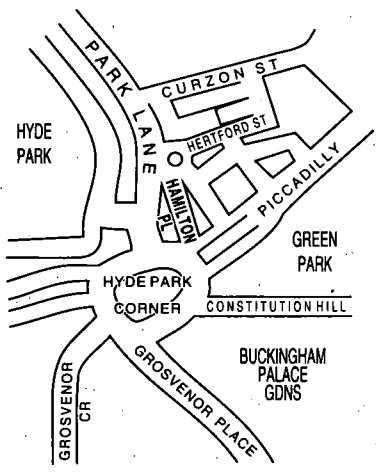## Programme for the 1999/2000 season of members' meetings

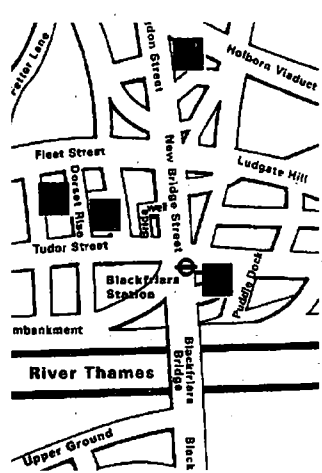| December 7th 1999 | Data Protection Act
Jim Burke - BAA plc | Late afternoon |
January 25th 2000	Basic Internet security, to include e-mail and Web surfing risks and controls	Full day briefing
April 4th 2000	E-commerce security, going beyond basic Internet risks covered in the earlier meeting	Full day briefing
May 16th 2000	BS 7799 developments Derek Oliver - Ravenswood Consultants	Late afternoon

The late afternoon meetings are free of charge to members. For full day briefings a modest, very competitive, charge is made, to cover both lunch and a full printed delegate's pack.

Venue for
Full Day Technical Briefings

HYDE PARK

PARK LANE

CURZON ST

HERTFORD ST

PICCADILLY

HAMILTON PL

GREEN PARK

HYDE PARK CORNER   CONSTITUTION HILL

BUCKINGHAM PALACE GDNS

GROSVENOR CR

GROSVENOR PLACE

Royal Aeronautical Society,
4 Hamilton Place
London W1V 0BQ

Venue for
Late Afternoon Meetings

Fetter Lane

London Street

Holborn Viaduct

Fleet Street

New Bridge Street

Ludgate Hill

Dorset Rise

Tudor Street

Blackfriars Station

Puddle Dock

Embankment

River Thames

Blackfriars Bridge

Upper Ground

Black

KPMG
1 Puddle Dock, Blackfriars,
London EC4V 3PD

Contents of the Journal

Letters to the editor are welcome as are any other contributions. Please contact the appropriate person on the editorial panel.

EDITORIAL

About 18 months ago the Government published a Green Paper titled *Government Direct*. Being a cynical sort of chap, I read it and then totally ignored it on the basis that nothing would come of it. How wrong I was. I am only now beginning to realise that the Government appears to be going full steam ahead on implementing many of the initiatives mentioned in the paper. Why my interest in this? Well, I have reproduced most of the Green Paper in this edition of the Journal as by 2001 the Government plans to conduct twenty percent of its business electronically and this will have an impact on us Joe public. Couple this with the proposed Freedom of Information Act, the Information and Computer Security Standard (BS7799) and the new Data Protection Act and you start to see that Computer Auditors will have to get to grips with the implications of electronic 'trading' between their organisation and the Government. Being cynical again, I see a great opportunity for the Government to turn even more of us into criminals by requiring us to submit more things to them in electronic format, with penalties if we do not deliver. It also provides more opportunities for the Government to cross reference things than it can do at the moment and possibly use data mining to find patterns that they are currently unaware of and thus provide for new taxation opportunities. Whichever way you look it, theirs or mine, it is essential that we Computer Auditors are in a position to ascertain the likely impact on our organisations. So although you may consider it to be a lengthy read, although actually it reads very easily, I urge you to spend a little time studying the content. Forewarned is forearmed as they say in my local pub.

We also have the latest BCS news from Colin Thompson, an introduction to the admissability of computer evidence by Paul Plane and a well made point from David Chadwick on perhaps where we should be spending some of our reserves.

My compliments of the season to you all and a happy millennium, providing that *the bug* does not bring us all down.

John Mitchell

Chairman's Corner

John Bevan

The postponed AGM took place just after the November 15th Technical Briefing, followed by a committee meeting. There we set the dates and agenda for further meetings. I thought that you may like to know what your committee's priorities are, so here is our working agenda:

1. Committee meetings to follow scheduled members' meetings

2. Completing arrangements for this season's members' meetings.

3. Formalising the new administrator's job

4. Improving membership numbers and processes

5. Advertising and external promotion of CASG

6. Co-operating with other "friendly" groups: ISACA, ICAEW, IIA

7. Making better use of the Internet, our Website, etc.

8. Planning 2000/2001 meetings

9. New projects (employing our assets to benefit members)

10. Other matters arising e.g. the Journal, the next AGM, etc.

There are a host of other things that we could do, or talk about, but we must concentrate our efforts on completing the first eight items on time, as these underpin the success of our core activity: members' meetings . If any members would like to volunteer to work on any of these or other / new activities, just let me know. We always welcome new committee members!

