanced workstations equipped with a mouse and graphics facilities
- 2 laser printers
- several daisy wheel printers
- 2 file servers
- 12 823 microcomputers

All members of the branch were given basic training in system facilities. There was a wide distribution of workstations: some placed in a central area, some in a typing pool, the rest in offices and in small terminal rooms.

Facilities

Electronic message system
Mailbox facility
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

5.7 Aims and Objectives

The main objectives of the pilot trial were:

Quantifiable Savings:

- reduction in cost of production of scientific and administrative report
- reducing overheads
- elimination of duplicated information systems

Improved Effectiveness:

- efficient processing of administrative work (shortages of clerical staff were cited as an area of difficulty)

- 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 reponse 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 consistant quality of documents
- greater co-ordination between multiple work programmes
- experience in the use of advanced communications systems

5.8 Evaluation

The evaluation was similar to that undertaken at all Department of Trade and Industry sponsored pilot sites: a series of 'snapshots' performed at intervals during the progress of the pilot. The measurement techniques used include the completion of activity logs, attitude questionnaires and system logging.

5.9 Results

The lessons from this pilot trial at the Scientific Services Branch of the Greater London Council are outlined below and can be categorised as follows:

Time related:

- it is important to recognise the time taken to learn to use the more complex aspects of the system

- different rates of user learning and changing work patterns influence learning effects. Some users need a (relatively) big period of time before they become comfortable with the system

- larger organisations may demonstrate more noticeable time related factors: new systems take longer to be accepted and for the best usage practice to be developed

Fitness for purpose:

- facilities should be chosen according to the prior analysis of user needs and information/laws

- users become disillusioned if the system does not bring about the predicted effects

- not all users want to use a complete range of facilities. (There are consequent cost implications of providing unfrequently used facilities)

- software should be well designed to allow easy use of required facilities

Communications:

- the need for electronic communications should be analysed and the required facilities should be designed accordingly

- the communications facility should encompass the right people in the right departments

- the type of communication which the electronic form is intended to replace is important. Telephone calls and face-to-face discussions are sometimes more effective than less interactive means of communication

- electronic communications must be easy and convenient to use in order to be effective

Distribution of resources:

- resources should be distributed according to need and likely usage

- terminal sharing can work, but people need time to become used to the idea

Induction and Training

- there is a necessity for formal training in advanced as well as basic facilities

- 'phased' training is required
- it is necessary to allow for individual differences in learning rates, usage, prior knowledge and skills
- training should provide practical, hands on, demonstrations of the system
- the 'conceptual' aspects of the system need to be covered, as well as the more practical ones
- training should include guidelines on effective use of the system
- training should be tied in to delivery of system facilities

User support:

- needs to be responsive and in-house
- supplier support is critical - to respond to user requests for changes and developments

It is difficult to demonstrate whether the system has assisted with clerical shortages because staff levels have risen within the lifetime of the system. However, users no longer mention shortages of clerical staff as a major problem. It must also be said that users tend to value clerical staff more highly than they value the system.

Interpretation of the results of the attitude surveys and logs is inconclusive when attempting to determine whether the system fulfils the objectives set. It may have helped people to cope with existing staff levels and the shortage of support staff; or it may have exacerbated the staff situation as professionals spend time keying in at workstations.

Positive identification of the benefits of the system is demonstrated by perceived improvements in:

- o quality of presentation
- o convenience and control
- o improved speed of turnround

The clients of the Scientific Services Branch echo these sentiments, stressing improvements in quality of presentation and overall branch response times.

6. PILOTS (ECGD)

6.1 Organisation

Export Credits Guarantee Department

6.2 Funding Body

Department of Trade and Industry.

6.3 Contact

David Baird
Export Credits Guarantee Department
Aldermanbury House
PO Box 272
London EC2P 2EL
England

Telephone

(44) 1 382 7000 ex 7881

6.4 Confidentiality of Information

None.

6.5 The Trial

The Export Credit Guarantee Department has been applying computer techniques since 1965 for financial control and statistical analysis of overseas trade using batch processing methods and later the development of on-line transaction processing systems. This office automation pilot adds a further dimension to the application of advanced technology by exploiting advances in viewdata systems. One of the Export Credit Guarantee Department's major uses for viewdata in the trial is to broadcast information to a large body of users.

Start Date

July 1982.

Number of Sites

One.

Number of Users

An indication of the number of users is given by the fact that the trial involves 102 viewdata terminals.

User Status

The two main groups within the project are:

- senior managers including all divisional heads and above
- the entire staff of a project division based in London

Within these two groups all the grades in the civil service are represented.

Responsibilities

The Export Credit Guarantee Department is a government department which provides insurance cover to exporters against non-payment for goods or services by buyers overseas. It also provides guarantees to banks which assist in the provision of finance for export contracts.

6.6 Equipment

45 GEC 4000 series viewdata terminals, plus 57 terminals which the Export Credit Guarantee Department bought from its own resources.

3 AB Dick Magna Screens

6 Xerox 850 word processors

Facilities

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

6.7 Aims and Objectives

EGCD's goals were:

- o To explore the potential of their PABX by increasing data and text traffic to serve administrative needs.
- o To identify areas where technology can improve effectiveness.

The following benefits were put forward as being achievable during this trial:

Benefit	Means of Assessment
Shift from quantitative to qualitative work	Daily logs
Ability to increase case loads	Evaluation interviews
Improvement of morale and job satisfaction	Evaluation interviews
Improvement of administrative effectiveness	Evaluation interviews
Improved knowledge of market and sales ability for supplier	Not known
Improved product range of supplier	Not known

6.8 Evaluation

Like the other Department of Trade and Industry pilot trials, progress of the trial is reviewed in regular 'snapshots' where activity logs, interviews and questionnaires are completed.

Functions of System

- Case control: staff create, maintain and access information relating to projects.
- Diary system: for senior managers and others.
- Departmental/country information: to provide users with suitable access to terms stipulated by the department.
- Message facility: to provide simple message handling.

This pilot demonstrates relative emphasis on text or document handling, but there is heavy emphasis on using viewdata to broadcast information to a large body of users.

6.9 Results

Delays in implementing the following facilities have restricted the utility of the system: report generator, calculations package, word processing, and links to other computers.

There is a general view that junior staff are assiduously putting information into the system, but few senior staff take information out. This was anticipated and may be remedied by the report generation software.

It is difficult to measure changes in work patterns which are a direct result of use of the system as distinct from other influences, such as political events in overseas countries, sales drives, extraneous commercial events or even the launch of a new type of insurance cover.

General lessons of the implementation of this system:

- It is essential for users to have easy access to terminals, preferably to have a ratio of one to one.

- It is vital for relevant systems to be available to the relevant users. (Any technological solution involving non-compatible equipment has been found to be unacceptable).

- The decision to implement a viewdata-based solution will only be seen to be correct if the viewdata standard does not become a limitation in communications.

- The future success of the system will be determined by its part in a general information technology strategy within the department.

7. PILOTS (DTI/REDIFFUSION)

7.1 Organisation

The Information Technology Division at the Department of Trade and Industry

7.2 Funding Body

Department of Trade and Industry

7.3 Contact

Mr Bob Hewes
Sanctuary Buildings
Great Smith Street
London
England

Telephone

(44) 1 215 7877

7.4 Confidentiality of Information

None.

7.5 The Trial

The pilot trial provides office automation facilities to members of the Information Technology division of the Department of Trade and Industry. Most users share terminals, except those who use the system for dedicated word processing.

Start Date

September 1982.

Number of Sites

One.

Number of Users

40

Users Status

	%
Managers and professionals	59
Secretarial	5
Clerical and support staff	36
	100

Responsibilities

The Information Technology Division of the Department of Trade and Industry exists to sponsor and monitor the progress and development of the British information technology industry.