GUIDELINES FOR POTENTIAL AUTHORS

The *Journal* publishes various types of article.

Refereed articles are academic in nature and reflect the Group's links with the BCS, which is a learned institute governed by the rules of the Privy Council. Articles of this nature will be reviewed by our academic editor prior to publication and may undergo several iterations before publication. Lengthy dissertations may be serialised.

Technical articles on any IS audit, security, or control issue are welcome. Articles of this nature will be reviewed by the editor and will usually receive minimal suggestions for change prior to publication. News and comment articles, dealing with areas of topical interest, will generally be accepted as provided, with the proviso of being edited for brevity. Book and product reviews should be discussed with the appropriate member of the editorial panel prior to submission. All submissions should either be on double spaced, single-sided A4 paper, e-mail, or on PC format diskette in Microsoft Word, Ami-Pro, or ASCII format. Electronic submission is preferred.

Submissions should be accompanied by a short biography of the author(s) and a good quality monochrome photograph, or electronic image.

Submission Deadlines

Spring Edition	7th February
Summer Edition	7th May
Autumn Edition	7th August
Winter Edition	7th November

Government Direct

A Prospectus for the Electronic Delivery of Government Services

The following article reproduces the Green Paper on the use by the Government of electronic means for communicating with the public. I downloaded it from the www.open.gov.uk web site which contains a stack of useful information on Government initiatives. Well worth a visit - Ed

FOREWORD

by the Chancellor of the Duchy of Lancaster and Cabinet Minister for Public Service

Over the past 15 years Britain has been at the forefront of public service reform with the creation of "Next Steps" Executive Agencies and the establishment of the Citizen's Charter and Deregulation Initiative. This Green Paper marks the beginning of a new phase of equally radical and wide ranging reform which will build on the existing programmes.

It will be founded on the new possibilities offered by information technology, and it will learn from the way that these are starting to be harnessed by other governments and the private sector. It will change fundamentally and for the better the way that government provides services to citizens and businesses. Services will be more accessible, more convenient, easier to use, quicker in response and less costly to the taxpayer. And they will be delivered electronically.

These will be better services and they will be different. The purpose of this Green Paper is to explain the Government's vision of what is possible, and to start a debate which will help everybody to get the most out of this new phase of public service reform, by ensuring that the new forms of service are aligned as far as is practicable to what the public wants.

As the Minister for Public Service I find the prospect of delivering services electronically direct to the public - of "Government Direct" - enormously exciting, and I hope that you will too. I believe that it will help to bring government closer to the individual and give citizens and businesses more control over their dealings with government. I hope that you will reflect on the prospectus set out in this Green Paper and, by giving us your views, help us to get the best out of Government Direct for everyone.

INTRODUCTION

Over the past 20 years information technology, or IT, has transformed everyday life. Whenever we obtain money from a cash machine at a bank or building society, whenever our purchases are passed through the laser scanner at a supermarket checkout, whenever we pay for a purchase with a credit or debit card, whenever a travel agent books a holiday for us with a major travel company, or whenever we make a call from a mobile phone, we are using powerful examples of modern information technology.

Government too has made extensive use of information technology, which now supports services to the public across the full range of government functions. However, unlike the examples from the private sector, government information technology is usually hidden from public view. In most cases, citizens or businesses who deal with government are expected to fill in paper forms and send or take them to a place where the information they contain can be fed into a computer. After processing, the response from government is printed out on paper and sent back through the post.

Information technology now makes it possible for citizens and businesses to deal directly with government if they wish to do so. As subsequent sections of this Green Paper will show, this will give them access to services with quicker - sometimes immediate - responses, which are available in more convenient places and at more convenient times. To draw a parallel with the private sector: in order to withdraw money from a bank or building society it was once necessary to fill in a cheque or a withdrawal slip, and take it to the counter when the bank or building society was open. Now, for those customers who choose, money can be withdrawn from a cash machine without form-filling, at any time of the day or night, seven days a week. The Government wants to bring the same or better levels of convenience to the services that it delivers directly to individual citizens and to businesses in the UK.

This Green Paper sets out a prospectus - a strategy - for a new way of delivering central government services across the United Kingdom. These services include providing information, collecting taxes, granting licences, administering regulations, paying grants and benefits, collecting and analysing statistics, and procuring goods and services. The Government intends to collaborate with Local Authorities in the delivery of services wherever possible. The strategy also includes new ways of working and sharing information between government departments and agencies which would improve efficiency.

The new forms of service delivery will be more efficient, more accessible and more convenient and they will also appear quite different from the arrangements we are all used to. They will only work if a substantial proportion of the public (both businesses and citizens) find the new forms of service delivery attractive. The Government wants, as far as is practicable, to tailor the new types of service to public demand. The purpose of this Green Paper is to seek public reaction to the service delivery arrangements it describes. Throughout the paper questions are posed to indicate the issues on which the Government would particularly welcome comment; but reaction on any of the material in the Paper is also welcome. Immediately after the Green Paper is launched, the Government will initiate a series of pilot schemes, so that members of the public can try the new forms of service delivery for themselves. Their reactions will shape the arrangements which are eventually launched on a national scale.

This Green Paper is addressed in the first instance to those who act as representatives of the general public, both citizens and businesses. Copies are available on sale from HMSO and its agents. The Green Paper can also be accessed via the World Wide Web at http://www.open.gov.uk/citu/cituhome.htm.

LOOKING AT OUR ACHIEVEMENTS

IT and Government Now

For many years government has made extensive use of computers to improve the efficiency of its services. Computers have improved accuracy and response times, and have benefited the taxpayer by reducing government costs. The following are a few examples chosen from many.

Citizen's Charter Unit - Local Performance Guide CD-ROM

Under the Charter, performance information on a range of public services (e.g. schools, hospitals, councils) is published every year. In order to make it more accessible, the Charter unit has produced a CD-ROM which contains performance information for the whole UK. The system is very easy to use, and is available free to members of the public.

Department of Social Security

Technical enhancements to the national unemployment benefits system (NUBS2) saved an estimated 8 million pieces of paper and removed the need for 1.5 million phone calls

Benefits Agency

The use of bar coded benefit order books in 1,465 London post-offices over its first year resulted in savings estimated at 50 million; recovery of lost or stolen order books rose from 23% to 85%

Interdepartmental Office Automation

A pilot project linking twelve local authorities, MAFF, OFT, and LACOTS (the Local Authority Co-ordinating Body on Food and Trading Standards) using well defined electronic messages to transmit information, has produced average savings of 76% and reduced error rates, in some cases, from 70% to zero.

Medical Investigation Computer System (MEDICS)

The DVLA MEDICS system deals with information about people whose medical history may affect their ability to drive. It converts paper documents received from doctors and the public into images which are stored on a computer. The system has reduced the time needed to deal with cases and made it possible to deal more quickly with telephone queries.

DVLA Optical Character Recognition/Intelligent Character Recognition (OCR/ICR) Vehicle licensing documents previously dealt with manually are now processed automatically and more cheaply, using equipment that reads not only pre-printed but also handwritten information.

HM Land Registry

Computerisation of land register records has enabled HM Land Registry to process registrations more quickly and efficiently, and to provide a fast reliable and friendly telephone information service to the public.

Recently government has been putting more and more information onto the World Wide Web. The site, managed by the Central Computer and Telecommunications Agency (CCTA), at http://www.open.gov.uk/, has been widely acclaimed.

The Government Information Service

The Government Information Service (CGIS) on the World Wide Web provides access to information about more than 300 public sector organisations. It contains details as diverse as press releases and basic contact details for all the major departments of state. One of the many awards it has received is the 1996 Networking Industry Award for the best use of networking products and services. It has been voted amongst the world's top 5% of web sites by the US POINT Corporation and it has been given a four star rating by the US Magellan Corporation. It has been visited more than 20 million times since it came into existence in November 1994.

Among the many items on this Web site is the new self-assessment income tax form.

Self-assessment income tax form

The Inland Revenue's electronic lodgement service will soon enable taxpayers agents, such as accountants or tax advisors, to lodge self assessment tax returns electronically through a secure gateway direct to the Inland Revenue's systems. Eventually it is expected that all citizens will be able to file their returns with the Inland Revenue, either from their own home, or perhaps from a public access terminal.

A number of other government departments and agencies are also experimenting with, and implementing, the direct delivery of services to the public via electronic media, as these examples show.

Automated First Registration and Licensing

Following a successful pilot in Bristol, motor dealers can register new cars through DVLA's Automated First Registration and Licensing (AFRL) Project. Information from the vehicle Manufacturer and new owner is assembled in the dealership and transferred electronically to DVLA. Dealers issue tax discs on their own premises, eliminating the need for journeys to the Agency's Vehicle Registration Offices.

Integrated Government Information

The Inland Revenue, Contributions Agency and HM Customs and Excise already make information such as public notices for the citizen available in electronic form, via the Internet. This includes an e-mail facility so that users can comment directly on the service. The three departments also provide integrated information via a World Wide Web page which brings together information on tax, National Insurance Contributions and VAT.