7.6 Equipment

22 Viewdata terminals and 7 printers linked in a 'star' configuration.

Facilities

Desk top management (in-tray, pending file, jotter notes etc)
Word processing
Electronic mail
Document management
File management
Diary
Calculator

7.7 Aims and Objectives

The main aims of this system were:

- 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

7.8 Evaluation

In common with the other DTI pilot trials, the succcess of this pilot is measured by means of periodic snapshots at intervals during the period of the trial. The tools used include the collection of information by means of activity and system logs, document tags, and interviews and questionnaires.

7.9 Results

The final review of this pilot trial was undertaken in July 1984, fourteen months after the system had 'gone live'. This final

review was performed in the knowledge (of consultants and users) that the system was to be withdrawn and would not run to its two year trial term. The decision to withdraw the system was determined by many factors, including those of availability of facilities, system reliability and the supplier's future development path. It is relevant, in this document, to discuss the results of this trial without dwelling too heavily on the decision to withdraw the Rediffusion system.

Most of the perceived benefits of this system are centred on the availability of word processing and text editing facilities. These have generally been realised in terms of improved speed of response. The filing and messaging facilities provided have not been widely used and are not felt to be successful. The time taken to file and retrieve documents deters users and the inability to locate a particular document quickly and the slowness of the system response times are frustrating.

Differences between the work patterns of executive and clerical grades accounted for some difference in the utility of the system, and indicate different requirements in system facilities.

Despite the problems and frustrations experienced with this pilot trial, the majority of the users report increased satisfaction from working more effectively. All those interviewed in the final evaluation review wished to move forward to a new office system which matches their requirements more closely, and attains acceptable performance standards. The pilot has been successful in that the experience gained has given the users a clearer view of the functional needs which must be satisfied by any future system. The experience has left the users better placed to define criteria by which a new office automation system should be judged, an important objective of the IT division to enable it to fulfil its role.

8. PILOTS (CCC)

8.1 Organisation

Cambridge County Council

8.2 Funding Body

Department of Trade and Industry

8.3 Contact

George Sands
Director of Office Systems
Cambridge County Council
Shire Hall
Cambridge
England

Telephone

(44) 0223 358811

8.4 Confidentiality of Information

None.

8.5 The Trial

The Office Automation Pilot project in Cambridgeshire involves a broad range of office automation applications, installed in departments throughout the county.

Start Date

Summer 1982.

Finish Date

December 1984.

Number of Sites

One site involving five departments:

Social Services
Educational Welfare
Educational Psychology
Careers Advisory Service
St Peter's Secondary School

Number of Users

Users have access to just under 300 attached terminals, plus 50 stand-alone displaywriters.

User Status

Secretarial, clerical and professional staff.

Responsibilities

Social Services:	identification and support of clients in need
Educational Welfare:	provision of benefits for pupils in need: free school meals, distinctive clothing, maintenance awards
Educational Psychology:	analysis and fulfillment of special education requirements

Careers Advisory Service: matching young people's career aims with local employment opportunities, further education or training

8.6 Equipment

- IBM 4341/2 mainframe (9000 mb storage)
- 6 8100 controllers
- 300 terminals: 3732 word processing
  9775 combined wp/dp
- 5210 printers
- 50 stand-alone machines: IBM displaywriters in Fire and Rescue HQ, Police HQ and local secondary school
- 8100 controllers are linked to each other via the mainframe and electronic mail and messaging is possible between and within all sets.

Facilities

- Text creation, editing, storage and retrieval
- DP and calculation of statistics
- Electronic mail and messaging
- Applications software to serve specific user requirements

8.7 Aims and Objectives

For Cambridge County Council:

- o to promote UK industry and gain wider use of new technology
- o to establish a centre of competence
- o to produce long term cost benefits

- o to reduce the production and movement of paper documents
- o to improve management control of station
- o to make more effective use of people and equipment

Department Objectives:

Educational Psychology:	support system to allow easy access and updating of client records and reduce manual searching
Educational Welfare:	calculate payable benefits, check school registration, and indicate when reviews are necessary
Social Services:	two components: client index and case file index will replace manual card based indexes which are subject to duplication and redundancy of information
Careers Advisory Service:	to match employed school leavers to suitable job vacancies or employer profiles; and to reduce manual filing and searching and make the process fairer
St Peter's Secondary School:	to develop administrative and financial systems to help in the running of the school

8.8 Evaluation

As with the other Department of Trade and Industry sites, an evaluation programme consisting of one pre-implementation and four post implementation reviews was carried out. The evaluation

reports covered reviews of equipment installation, use, user attitudes and expectations and potential future developments.

8.9 Results

The Cambridgeshire County Council pilot trial ran from mid 1982 to December 1984: there is no intention to halt developments in office automation now that the trial period is over. The initial funding of £250,000 has been supplemented by internal investment from an early stage in the project. The total investment in office automation now exceeds three quarters of a million pounds and a further three million pounds is available as a reserve for future expansion.

The success of the Cambridge pilot can been summed up in the following manner:

- The pilot has allowed Cambridge County Council to take advanced steps into information technology. The availability of DTI funding acted as a catalyst for a rapid progression which otherwise might not have come about.

- The pilot has involved and interested large numbers of people: both staff and outsiders, in information technology.

- The pilot has provided Cambridge County Council with more skilled staff, whose experience may also be recognised in the marketplace.

- The pilot has enabled Cambridge County Council to expand the use of data processing. All facilities are available to anyone with access to the system.

- The publicity surrounding the progress of the pilot has helped to convince local politicians that there is value in information technology. This should help to ease the progress of future developments.

Generally, it is felt that much progress has been made within the County Council over the past two and half years. All departments now appear to be on the brink of a major expansion. Word processing is the principal benefit perceived of the IBM systems - suplemented by simple text-based systems in each department. The systems which were intended to support specialist activities have all been introduced, although some of these are not yet operational. The lessons learnt from this trial include:

- o staff and users need to be aware of developments, especially as substantial expansions are now planned

- o training should be closely linked to job function and the timing of system introduction

- o user involvement in system design is crucial, especially as many staff now appreciate system capabilities. These staff would not accept a system which they do not feel is 'right' for their job. A structure of the department 'consultants' is suggested to bring the system designers and users closer together

- o there are many positive effects of inter-departmental transfer of knowledge and experience

- o there is a need to have all levels of staff actively involved in the introduction of systems, including senior management

- o the value of a top-down approach to the system use has been demonstrated. As departmental senior staff began to use the system more, other professional staff began to realise that the system is capable of more than word processing.

- o terminal density is important: no matter how good a potential users' intention, reasonable access to equipment is required to give the opportunity for reasonable progression.

Conclusions

Both Cambridge County Council and IBM agree that this pilot has been a useful and valuable experience. Considerable financial and resources commitment has supplemented the original DTI sponsorship. Much has been learnt about the pitfalls and tribulations of the introduction of information technology on a large scale, particularly the effects delays have on morale and system utility.

9. VISUAL SERVICES TRIAL AND THE EUROPEAN VIDEO EXPERIMENT

9.1 Organisations

Various.

9.2 Funding Body

British Telecom.

9.3 Contact

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

Telephone

(44) 473 642402

9.4 Confidentiality of Information

None.

9.5 The Trial

The pilot was set up to test a video conferencing system using two megabit links, plus desk-top monitors allowing access to Prestel and to booking facilities for the videoconferencing system. The system is being tested with a number of companies.

Timing

Each company is connected for a minimum period of six months. Some companies have been on since February 1983, some are still to be connected. It is expected that the trial will have ended by April 1986.

Number of Sites

Main sites are London, Manchester, Middlesbrough, Glasgow, Liverpool, Sheffield and Ipswich.

Number of Organisations

16 external organisations (plus internal BT organisations), two sites per organisation except some have more than 2 ends (3 or 4).

Number of Users

Unknown; wide range, including administration, marketing, engineering, and technical personnel, but definitely not restricted to very senior personnel.