HM Customs and Excise, Customs Handling of Import and Export Freight (CHIEF)

HM C&E has developed CHIEF, an automated system for handling trade declarations for non-EC traffic. Importers, exporters or their agents may connect their IT systems directly to CHIEF, thus obtaining faster clearance of goods and the benefit of automated services such as duty calculation. The automation of Customs declaration processes has reduced error rates from about 15% to 3%, and has enabled Customs to discharge its responsibilities more effectively, efficiently and economically.

MAFF - Ear Tag System

Farmers can access MAFF computer systems to obtain their own unique batches of Ear Tag numbers for identifying their cattle.

Patent Office

Since November 1995 the Patent Office has been running a pilot service giving customers electronic access to the Office's databases for information on patents, trade marks and designs. A full service will be available shortly.

HM Land Registry

Legal and Financial institutions in the City and elsewhere in the UK enjoy instant access to the Land Registry's database via its Direct Access Service network

DVLA - Insurance links

Every year DVLA answers over 200,000 enquiries from motor insurance companies which are used to settle claims and detect fraud. An increasing number of these enquiries is now being answered electronically.

Ordnance Survey

Superplan Plotting System is recognised as the world's most advanced mapping system. It provides up-to-the-minute, site-centred mapping to customers from agents in towns throughout the country. The agents are supplied with mapping data by means of overnight electronic delivery from the central database at Ordnance Survey HQ in Southampton. Customised plots can be output to almost any combination of plot area, size, scale and map specification. An Area Measurement Service is also available.

DVLA - Vehicle Fleets

Companies who operate large fleets of vehicles will soon be able to relicense (tax) their vehicle electronically rather than with a paper form. A pilot is currently under way with Cowie Interleasing. IT and the Public

The Government has recently launched two initiatives to help people to adapt to the changing opportunities and demands of the information revolution. In February 1996 the Government launched an initiative under the Information Society banner, aimed in particular at small and medium-sized enterprises (SMEs). This brings together within a single framework a range of activities and support programmes for the business community. The initiative is designed to raise awareness, to demonstrate the practical benefits of adopting new technologies, and to spread best practice.

The Government places training and education in IT skills high on its agenda. The UK has the highest ratio of personal computers to pupils in schools in the world, equalled only by the United States of America. In November 1995 the Government launched Superhighways in Education, a 10 million programme of projects to explore the potential benefits of information superhighway technology in education.

The Government will soon launch a programme aimed at bringing familiarity with information technology to people who are beyond the scope of these existing schemes.

These initiatives exploit the world-class telecommunications infrastructure which has been built in the UK, and which benefits the nation as a whole. It is continuing to be developed by the private sector as a result of the Government's policies on deregulation and competition. Some 5 billion a year is now being spent on improving the UK's infrastructure, around half by BT and the other half by a wide range of BT's emerging competitors. The cable communications companies alone plan to invest a total of 10-12 billion on infrastructure in the UK in this decade. Cable networks will pass most homes by the year 2000, and radio technologies are likely to be capable of providing commercial high capacity links to more remote areas in the next few years.

IT and the Technology Foresight Programme

The Technology Foresight Programme was announced in the 1993 White Paper on Science Engineering and Technology "Realising our Potential". It brings together senior industrialists, scientists and engineers with Government to identify markets and technologies likely to emerge in the next 10-20 years. A common theme across all sectors of the economy has been the importance of IT and communications.

The Technology Foresight Programme has highlighted the importance of IT to fields including the leisure and learning, retail and distribution, financial services, and health and life sciences sectors. In the future IT will provide new opportunities and challenges that will affect every single industry and organisation, affecting many aspects of our daily life. Many consumer and business services will use IT as the normal delivery mechanism. There will be real, and sometimes quite radical, changes in the way in which we do business and we will also see the development of new businesses as a result of the application of the technologies. A major activity for the next round of Foresight - "ITEC into Everything" - will be to look in more detail at these changes for different sectors of the economy.

LOOKING AROUND THE WORLD

Around the world other governments are using information technology to deliver more convenient, more accessible and more efficient services. This section gives examples. The projects described have been selected from many which are being implemented.

Australia

The effectiveness of the service given to job seekers, by the Department of Employment, Education, Training and Youth Affairs, has been improved significantly by the use of IT. An important example has been the introduction of touch screens in the Job Centres. Between January and April 1996, 2250 touch screen units were installed in 320 Job Centres throughout Australia. The screens enable job seekers to search interactively all the jobs in the national jobs database maintained by the Commonwealth Employment Service.

The touch screens have provided job-seekers with a feeling of empowerment and a sense of real control over their job search. This will greatly assist Job Centres in promoting a more efficient and mobile labour market.

The Australian social welfare system has benefited considerably from its investment in IT. This investment has improved the efficiency of services and has enabled a more proactive style of benefit delivery. This has been aided by sympathetic use of data comparison to check the information given by individuals on different occasions when making claims. If this process of data comparison reveals discrepancies (e.g. in numbers of dependants, income, or allowable outgoings) then the discrepancy is investigated. If it is an innocent mistake then the records are amended and no further action is taken. If no satisfactory explanation is provided then consideration is given to further investigation and possibly prosecution.

New Jersey, USA

At Newark International Airport in New Jersey, USA, a pilot immigration control trial started in May 1993. It is called INSPASS (Immigration and Naturalization Service Passenger Accelerated Service System). The system is a means of improving passenger throughput at airports by reducing the time taken to leave the airport. If successful the system will help cope with the increasing numbers of travellers to the US which are expected to double over the next decade. Soon afterwards the system was installed at JFK in New York and Canada's Toronto airport.

INSPASS uses a machine-readable credit card-sized plastic card which may be issued to US citizens and frequent visitors. The system verifies the traveller's identity each time the card is used, using a three-dimensional image of the traveller's hand geometry stored on

the card. On arrival, the traveller goes directly to an INSPASS kiosk at passport control. A remote computer checks the validity of the INSPASS card, and compares the traveller's hand with the template stored on their INSPASS card. A central computer monitors the system performance. The entire passport control and verification process takes at most 30 seconds. So far, over 173,000 inspections have been made. The incidence of fraud has remained consistently near zero.

Spain

In Spain, the Vereda project provides self service to the public through touch-sensitive, multimedia terminals. The terminals are located in public places, and allow access to information and services from a wide range of organisations. These include both public and private sector organisations, providing information on things such as insurance, financial and entertainment services, as well as public administration. The Vereda terminals are simple to use. 90% of their functions can be used without a keypad, and each terminal can respond in several European languages.

The Spanish Social Security is using a new system to help the administration of benefit payments - the TASS project. The new system allows people direct access to information, provides new services, and improves the administration of benefits payments. For the time being, benefits are still paid through the existing Spanish Social Security system rather than the new system. To prevent impersonation, people may choose to uniquely identify themselves to the system using a Smart Card. This is a plastic card containing a computer chip. Part of the information stored on the computer chip is an individual's finger print. The terminal examines the finger image of a citizen before giving information such as their work history and benefit entitlement.

California, USA

A successful pilot scheme has been run in Tulare County, California to enable welfare benefit claimants to make their applications using terminals with touch-sensitive screens. The system was designed to be easily used by people with low literacy levels (and those whose language of choice is not English - for example, those first language is Spanish). The system was able to check claims automatically for consistency and plausibility and ask the claimant to look again at any areas which appeared to contain errors. The system was also able to make a preliminary assessment of whether the claimant was likely to be eligible, together with its reasoning, and forward the claim to a caseworker for a final decision to be made. A pilot project along similar lines has also been run in Illinois, US.

New Brunswick, Canada

In New Brunswick a range of government services is being provided in new experimental ways. These include: "one-stop-shop" government offices in which counter staff use IT systems designed to carry out a wide range of government transactions; public access terminals using touch-sensitive screens; and services provided to the home by telephone or personal computer. Electronic service delivery is cheaper than paper-based arrangements, and customers receive certain kinds of electronic services at a discount from the normal price.

Singapore

In Singapore, an extensive and well-established arrangement exists for the electronic delivery of government services to businesses. All individuals as well as business tax payers may arrange with their banks for payment of taxes (including Income Tax, Goods and Services Tax, and Custom Duties) via electronic funds

transfer to the revenue departments.

Members of the public can also access the Electronic Valuation List for information on property ownership and tax assessment. Lawyers handling conveyances of properties can send in their searches and receive their replies electronically.

Businesses have direct access to a wide range of government databases. These include access to financial highlights, accounting ratios and other information about any company registered in Singapore.

All trade and customs documentation for goods flowing through the airport and port of Singapore are processed electronically by the relevant Singapore government authorities. Payments of the necessary duty and other incidental charges are also made electronically.

SETTING A STRATEGIC DIRECTION

The Government is determined that the methods of direct service delivery which information technology is now making possible, should be harnessed in the UK in order to:

◆ provide better and more efficient services to businesses and to citizens

◆ improve the efficiency and openness of government administration, and

◆ secure substantial cost savings for the taxpayer

It is the Government's intention to provide services, delivered electronically, which will be of world standard in quality, efficiency and value for money.

As governments across the world from Canada to Denmark have found, achieving these aims requires a strategic approach which looks across the whole of government. To provide such a strategic view the Government set up the Central IT Unit in the Office of Public Service, Cabinet Office, in November 1995. The unit reports to the Chancellor of the Duchy of Lancaster, the Minister with day-to-day responsibility for the Civil Service.

In February 1996 the Prime Minister announced the establishment of a new Ministerial Group to identify and take forward significant cross-departmental initiatives in information technology, to ensure that developments in the field are exploited to the full in the national interest. The Group is chaired by Lord Cranborne, the Lord Privy Seal.