9.6 Equipment

Some organisations have cabinet-style terminals containing 2 monochrome monitors and one camera, plus an associated display stand with camera. Others have a unit housing a 12 inch monochrome monitor. Other equipment includes two cameras (one for view of two or three participants per site and one for documents). The analogue signal is converted by GEC codec and routed via trunk switches and two Megabit digital links. Local distribution varies: it includes O/F, microwave and cable. Codecs located at BT 'video exchanges' are shared between users. Analogue and digital switches are under control of a central computer.

Facilities

- monochrome video teleconferencing (conditional replenishment of changing parts of visual image)

- Prestel interface

- booking of network and codecs via viewdata over system

- colour could be provided, if requested and paid for

9.7 Aims and Objectives

During the trial it was expected to obtain behavioural and facility information from users, booking patterns (times of day, how much in advance, cancellations). It is hoped that after the trial users will opt to use the equipment, paying for 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.

9.8 Evaluation

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

- zoom
- 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 can 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:

- communication changes after installation and use

- 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

9.9 Results

The trial is still in progress and nothing will be published until the trial period has ended, so it is not known how successful the system has been. British Telecom are more reticent about the trial's progress than they were at the time when the 1983 document was compiled since they are now a private company.

The Future

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

UK)
France) Also building
Italy) codecs
West Germany)
Halland
Sweden
Belgium
Norway
Denmark
Spain

10. NATIONAL WESTMINSTER BANK PILOT SCHEME

10.1 Organisation

National Westminster Bank plc.

10.2 Funding Body

National Westminster Bank plc.

10.3 Contact

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

Telephone

(44) 1 726 1777

10.4 Confidentiality of Information

None.

10.5 The Trial

National Westminster Bank handles its book-keeping and processes its customers' transactions at two central computer installations, one in the East Midlands and one in London. Two IBM 3081 mainframes are supported by 5000 terminals (including ATM's). This system is dedicated to maintaining the accounting base.

Non-accounting information about its customers is held by National Westminster Bank at individual branches and, until recently, was

maintained on a manual system. The manual system, however, became increasingly costly, prone to error, and difficult to maintain in a comprehensive form, so it was decided in 1981 to run a pilot trial for a branch processor system which would enable staff to handle non-accounting data at workstations. The trial began in two branches.

Number of Users

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

User Status

All grades (managerial, clerical and secretarial).

Responsibilities

Maintenance and use of customers' records for purpose of lending and control of accounts.

10.6 Equipment

IBM 8100 system, VDU's, keyboards and printers. A typical terminal in a branch comprises a number of keyboards and VDU screens, plus one or two printers.

Facilities

Information retrieval and production of standard forms.

The information stored on the branch processor comprised basic customer details, such as:

- name and address
- occupation and date account opened

- details of agreed borrowing arrangements
- securities held
- profile of working of the account
- potential for marketing the bank's services
- record of notes made following customer interviews
- record of response given to enquiries about financial status

The processor was also linked to the on-line accounting system so enquiries about balances, turnover and statement details could be called up. A word processing facility enabled the branch to produce personalised letters.

10.7 Aims and Objectives

The system was 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 were:

- to measure the degree of assistance such a system would give 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 might be designed so that branch staff did not have to acquire computer skills

- to identify any other functions which could have been added in the future

- to identify how these systems could interface with each other, and with area and regional offices.

10.8 Evaluation

Much of the evaluation carried out in 1981 was based on the subjective judgement of the users. The objective measurement of productivity and increases in productivity was to have been attempted when more branches had systems. However, no formal evaluation was carried out once the system was extended.

10.9 Results

Following the 1981 'trial' the branch processor system has been installed in the area of Epsom, in Surrey, where National Westminster Bank has 51 branches.

Ten IBM 8100 machines now control a total of 300 terminals which handle some 250,000 accounts. Invariably one terminal is provided on, or near, to the manager's desk.

As noted above, no formal evaluation was undertaken, but the system is seen as being very useful. The main advantages of the system include the following:

- the speedy retrieval of customer information enables managers to improve their guidance to customers

- customers are impressed by the speed and efficiency of the system

- managers have access to data instantaneously, which would previously have had to be assembled manually from a number of files by a clerk

- the database increases the efficiency of clerks and other officers when they are dealing with customers, monitoring lending, closing accounts, or sending out cheque books

- the system enables branch staff to identify marketing openings

Opportunities for the future are seen in terms of cost-saving and providing better customer service. For example, credit scoring and credit control could be automated; staff could be provided with more information, such as exchange rates and interest rates, at their desks; and the system could be used for in-house training purposes.

11. SEGAS TRIAL

11.1 Organisation

South Eastern Gas

11.2 Funding Body

British Gas Corporation

11.3 Contact

Mr Steve Roache
Project Controller
Office Automation
South Eastern Region
British Gas Corporation
Katherine House
Katherine Street
Croydon CR9 1JU
England

Telephone

(44) 1 688 4466 ext 394

11.4 Confidentiality of Information

None.

11.5 The Trial

The trial, which started in 1982, involved the installation of a word processing system and information tools throughout the organisation, in order to achieve greater efficiency. Initially, the trial was based on three system: decision support, information

support and administration support. However there was little or no communication between these. As it turned out, the project did not formally end, but simply developed further, and these developments are included here, in spite of the fact that the project was not a true pilot.

Number of Sites

12: headquarters, 3 major sites and 8 minor sites.

Users

All grades, executives, clerks and typists.

11.6 Equipment

There are now 3 systems which interconnect and allow communication:

Decision Support System
Information Support System
Administration Support System

Equipment consists of:

IBM 3081D
Amdahl 580-60
about 1,500 VDU's

The administration system is based on two Wang VS 100's which are attached to 100 VDU's and also has 10 Wang printers.

The systems are supported by about 35 printers.

In addition there are:

4 Wang OIS machines
4 Wangwriters
6 IBM Displaywriters
25 IBM PC's
10 Wang PC's

Facilities

Word processing
Electronic mail
Financial budget and planning models
Diary management
Personal filing of information
Keyword retrieval of information

11.7 Aims and Objectives

The aims and objectives of this trial have not changed greatly since the trial began in 1982.

Those personnel responsible for implementing the system intend to build upon the valuable experience gained from the earlier trials. They still wish to meet the objectives which were previously identified. These included:

- 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 future systems and give a firm basis for futrue justification.

11.8 Evaluation

The evaluation involved measuring how individuals used their time, and noting whether time could be saved on less productive activities. The method of justifying the potential of the system and of judging its success was oriented towards each individual facility, rather than an overall evaluation of the total office automation process.

11.9 Results

The trial of electronic mail using the Wang equipment was judged to have failed because many people who needed to use the system did not have access to it. This critical mass problem was resolved by using the mainframe to run electronic mail software. This has been more successful and there are now approximately 500 users of the system.

The Diary Management facility has about 50 users and is felt to be reasonably successful.

Measures tend to be of productivity gains rather than of quality of output. Some increases in managerial time saving have been identified but these are not seen to be critical. The evaluation is influenced by the bias of the management accountants toward financial savings rather than qualitative benefits.

The organisation is aware of the concern about health hazards of VDU's, and they have introduced a screening policy for all those who are about to use them. There is, however, no formal evaluation of these potential health issues.

User response to the pilot has been generally positive. There is a certain amount of participation, although this is generally confined to choice between the types of equipment which are available. For example, users may choose between IBM or Wang equipment. Training in use of the systems has also been reasonably successful. Of about 250 people trained to use the word processing facilities only 2 have failed the post-course test and have returned to manual typing facilities.

It is worth noting that the Trade Unions were closely involved in the initial planning of the pilot projects, and protracted negotiations took place over a period of at least two years. In fact, there have been no compulsory redundancies brought about as a result of the pilot projects.

The Future

The next stage of development may bring about some interesting decisions and issues. The blurring of the demarcation between the typist and the clerk may precipitate Trade Union activity which could require different job specifications and fundamental changes in structure of the organisation of work.

12. THOMSON COMPUTERISED AGENT RESERVATION SERVICE

12.1 Organisation

Thomson Holidays (Travel Agency)

12.2 Funding Body

Thomson Holidays

12.3 Contact

Mr Tim Rundle
Sales Development Manager
Thomson Holidays
Greater London House
Hampstead Road
London NW1 7SD
England

Telephone

(44) 1 387 9321

12.4 Confidentiality of Information

None.

12.5 The Trial

The Computerised Agent Reservation Service (CARS) trial began in March 1981, with 66 travel agents in the London area. Ten towns were chosen to operate the pilot alongside a similar number of control towns. The main function of the trial was to build up knowledge about the practical aspects of linking up videotex screens with a computerised booking system. By means of this

computerised system it was hoped that travel agents' access to Thomson would be improved, thereby expanding Thomsons' business.

The trial was very successful, and preliminary work on a second phase of the pilot, developing an in-house videotex network, began in 1982, with a target date for implementation of a year later. The 66 travel agents who had co-operated in the CARS trial were introduced to the new Thomson Open-Line Programme, (TOP), in July 1982.

The national introduction of the Top system took place in October 1982, and by November 3000 travel agents were connected.

Start Date

September 1982.

Finish Date

Further developments of the system are planned.

Number of Sites

At August 1984, 4500 travel agents were using the on-line system.

12.6 Equipment

2 Amdahl V7B mainframes
2 Amdahl 4705 TP controllers

Various software:

- VTAM (Virtual Terminal Access Method) to communicate between the 4705 and TRACS

- MSNF (Multi Systems Network Facility) to allow any terminal to communicate with any system

- NCCF (Network Control and Communication Facility) which allows operators to enter simple commands to control opening, closing, and routing of lines

- PCNE (Protocol Converter to Non SNA equipment) which converts input/output on the X25 lines to a form compatible with VTAM

31 Remote Network Controllers have been installed and act as the foci of the network. They provide a total of 461 ports, (each basic unit comprises a master and four slaves - each slave supports 4 videotex post, so 16 parallel videotex conversations can be carried out simultaneously).

The Remote Network Controller has a number of functions:

- controls a Prestel Gateway look-a-like interface between TRACS and videotex terminals

- stores up to ten frequently used frames

- performs character echo cursor control, refresh and other Prestel Gateway-type functions

- acts as an intelligent packet Assembler and Disassembler communicating in X25 down Thomsons datalines to the computer centre

Facilities

- booking of holidays, car hire etc

- searching for availability of holidays using price, location, length of holiday etc as the searching strategy

- provision of up to date information about particular holidays

- prompting of travel agents for booking details

- shortened timescales by the introduction of binding transactions as soon as the details have been confirmed on the screen

12.7 Aims and Objectives

As noted earlier, the purpose of the first pilot was to learn about the impact of videotex links in the offices of travel agents and on Thomson's business as tour operators, rather than to establish technically how it should be done.

The other objectives of the first trial were to prove that the system had the following characteristics. The system would have to:

- be comprehensive and easy to use

- appeal not only to the travel agent but also to the client with whom the agent is dealing, (ie would 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 Thomsons continued expansion plans and aid the further reduction of adminstrative costs per holidaymaker

The objectives of the second phase of the system were, in moving away from the front-end approach to building the videotex system into the mainframe, to give performance improvement and overcome problems with response times and allow for expansion.

12.8 Evaluation

No formal evlauation was carried out, but the effect of CARS was monitored closely on an informal basis. Success was measured in terms of the proportion of business picked up through the videotex system, as well as the relative growth of business in CARS agencies as distinct from control agencies.

12.9 Results

The development of the computerised system since the initial pilot stages indicates the considerable degree of success which this trial, from its small beginnings in ten travel agencies, has had.

The rationale for introducing systems initially was based on the need to cut out waste. As noted earlier, the effects of the first pilot system were 'monitored closely': it became evident that between one third and a half of all Thomsons business from agents cooperating in the pilot trial was coming thorugh the videotex system. Business also grew more in the agencies operating the CARS system than in the control groups. The year long trial confirmed the suitability of the videotex system for the business: agents were using the system and customer acceptance had been positive. Clients were said to like seeing information come up on the screen and enjoyed being addressed personally by name. There was a degree of involvement of customers in the booking conversation rather than the necessity for them to be merely bystanders. The 'on-line' situation also meant that the customers believed the information which came up and did not go from one agent to another trying to book the same holiday.

The trial proved a great selling tool for the agent and a great asset when tying the agent into the Thomson operation. Consequently, the decision was made to go ahead with a national videotex network. Despite the success of the trial it was concluded that the follow on system should take a different technical approach. This was to build the videotex system into the mainframe with the TRACS system, to give performance improvement and overcome the problems with response times as well as allow for expansion.

The TOP system, Thomson Open-line Programme, has also been a success. Thomsons belive that it has transformed the relationship which they have with their agents. Now when an agent makes a booking through TOP the transaction is binding as soon as it is confirmed on the videotex TV screen. The response from the system is said to be virtually instantaneous and the facilities that it offers to display and search for alternative holidays, to cost each holiday package and to involve the client totally in the booking process are said to enable the agent to give a new level of service.

The measured experience of the TOP system indicates that Thomson has gained business as a direct result of the system. Even those agents who use the TOP system least are booking over half their holidays with Thomson through the videotex screens.

Thomson view the TOP system as having brought about a real change in the way they handle their business. The point of sale is now remote from Thomson, but, at the same time, the agent is more intimately linked to Thomson than before. The potential to develop the system further into on-the-spot ticketing (when printer technology allows) and the integration of video to improve presentation to clients is also anticipated.

Future Developments

Development work in the short term will probably take the form of catering for the demands of an increasingly segmented market. It is also intended to restructure the inventory database to enable the system to offer more precisely targetted holidays. Thus individual client needs for sports facilities, entertainment, and other demands could be catered for more easily.

In the long term opportunities are envisaged in third party and value added networks, local printing and video. However, Thomson are reticent about the timescales involved in these future developments since progress depends on outside influences and market forces.

13. COATS PATON'S PILOT WORD PROCESSING TRIAL

13.1 Organisation

Coats Patons plc

13.2 Funding Body

Coats Patons plc

13.3 Contact

Mr Joe Black
Group Computing Advisor
Coats Patons plc
155 St Vincent Street
Glasgow G2 5PA
Scotland

Telephone

(44) 041 221 8711

13.4 Confidentiality of Information

None.

13.5 The Trial

The trial involved the introduction of word processing facilities into the company. The move towards an automated solution came about after the identification of a number of problems. Firstly, there was little co-ordination between the central typing pool and departmental typists: as a result, departmental secretaries and typists were underworked when authors were away. Secondly, managers were not connected to the dictation systems of the typing pool. Thirdly, existing IBM Magnetic Tape Machines were unpopular and under-used.

Phase one began in December 1978 and involved the automation of the company's typing services and financial control departments. Phase two began in January 1981 and saw the implementation of additional equipment in the typing and other departments (manufacturing and commercial departments). These activities were reported in the 1983 document.

Neither of these projects were in fact terminated; rather they developed into a permanent feature of the company's work-pattern. Thus what follows essentially provides details of recent developments, in spite of the fact that the activities no longer warrant 'trial status'.

Number of Sites

One.

Number of Users

Eighteen.

User Status

Typists.

Responsibilities

Typing and support services.

13.6 Equipment

2 Raytheon Cosser Central Processing Units

2 stand-alone word processors

NEXOS shared logic word processing:

- o 5 terminals in central typing services department
- o 13 terminals distributed in very small pools throughout the organisation

Various printers

Facilities

Word processing.