Many Local Authorities are working towards similar goals, often in association with Business Links, Training and Enterprise Councils and the private sector. The Government welcomes these initiatives, and intends to collaborate wherever possible so that unified delivery of services can be achieved, without compromising the proper autonomy of local government.

How valuable would it be to have unified service delivery from different levels and types of Government body?

The Government is also discussing with the authorities in both Houses of Parliament how Information Technology might be used to support the flow of information between Government and Parliament.

SETTING OUT THE PRINCIPLES

The Government believes that its strategy should provide electronic services which are cost effective and affordable, and which conform to the following set of principles:-

Choice

The strategy should aim to make electronic direct delivery of services the preferred option for the majority of government's customers (both citizens and businesses). However, it is likely that there will always be people who are either not willing or not able to use such services. These groups should retain the option of a traditional face-to-face, telephone or paper-based service.

Confidence

The strategy should safeguard information collected from citizens and businesses and be seen to do so. The customer should be able to understand how this is achieved, should have access to their own data, and should be confident that personal and other sensitive information is protected, and is kept and used in accordance with the principles of data protection law.

Accessibility

The strategy should ensure that the opportunities afforded by information technology are used to simplify interactions between government and the public, providing, as far as possible, services which are available how, where and when the customer requires them. This could include the provision of an electronic "one-stop-shop" for multiple government services, convenient public access terminals, and out of office hours (perhaps 24-hour) service. Accessibility and ease of use will be particularly important to, for example, people in remote areas, people with limited mobility and people whose language of choice is not English.

Efficiency

The strategy should support the streamlining and integration of processes across the boundaries between government departments and agencies, so that those boundaries are invisible to the customer. It should also provide for the simplification and automation of routine processes, so as to reduce the need for manual operations and paper-handling, particularly in the areas of information transfer and dissemination. The strategy should also enable those dealing with government to obtain near instantaneous responses wherever practicable, and in cases where there is necessarily a delay, for customers to be able to obtain electronic progress reports on the handling of their cases.

Rationalisation

The strategy should provide for the sharing of resources for functions and processes which are common to more than one department or agency, thus reducing costs and simplifying systems. Similarly, information that is needed by more than one department should be shared, where this is legally permissible. Open Information

The strategy should rest on a clear commitment to make information of all kinds available electronically. This should cover the whole range of government information, barring that which needs to be withheld to protect personal or commercial confidentiality or in the public interest. Government should organise its information holding systematically so that publicly-available data is readily accessible electronically, in forms which will assist the improvement of UK competitiveness and open government.

Fraud Prevention

The strategy should ensure that public funds are protected from fraud. Measures should be included to establish the identity of individuals and organisations dealing with Government, and to ensure that information cannot be incorrectly accessed or manipulated. Many of these measures will coincide with those required to support the principle of confidence.

Are these the right principles on which to found the strategy?

APPLYING THE PRINCIPLES

Where We Are Now

While computerisation has already enabled great strides to be made in efficiency, government departments still mostly communicate with the public using paper.

Enhancing Customer Service

A key component in achieving the aims of the Government's strategy is to provide the public (both businesses and citizens) with the opportunity to send and receive, over electronic terminals, the information that currently passes between them and government on paper. In the case of businesses which already own at least one personal computer, information would be sent and received using a personal computer connected to a telephone line or high capacity datalink. Larger businesses would be able to link their information systems directly with those of government, so that routine information could pass automatically without manual intervention. (This is already done in some areas, for example to speed the customs clearance of goods at ports).

In the case of the individual citizen, special easy-to-use terminals with touch-sensitive screens, would be made available in places such as libraries, post offices and shopping centres. For some services, a telephone call centre may be provided, rather similar to those currently used for telephone banking.

Those who own personal computers will, of course, be able to use them to deal with government in much the same way as businesses. As the market for interactive services in the home expands (providing, for example, video on demand and electronic shopping), domestic terminals could be used to deliver government services. Such terminals might take the form of an ordinary domestic television set, linked to cable or satellite services or simply to a telephone line, perhaps through a "set-top box".

Whichever means is used, businesses and citizens will progressively have access to a wide range of government services. The terminal in the home or in the place of work could, in due course, provide an electronic "one-stop-shop" for government services, available 24 hours a day, seven days a week where appropriate, and offering as near to instant response as practicable.

This new arrangement for service delivery is shown diagramatically in Figure 2. Note that the systems which were originally independent, retain their separate identity. The Government has no intention of merging all the personal or sensitive information held on an individual or a business into a single database. The triangle sitting on top of the columns represents a new infrastructure, which will provide the link between the systems for particular services and the individual citizen or business.

The Government expects this infrastructure to be privately owned, but will ensure high levels of service quality through carefully monitored and incentivised contracts. Government departments and agencies would contract for the electronic delivery of their services, just as today they might contract with the Royal Mail for the delivery of paper.

What are the implications of delivering government services electronically direct to the public?

Where might public access terminals be most conveniently located?