13.7 Aims and Objectives

It was hoped that the introduction of a word processing system would help solve the problems identified earlier. Three main trial aims emerged for phases one and two:

- to reduce staff in typing services by ten, and in financial control by one
- to ascertain how word processing functions ought to be organised
- to ascertain what would be the best type of equipment to install in two large and old buildings

The aim of the recent development has been to continue the benefits accrued from the first two phases of the 'trial' and to seek further improvements in the quality of documentation produced.

13.8 Evaluation

Phases one and two: An analysis of the typing being done was undertaken, using activity logs and duplicate copies of all work produced. An average number of lines typed per day was calculated. A shared logic word processing system provided daily statistics for the input and output of numbers of characters.

After the trial, some measurements of the volume of typing were undertaken during sample periods.

There were also subjective reports on the effectiveness of the system and the overall reaction to it.

13.9 Results

Phases one and two: The input of numbers of characters rose slowly during the trial. However, the output of character numbers 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
- when making corrections, pages were reprinted in full, rather than using white-out

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

Once authors became used to the idea of drafts, they were generally keen on the system. This was 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.

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

The developments at Coats Patons plc show an important move away from a purely centralised pool of support services to decentralised 'puddles' of support. The reasons given for this are the need for a better quality of support which is local to the authors. Where departmental 'puddles' of support have been developed the authors experience more commitment and understanding of their needs on the part of the support staff.

There is a widespread acceptance of the word processing facilities and a positive approach to the future implementation of office automation. Training was done by NEXOS and was described as being reasonably good. The continued support of the system is somewhat problematic since the original suppliers, NEXOS, have now gone into liquidation. Support of the hardware is being undertaken by another company. This arrangement is adequate but no more. More critically, there is some concern at the prospects for future software development.

It is felt that it is unlikely that advanced facilities such as database management and spreadsheet software will become available. The concern is that, while NEXOS equipment was purchased in good faith, the company is now faced with the prospect of continuing to run a 'white elephant' of a shared logic system. It is felt that it will be necessary to purchase more advanced equipment and facilities from other suppliers.

The plans for further implementation of office automation are in the early stages: wiring and interior design of the offices are being considered. Also, the organisation is employing a team of

management consultants, to advise them on their strategy for the implementation of new technology. There is already a growing awareness, within the organisation, of the issues which arise from the introduction of computerised office systems. One example of this growing awareness is the willingness to accept that the terminals are 'tools' and do not need to be used on a full time basis to make a useful contribution. There is also a growth of expertise within different departments: typing services, management services etc. This cross-departmental interaction is an important factor in preparing the way for further implementation.

14. TELETEL - VELIZY TRIAL

14.1 Organisation

Direction Generale des Telecommunications, PTT

14.2 Funding Body

PTT.

14.3 Contact

Mme Simone Muet
Communication Commerciale et Publicite
Direction Generale des Telecommunications
Direction des Affairs Commerciales et Telematiques
20 Ave de Segur
75700 Paris
France

Telephone

(33) 1 327 3581

14.4 Confidentiality of Information

None.

14.5 The Trial

Teletel is a nationwide public videotex project conceived and run by the PTT. It is essentially being launched on the back of the introduction of an electronic telephone directory, although the directory is in fact just one application of Teletel.

Two major trials have been run for Teletel. The first, known as Teletex 3V, or the Velizy trial, was a general testing of videotex in the home, and was aimed at evaluating the social, economic and technical implications of Teletel. The second, at Ille-et-Vilaine, was set up to test the Electronic Directory. It is the first of these which is examined here.

Start Date

March 1980.

Finish Date

End 1982 - early 1983.

Number of Sites

The trial included three towns, Velizy, Versailles and Val de Bievre.

Number of Users - The participants comprised end users (households) and service providers.

a) Households

A sample of 2,500 households was chosen from around 8,000 volunteers, using a number of criteria, including socio-professional categories, age of head of household and composition of the household. Terminals were installed in each household. A further 500 terminals were located in the offices of the service providers and the project team.

b) Service providers

A total of 190 service providers were chosen from three categories:

- large public sector companies and organisations

- local collectives, local administrative bodies, local and regional press and local commerce

- private industry

14.6 Equipment

Each household received a free Teletel videotex adaptor which was connected to the existing television receiver and telephone line. Those households without televisions were issued with a prototype stand-alone Minitel terminal. In addition, 300 smart card readers were connected to some of the user terminals to allow electronic payments to be made from home, and to allow protected access to a variety of personalised services, including banking.

Facilities

Access to a wide variety of services, including electronic newspapers; pages on consumer affairs, taxation, education, health, etc; an entertainment schedule covering most of France; home shopping services; railway timetables and reservations; and electronic mail.

14.7 Aims and Objectives

The trial had six principal objectives:

- to check the performance of the equipment and the quality of the telephone network's transmission

- to provide feedback to service providers in order that proposed services could be adapted to the needs of the public

- to allow the various participants to build up the required know-how - particularly the service providers

- to provide the terms of reference to help establish the legal framework and professional code of ethics within which Teletel services would operate

- to increase the Teletel's impact on the social environment

- to work out a tariff structure

14.8 Evaluation

An evaluation plan was set out which involved continuous monitoring of the trial, including snapshots before, during and after the trial, as well as specific studies written once the system had stabilised. The evaluation may be broken down as follows:

a) automatic statistical analysis regarding use traffic and the performance of the system (eg date, time and duration of calls, which services accessed, etc)

b) quantitative studies, carried out before, during and after the trial

c) qualitative studies, concentrating on learning curves, users' perception of Teletel, use made of the system, and criticisms of the services available on it. These studies were carried out using face-to-face questionnaire-based interviews

d) omnibus surveys, whereby service providers were given the opportunity to interrogate users, by means of questionnaires

e) specific studies looking at, for example, videotex services aimed at the general public; videotex usage by young people; the impact of Teletel on the social environment (the media, businesses and services, purchasing behaviour and consumption); and pricing policies for videotex

f) specific studies carried out for service providers, with a view to evaluating their product

14.9 Results

Overall, the Velizy trial was very successful. It was demonstrated that users were willing to access services on Teletel, and that they had few problems using the system.

From the point of view of service providers, essential expertise was built up, and many teething problems were eliminated. Many of the service providers participating in this trial went on to provide some of the most frequently accessed services on today's commercial system.

Following the Velizy trial, a full market trial involving 300,000 households was started in 1982 in the Ille-et-Vilaine administrative region of France, and was used to evaluate the Electronic Directory. This, too, was successful and at the end of 1984 the number of service providers, both public and closed user groups, was estimated to be over a thousand, with 20-30 new services being added each month. To date the Electronic Directory, and thus Teletel, is being implemented in ten of France's twenty one regions, and the whole of France is expected to be covered by 1986, with a target of three million Teletel terminals installed.

15. ABC TRAVEL GUIDES, FRENCH MARKET TRIAL

15.1 Organisation

ABC Travel Guides.

15.3 Funding Body

ABC Travel Guides.

15.3 Contact

Mr M Nathan
ABC Travel Guides
World Timetable Centre
Dunstable
LU5 4HB
England

Telephone

(44) 582 600 111

15.4 Confidentiality of Information

None.

15.5 The Trial

ABC Travel Guides produces a large number of travel directories, of which its World Airways Guides, giving air schedules and fares, have a very high penetration in Europe as well as in the UK. Following market studies throughout Europe and the UK the company began to develop an on-line service for the information which would be made available to the travel industry via videotex systems. The first pilot trial of the system took place in Paris among a sample of companies in the travel sector. The system was

accessed using the French public viewdata network, Teletel. Since French travel agents are not, as yet, highly automated, equipment had to be provided in most cases.

Start Date

July 1984.

Finish Date

September 1984.