How important are electronic "one stop shops", twenty four hour access and near instantaneous response?

Delivering Efficiency through Rationalisation

Once government systems are linked together for the purpose of service delivery, it becomes possible to achieve additional efficiency improvements through the use of common services. For example, most of the systems which currently support the provision of government services need to maintain databases of customer names and addresses. Most people in the United Kingdom appear on more than one such database and some appear on many. Systems which are linked to provide a "one-stop-shop" could share a common address database which listed all addresses used by people. This would not only provide economies which would benefit us all as taxpayers, but would also improve the service government provides: it would only be necessary to tell government once when we changed address, for example. This proposal would only apply to information which is already held in a multiplicity of government departments and the aim would be to improve efficiency by reducing duplication.

At present there are legal restrictions which would inhibit the sharing of data between departments in some cases. The Government will consider whether legislation would be necessary or appropriate to allow sharing of data.

There are other ways in which the linking of currently separate government information technology systems can bring benefits to the public and the taxpayer. One is by reducing the need to pass paper between government departments - for example, for the purpose of policy co-ordination. This would be achieved by the provision of a secure government-wide electronic mail system. A gateway to this system would allow government departments to exchange information with the public by e-mail and gain access to commercial information services. This would deliver improvements in efficiency and service quality.

It is also possible to provide special information networks to link areas of government where there are heavy information flows. For example, projects already exist to link the elements of the criminal justice system electronically, so that paper files which currently pass between the police, the prosecution service, courts, the prison service, the probation service, lawyers in private practice, and other agencies, would be replaced by secure arrangements for accessing and using the information electronically. This will produce a more efficient criminal justice system, saving money, reducing administrative errors and ensuring the timely provision of information.

The addition of the extra connections between government departments and agencies are shown as two extra bars in Figure 3, one of which links all government departments to provide general electronic communication, while the other links only selected departments for specific purposes, such as improving the efficiency of the criminal justice system.

What are the implications of service rationalisation?

What kinds of information would it be convenient to be able to tell government only once?

What are the implications of sharing data between government departments?

What benefits would follow from the wider use of e-mail for communication between government and the public?

Providing Access to Information

There are yet further ways in which linking government information technology systems together can benefit the nation. To do its everyday business, government amasses enormous quantities of data about a wide range of aspects of our national life. Much of this data is sensitive for personal, commercial, legal, or other reasons and must be held securely by government and not disseminated further. But much information (particularly statistics) can be derived from this data and made widely accessible, without revealing facts about individual people or organisations. There is also information that is not sensitive in its original form and which can and should be published.

It is the Government's intention that as much as possible of this information should be made available electronically and be organised, perhaps using a geographical database, so as to make it easy to draw together data from different sources.

The Government believes that the provision of such an information service, probably on the basis of a partnership between government and the private sector, has the potential to improve UK national competitiveness. To take one example from the business domain: if it were possible to access information on particular locations in the UK, and quickly obtain information on their transport infrastructure, local labour market conditions, environmental planning guidelines and the availability of special grants, then this might increase still further the UK's attractiveness to inward investment. The Inward Investment Bureau of the DTI have already developed a system along these lines for use by them and their Agency partners in the UK aimed at improving the quality and speed of information they provide to potential inward investors.

An information service would also be likely to help the national economy by encouraging the development of new, commercial, information products based on government information. The Government is actively considering the future management of Crown copyright, with a view to developing a climate which encourages the growth of new information services.

Are any difficulties caused by the present Crown Copyright arrangements and if so how might they be reduced or removed?

There would also be benefits to open government. By making more accessible the information which is used in the development of Government policy, the information service would allow the citizen to be more fully involved in the democratic process.

What government information should be made available to the public electronically and in what form?

Under the Citizen's Charter, wide availability of information on public services, such as police or fire services, allows people to find out more about the services and ask questions about their performance. Such information is already made freely available on a CD-ROM, and would also be made available via public access terminals or via terminals in homes or places of work. The Government has announced that all departments and agencies will put their complaints procedures on the Internet, so that people can find out more easily how their complaint will be dealt with. The Government will also set up a page on the World Wide Web to allow people to make complaints and suggestions about public services electronically.

How can the electronic provision of information best support the principles of the Citizen's Charter?

Testing the Strategy Through Pilots

Many of the systems and services described above would be radically different from those which exist at present, and it is not possible to be sure which kind of service delivery approach would best suit the citizen or business. Nor is it possible to quantify exactly how great the efficiency improvements would be within government. It will be necessary to try out new ideas and modify them as experience and technology develop.

The Government therefore proposes to initiate a series of pilot projects designed to test customer reaction, and to measure efficiency and service quality improvements. The pilots will include the provision of information and other services through public access terminals and, via telephone and other telecommunications networks, to homes and businesses. Some of the pilots will build on activities already being undertaken by government departments. Many will involve the private or voluntary sector or both, and all will support the Government's Information Society Initiative.