Number of Sites

35 sites, comprising:

- 12 airline companies
- 12 travel agencies
- 7 travel agents running travel departments in non-travel companies (implants)
- 4 company travel managers

Number of Users

At each site one or more members of staff made use of the service.

User Status

Users included both branch managers and counter staff.

15.6 Equipment

30 Minitel sets (low cost viewdata terminals provided by PTT)
10 printers
20 Numtel sets (provide automatic dialling and log-on functions - designed by ABC's representative in France)

The Numtels and printers were made available on a rotational basis.

15.7 Aims and Objectives

- To test performance of the ABC Electronic System and to eliminate any bugs.

- To monitor user reaction to the system and to incorporate any feedback into the system.

- To test the Numtel equipment.

- To overcome apprehension about using the equipment and to wean users off the ABC hard copy.

- To ascertain the value of the system to travel companies.

- To ascertain the market for the system.

15.8 Evaluation

Evaluation was carried out by means of

a) the statistical analysis cards

b) a series of questionnaires filled in at intervals before, during and after the trial

c) qualitative interviews

Initially, representatives of the companies chosen to participate were required to attend a training session. During the trial users were required to fill in a small statistical analysis card each time they accessed ABC Electronic, and to make a separate note of any problems, complaints or ideas.

Questionnaires and interviews were geared differently for managers and counter staff. Questionnaires were administered prior to the trial, and subsequently in weeks six, seven, eight, and at the end of the trial. Information was collected regarding:

1. Participants' current working practices, their expectations of the system, their opinion of the ABC in hard copy, and their expectations of the service.

2. User reactions to system instability.

3. Modifications to the service desired.

4. Problems encountered/ additions to the service desired.

5. Participants' opinions of the service after the test had ended.

15.9 Results

User reaction to the system was of course affected by learning curves, but also by the level of activity in the trade (eg travel agents were extremely busy in July but not in August, when they had more time to experiment with the system); and by periodic instability of the system.

Despite a number of setbacks the trial was perceived as being a success. The problems encountered included the following:

- practical apprenticeship took several weeks in the case of many travel agents where the environment had previously been non-automated

- programming errors in the ABC Electronic System

- equipment failure

- lengthy connection times

- low participation by several airline companies whose counter staff were able to obtain information more quickly using dedicated airline systems

However, most participants were eventually able to make frequent use of the system in a 'real' situation during the course of their work (ie with clients), while for some the Electronic System completely replaced the book.

Since the trial the system has undergone a number of modifications and a degree of upgrading, and is now available as a commercial product throughout France. In addition, a market trial for the product has successfully been completed in the UK and is now commercially available; and the service is due to be launched in Germany shortly.

16. BBC BREAKFAST TELEVISION

16.1 Organisation

BBC Breakfast Television.

16.2 Funding Body

Department of Trade and Industry.

16.3 Contact

Mr Tam Fry
Special Assistant
Current Affairs Programmes
BBC TV
Lime Grove Studios
London W12 7RJ
England

Telephone

(44) 1 743 8000 (ex 5693/4/5)

16.4 Confidentiality of Information

None.

16.5 The Trial

This trial, sponsored by the Department of Trade and Industry, involved the use of an electronic information system to produce a live television programme: Breakfast Time.

Start Date

January 1983.

Finish Date

January 1985.

Number of Sites

One.

Number of Users

There are twenty eight terminals which are used on a shift basis by approximately forty eight staff.

User Status

The production of Breakfast Time requires the involvement of a considerable number of people, all of whom have access to the system. Users include editors, producers, assistant producers, reporters, directors, production assistants, secretaries and presenters.

Responsibilities

The Breakfast Time Electronic Newsroom System facilitates the production of a two and a half hour live television programme which went on air on 17th January 1983. The automated system was included at an early stage in the planning of the programme as a means of support to the extra scriptwriting and complex programme management required for a programme of this length. The system handles production of all scripts for the programme, all administration associated with the programme and provides an electronic link to the autocue to enable last minute changes.

16.6 Equipment

Hardware

The system comprises two Hewlett Packard 44 series minicomputers: a master central processing unit and a back-up machine - each with three megabytes of memory.

Twenty eight terminals are used in the production office of Breakfast Time. All terminals have an integral printer. There are also four daisy wheel printers which are required to produce the high quality print-outs required for scripts.

Two microcomputers are also used. An HP9826 is used to capture six news wire services and handle code conversions and transfer items to the main computer. An Autocue 2000 receives the scripts in half hour segments from the HP3000 for display to the presenters on the air.

Software

There are three basic informational facilities: copy, diary and shelf which file the programme's raw data. In addition to the minute-by-minute news agency coverage, the daily events diary cross references and sub-divides entries under 80 categories. In addition, the electronic 'shelf' stores scripts which are ready for transmission.

The scriptwriting software allows the journalists word processing facilities and can also add presenters' names and check that each script has been passed for transmission.

The administrative facilities provided by the system allow the programme's executives to keep check of the story assignments made, their progress through the production cycle, and the transmission order. In addition, each member of the production

team has his own 'personal' part of the system and has access to 'office automation' facilities such as electronic mail.

16.7 Aims and Objectives

The aims and objectives of this pilot trial were influenced heavily by the length of the television programme (a two and a half hour live show); by its content (a mixture of news, current affairs and sport); and by its 24 hour production cycle, which created many demands. These included:

- a high volume of scripted material for each programme

- close co-ordination between different functions by people with different skills and experience

- a shift system which involves writers preparing scripts for transmission the following morning when they themselves will not be available

These requirements indicated that such a programme would demand some changes in working methods and a more formal support system. The benefits which it was hoped would be introduced by the system included:

- Story profiles which would enable shift working and a 24 hour programme production cycle. Writers input instructions to the system on how items should be produced and thus do not need to be present before and during transmission.

- Running orders held on the system would be easy to resequence, update and access at a number of locations. Traditional methods using marker boards were felt to be adequate for programmes containing up to twenty items but would be cumbersome and possibly inoperable for a programme with a hundred or more items.

- A smoother production process was expected because support was provided earlier and there would be the opportunity for more detailed planning and tighter co-ordination.

- Increases in efficiency were expected to give the programme team more time for decision making and developing items and thus increase the quality of the output.

- The system was expected to provide a 'safety net' for the programme in providing an alternative source for key information and a structured process to ensure that the key steps and functions are not overlooked.

16.8 Evaluation

As one of the Department of Trade and Industry sponsored pilot projects this trial was reviewed using a similar evaluation methodology to that at other sites. Reviews or 'snapshots' took place at regular intervals during the two year trial period. The methodology differed from that used at other sites, however, in some significant ways. Firstly, the nature of the application (a 24 hour production process) and the nature of the equipment meant that few objective measures were possible. Activity logging was felt to be inappropriate for these circumstances due to the pressures of work. The system itself had no logging capability, thus leaving only subjective measures of system performance and achievement of objectives. Interviews were carried out with members of the production team in order to gain this information.

The second potential problem in evaluation concerns the lack of previous experience of an application of this nature. Before the Breakfast Time programme there were no experiences of using such a system, nor of a regular two and a half hour live programme. Thus, it was difficult to gain any baseline information of user expectations.

16.9 Results

The pilot trial which supports Breakfast Time television is a success. The system works well and is a tool which has become an integral part of the lives of the production team. The success of the system is impressive, especially as the broadcasting environment is demanding. The system is used by personnel who move around frequently and it therefore needs to be easy to use and easy to learn. It is also in use 24 hours a day, thus demonstrating reliability, and it is robust enough to cope with constant usage. Such attitudes can rarely be applied to office automation systems.

The hoped for benefits of the system have also been evident in terms of cost savings, efficiency, effectiveness and, to some extent, increased quality. The electronic connection to the autocue creates approximate savings of £100,000 because of the simplified nature of the system. From the journalists' point of view the ability to create and edit scripts quickly and easily is the major benefit. In addition, the ability to incorporate last minute changes and additions direct to the autocue is useful. There is also some feeling within the production team that the electronic system aids the quality of the journalism: giving more time to think and plan.

Future developments of the system are difficult to predict. Breakfast Time will continue to use the system now that the trial has ended: few people can imagine running the programme without it. Its use on other programmes, however, and future enchancements of the system to meet journalistic demands, will be determined by political and financial constraints.

17. STRATHCLYDE REGIONAL COUNCIL

17.1 Organisation

Strathclyde Regional Council.

17.2 Funding Body

Department of Trade and Industry.

17.3 Contact

Ms Lala McCall
Project Manager
Strathclyde Regional Council
20 India Street
Charing Cross
Glasgow G2 2EF
Scotland

Telephone

(44) 41 227 3241

17.4 Confidentiality of Information

None.

17.5 The Trial

The trial was designed to improve the level of service and to increase productivity in this local authority's administration. It was decided that the trial should be implemented in the Council Policy and Resources Committee.

Start Date

October 1982.

Finish Date

October 1984.

Number of Sites

One.

Number of Users

There are 29 workstations, some of which are used full time by word processing and secretarial staff. Clerical staff share equipment and, with executive staff, make intermittent use of equipment.

User Status

The user groups are:

- word processing pool
- secretaries
- committee staff
- senior executives
- industrial development unit

Responsibilities

Strathclyde is the largest regional authority in Scotland, covering one sixth of the country's area and providing a range of services to half the population. It is administered by 103 elected councillors and a staff of 109,000, and has an annual revenue budget of around £1,400m. The chief executive is the

Council's principal policy advisor and his department (The Policy and Resources Committee) provides a variety of policy and administrative services, including the role of clerk to each committee.

17.6 Equipment

The project is based on the Honeywell Office Automation system (OAS) introduced to the UK in 1982. It comprises two Honeywell DPS6 mini computers driving 29 workstations, 12 printers and an Optical Character Reader. In detail, the specification is as follows:

Hardware

HPA 6/54 with OASF software
DPS 6/76 with OASF software
27 OAS workstations
12 55cps Spinwriter printers with dual hopper, cut sheet feed and acoustic hoods
2 Infowriters
1 Optical Character Reader

Software

Themis package on DPS8
Status on DPS8
Communications facilities

17.7 Aims and Objectives

The main objective of the pilot project was to assess the impact, relevance and applicability of the concept of office automation in Strathclyde Regional Council. Other objectives included the measurement of the validity of office automation techniques in relation to the major paper flow within the region's operations.

The pilot was also to investigate the range of facilities offered by Honeywell Office Automation Systems and to ascertain the most effective application of word processing, electronic mail, list/record processing and retrieval, electronic filing, OCR, viewdata and the integration with the existing DP network (DPS8) mainframe.

Finally, the trial aimed to assess the long term impact of the full introduction of the office automation in relation to management structure, office procedures, effectiveness and quality of service and operating costs.

17.8 Evaluation

In common with the other Department of Trade and Industry pilot trials, the progress of the trial at Strathclyde Regional Council was reviewed at regular intervals. The measures included pre- and post-implementation attitude surveys, a log of actual against predicted progress, system usage statistics, activity logging and logging of document turnround time. As with the other DTI sites the evaluation work was undertaken by consultants and reports of their findings produced. Different consultants were involved in the more mechanistic evaluation procedures (logs, system usage etc) than those who administered the attitudinal questionnaire.

17.9 Results

It was planned that the equipment would be installed in three stages:

Stage 1: Introduction of Word Processing to Committee Work

A word processing pool, including a supervisor and six typists was established to undertake all work related to agenda, reports to committee and minutes eminating from the Education and Policy and Resources Committee Section. At this stage hard copy drafts were returned to Committee staff for editing, ie only the typing medium was changed.

As a second step of Stage 1, the secretaries of senior officers in the Chief Executive's Department were supplied with OAS Units to provide office automation for senior officers and allow them to generate their own reports and correspondence through OAS Units.

This stage was successfully completed early in 1983 and considerable benefit in productivity became increasingly evident.

Stage 2: Gradual Implementation of the Other Functions within the OAS System, the Committee process and variety of Executive Applications

Workstations were installed in the Committee Sections to allow clerks and their staff to create their own documents or perform their own editing on documents created in the Word Processing Pool. OAS Units were installed in three such sections, the General Minutes Section, Policy and Resources Committee Section and Education Committee Section. Standard text and formats were created for certain agenda and correspondence regularly used by Committee Clerks. This could be simply amended (eg by addition of dates, etc) thereby allowing clerks to assemble agenda and minutes without resorting to draft documents.

Files of reference data were created which are regularly used by the committee staff. This includes:

- standard orders
- financial regulations
- committee diaries
- membership of committees, etc

The content of these files was agreed with the sections involved and typing resources were supplied by the word processing pool. All officers in the pilot had access to these general reference files.

OCR and electronic mail were developed during this stage and are used as an integral part of the agenda/minute/correspondence process by typists and clerks.

Workstations were also installed in the offices of two principal officers responsible for Education and Policy and Resources respectively and are used for editing and as executive workstations. Special and personal files for principal officers have been created to assist in management activities, including diaries, meetings lists, telephone directories, etc.

During Stage 2, all members of the pilot group tested, in depth, the particular facilities relating to their needs (all facilities were available to all members of the group however). During this period the executive/secretary use of equipment was examined by experimenting with different methods for diary and other 'desk' related information.

Considerable benefits of this type of use became apparent from the procedural studies carried out in preparation for the introduction of this stage. Standardisation of agenda, minutes and correspondence required less work by clerical staff. In addition, it became apparent that the greater access and ease of access to filed documents was a significant improvement over traditional methods. The staff involved who previously had no computer or keyboard skills responded and adapted well to the new equipment and exploited it for new additional uses. The use by principal officers was, however, less successful and it was felt that further development in system software was required.

Stage 3: Introduction of DP Related Tasks to the Project

The two key areas of this stage were:

- the use of an information storage and retrieval (Status) package on the mainframe (DPS8) accessed through OAS, related to files created within OAS

- viewdata on the mainframe but accessed through OAS (DPS6)

The investigation of these areas began with testing of simple applications and was expanded to examine the scope of the inter-relationship between OAS, mainframe and viewdata and their relevance to particular application areas.

Two viewdata applications were mounted as a parallel element of the pilot scheme. One related to the distribution of information on the industrial development function of the region was developed in association with the University of Strathclyde. The second was designed to provide an information service to elected members of the Regional Council on current affairs, committee business, Council procedures and a wide range of general information on Council business, members, officials etc.

There were delays in implementing records processing and the archiving and retrieval of information on the mainframe. The success of the pilot is agreed by all parties involved and plans to extend office automation in other areas of the Chief Executives Department are well advanced. The pilot system has, however, been criticised by some personnel. In particular senior executives feel that the facilities provided do not meet their needs: the workstations are oriented towards secretarial use rather than executive use. The propriety of the use of office automation by senior management was also questioned: people management was felt by some to be an interpersonal issue rather than a technological one.

Despite these reservations the system is being expanded and the clerical and secretarial users find its facilities invaluable. The pilot trial has been a valuable lesson in learning of the problems of planning and implementing office systems. The experiences are now being utilised in the implementation of a large scale system.

18. NATIONAL COAL BOARD

18.1 Organisation

National Coal Board

18.2 Funding Body

Department of Trade and Industry:

- £250 OA equipment
- £60k consultancy support

NCB:

- £100k OA equipment
- internal management and administration

18.3 Contact

Colin Gribbin
NCB
Hobart House
Grosvenor Place
London SW1
England

Telephone

(44) 1 235 2020

18.4 Confidentiality of Information

None.

18.5 The Trial

The trial covers a two year period and is aimed at investigating the impact of introducing an OA 'system' (actually comprising two systems - see 18.6 below) into an established working environment. Four different levels of staff (top, middle management, clerical and secretarial staff) are involved and the evaluation covers procedural, organisational, attitudinal, financial, and operational factors.

Start Date

January 1984.

Finish Date

December 1985.

Number of Sites

Two actual sites are equipped - London Headquarters and Doncaster Regional Headquarters. Both are linked to a third location in Cannock, which is a large IBM mainframe installation. The users at this third site are not involved in the OA trial directly, but users at the other two sites access the mainframe via the OA system to extract data for local manipulation and analysis.

Number of Users

There are two sets of users. The main set is those using the OA system (which comprises two linked Wang VS systems - one at London and the other at Doncaster). There are about 75 users located in London and about 20 users located in Doncaster, for a total of approximately 100 users in the main set. The secondary set of users involves those people using a digital voice messaging system (Wang DVX). There are currently 260 users on this system, soon to be increased to about 400. All the users in the main set belong to this secondary set.

18.6 Equipment

London: - Wang VS 100
(VS system) - 2 x 288 megabyte disk drives
- 27 x 5300 workstations
- 6 x PC's
- 3 x daisywheel printers
- 2 x matrix printers
- 2 x laser printers
- 1 x Professional Image Computer
(DVX) - 2 x 288 megabyte disk drives
- 1 x 80 megabyte disk drive
- 8 x I/O message processor ports
- 1 x matrix printer

Doncaster: - (Wang VS25)
- 512 kb main memory
- 1 x 34 mb disk
- 4 x 5300 workstations
- 1 x daisywheel printer
- 1 x matrix printer

* - 2 VS systems linked via Wang Systems Networking
Both VS systems linked to IBM via SNA

Facilities

- word processing)
- data processing) VS
- office communications)
- personal computing - PC
- image processing - PIC
- voice processing - DVC

NB - PIC operates as PC
- PC operates as VS terminal

18.7 Aims and Objectives

The aim was to assess the following:

- how oa impacts on people in the office
- requirements for recruitment, training and redeployment
- existing personnel as compared to specialist users
- effect on quality of working life
- reaction of Unions to OA
- 'hidden' costs and benefits

18.8 Evaluation

Basic components:

- attitudinal survey (user interviews)
- activity logging (self-completion forms)
- system usage statistics (machine print-outs)
- system performance (project records)

The approach is to conduct five evaluation 'snapshots' - one at the beginning of the trial prior to system implementation, and four others at approximately six monthly intervals throughout trial. Each snapshot collects relevant data and analysis results are compared with previous snapshot. A final evaluation report is to be produced at the end of the two year trial.

18.9 Results

Although the trial is still in progress, interim results indicate following:

- cost of planning and implementing has been underestimated

- users are currently enthusiastic - initial anticipation led to an early peak of enthusiasm, which was then followed by disappointment; but there appears now to be a steady climb towards positive attitudes

- training has been more important and costly than originally anticipated

- there has been a heavy demand on project support and it has been difficult for the team to cope - there has been a continual learning experience rather than an initial one

- there is an overall commitment to OA

- careful planning is needed

- costs are high but the benefits include added-value as well as cost savings

19. NATIONAL ECONOMIC DEVELOPMENT OFFICE

19.1 Organisation

National Economic Development Office.

19.2 Funding Body

Department of Trade and Industry.

19.3 Contact

Mike Bickers
Project Manager
National Economic Development Office
Millbank Tower
London SW1
England

Telephone

(44) 1 211 0325

19.4 Confidentiality of Information

None.

19.5 The Trial

The pilot was designed to provide word processing facilities throughout the organisation, and to develop a filing and retrieval system for papers and documents, using Systime hardware and software.

Start Date

November 1983.

Finish Date

December 1985.

Number of Sites

One.

Number of Users

There are 54 visual display units with a total of 116 user accounts.

User Status

The user groups have changed during the course of the pilot. At present, seven types of user group can be identified:

- Project Team
- Directors
- Section Heads
- EDC Secretaries
- Administration Assistants and Clerks
- Secretaries
- Section Typists

The majority of the regular users are the 22 secretaries and section typists.

19.6 Equipment

The trial involves an 8750 computer running Systime's office automation software (TXP) and includes a word processing facility (Word-11). In addition NEDO has purchased, outside of the pilot trial, a separate system from Systime which was installed in the typing pool. This is an 8730 computer running Word-11 for word processing only.

19.7 Aims and Objectives

- To provide the organisation with word processing facilities.

- To develop a filing and retrieval system for papers and documents.

- To introduce office automation facilities.

19.8 Evaluation

Reports on the pilot system development have been submitted each month to a NEDO Project Management Committee, and a Project Log has been kept, detailing any incidents or problems. In addition, the pilot has been monitored, by means of a series of snapshots, in a similar way to other DTI office automation pilots.

19.9 Results

The current state (July 1985) of the pilot is not identical to the plans originally laid out: delivery of hardware and software has lagged behind schedule, and objectives are slow to be achieved.

Progress towards the three objectives for the trial is so far limited to the following:

- the isolated word processing facility on the 8750 is used by all secretaries, all section typists, and some professionals

- a limited filing and retrieval facility in TXP has been delivered, but needs further work to be acceptable.

- the office automation system (TXP) has been installed, but it is incomplete and is not integrated with the word processing facility of the 8750. This obviously puts a major constraint on the use of a filing and retrieval facility as it will not be possible to transfer documents produced using Word-11 into the TXP system.

There are a number of other problems remaining which need to be ironed out:

- the system is not fully reliable, since it is subject to crashes and shutdowns

- it is not possible for the system to support all the secretaries, section typists and professional staff currently on the system, since it is now over-subscribed. This in turn means that the facilities provided by the system are not, in effect, being given a fair trial; nor are the users being given a fair trial with the system

The objective of introducing wide-spread word processing has, however, been achieved. The software combined with the hardware currently in use is not supplying the users with a totally reliable facility, but the word processing facility itself has performed reasonably well and has been very effective within NEDO. Thus although the system's functionality is problematic, the situation is encouraging if viewed in terms of introducing office automation throughout NEDO.

TELDOK

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

Bertil Thorngren, the Swedish Telecommunications Administration (televerket), +46 8 713 30 77

Göran Axelsson, the Swedish Commission for Informatics Policy (Datadelegationen), +46 8 763 42 05

Bengt-Arne Wedin, the Swedish Council for Planning and Coordination of Research (Forskningsrådsnämnden), +46 8 23 25 20

Birgitta Frejhagen, the Swedish Trade Union Confederation (LO), +46 8 796 25 00

Agneta Qwerin, SSI, +46 8 738 48 62

Nils-Göran Svensson, the Swedish Federation of Data Processing Users (Riksdataförbundet), +46 8 24 85 55

Peter Magnusson, the Swedish Central Organization of Salaried Employees (TCO), +46 8 790 51 00

P G Holmlöv, the Swedish Telecommunications Administration (televerket), +46 8 713 41 31

Publications in English by TELDOK

TELDOK Report 6. The automated office. A description and some human factors design considerations. (With a summary and articles in Swedish.) November 1983.

TELDOK Report 11. New telecommunications technology – New organization? June 1984. (Also published in Swedish.)

TELDOK Reference Document B. Office automation in Europe. February 1983.

TELDOK Reference Document C. Office automation in Japan. February 1983.

TELDOK Reference Document D. Office automation and related technologies in Japan. February 1985.

TELDOK Reference Document E. Office automation in the US (Partly in Swedish.) February 1985.

TELDOK Reference Document F. Office automation in Europe. An update. October 1985.

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 supplementing 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 telecommunications systems, particularly for office use.

The address is: TELDOK, c/o PG Holmlöv, KP, Room H33:21,
Swedish Telecommunications HQ, S-123 86 FARSTA, SWEDEN.

ISSN 0280-9583