The first of these pilots will be announced when this Green Paper is launched. Each pilot will be analysed carefully and the full strategy will be rolled out progressively over a number of years, allowing plenty of time for feedback and consultation as understanding and acceptance develops.

The Government expects the savings which would follow from the reduction in paper, the provision of common services and, in particular, from the rationalisation and redesign of Government processes, to more than pay for the new infrastructure required to deliver services electronically. The pilots will provide detailed information which will enable government and industry to quantify more accurately the required investment, the anticipated savings and the expected benefits to the public. In many cases the private sector will fund the pilots themselves in order to obtain the know-how which will enable them to bid with confidence at subsequent competitive tendering stages.

The results of the pilots will also inform the government's development of the necessary standards and policies which will provide the framework within which the strategy will be implemented.

Implementing the Strategy

Implementing the strategy will involve a very large capital investment, and is likely to take five to ten years. Large information technology projects, both in the UK and abroad, have met with mixed results, for example cost and timescale over-runs, and a failure to deliver all the planned benefits. The best value for money will be achieved by balancing the risks involved between public and private sector.

The Government is determined to protect the taxpayer from technical and programme risks, by placing responsibility for them where they are best able to be managed and controlled, which is in the private sector. Private sector contractors, selected by competitive tendering, will be expected to provide the necessary capital investment themselves, in return for payment only when services of an acceptable standard are delivered to the public. The assessment of public acceptability, technical risks, and costs of particular approaches provided by the pilots will enable the private sector to assume responsibility for these risks without including a substantial risk premium in their price. Soundings taken from industry indicate a readiness to respond to this challenge. Individual government departments would enter into contractual arrangements with the private sector for the electronic delivery of their services, and would be individually responsible and accountable for public expenditure

incurred under these contracts. Money to pay the contractors would come from part of the savings in the cost of government administration (the balance going to the taxpayer). This is the policy that the Government is following more widely within its Private Finance Initiative.

It will also be necessary, on practical and prudential grounds, to implement the strategy stage by stage (not necessarily with the same contractors at every stage) in order that the risks associated with each stage are strictly limited. Most probably implementation of the strategy would begin with the delivery of the simpler services (such as information provision) before going on to the provision of secure transactions.

When inviting tenders, opportunities will be given for organisations which already have extensive secure, service delivery systems (such as banks and building societies), to offer to deliver services over their existing systems or modifications to them, if this proves practicable and cost-effective.

What are the implications of implementing the strategy in the way described?

MAKING THE LINK

References have been made elsewhere in this Green Paper to public access terminals, domestic television sets with connections to telephone lines or Cable TV, call services and other means of delivering services to the public without the use of paper. This section explains in more detail how each of these systems works and, where applicable, how they are used already. They are all subject to the arrangements for safe data handling (for example the use of smart cards) described in the next section "Solving some problems".

The domestic television

Set top boxes already exist which enable a domestic television to be used to access online services such as the Internet over a telephone line. Televisions connected to cable systems may access similar services using the cable connection instead of a telephone line. It is likely that the new television sets which will receive digital television programmes (whether digital satellite or digital terrestrial television) will also have the ability to access online services, either using a set top box or an integrated unit. Information will be received via the digital television channel and information can be sent back using a telephone line. All of these systems could be used to access government services.

The personal computer

Personal computers can link to online services such as the Internet via a normal telephone line or a high speed data link and can be used to access government services both from the home and the place of business. In addition to displaying information on the screen it is also possible, although not yet common, for personal computers to be linked to cable or other kinds of television systems, so that the screen can display either broadcast material or information. All of these arrangements are suitable for the delivery of government services.

Link to computer systems

Companies will be increasingly able to pass routine data directly and automatically from their internal information processing systems to government systems. Information may also pass in the other direction, including requests from Government for the provision of routine information. The information may pass over a telephone line or over a high speed data link.

Banks and building societies

Banks and building societies already provide some of their services through public access terminals located in their front offices. It would be possible in principle for these also to deliver government services.

Public access terminals

Public access terminals are already in regular use for both public and private sector purposes in many countries around the world including the UK. Their design varies widely but usually incorporates a screen which is "touch sensitive" (a "touch screen"). This form of communication may be supplemented by a recorded voice. Some terminals also include a small television camera and microphone so that the customer can talk over a video link to a customer service assistant at a remote location (for example in a government office). The privacy of such a conversation can be increased by providing the terminal with a telephone handset. Many public access terminals include cardreaders so that payments can be made by credit or debit cards, and printers so that information on the screen can be taken away in printed form. In the future, the cardreaders could read the smart cards used to provide electronic signatures. (Refer to the section entitled "Solving some problems") Terminals may also include document readers that transmit an electronic version of a document presented to them. If the terminal is in a sufficiently secure location, it may also accept cash payments and issue valuable documents such as licences.

SOLVING SOME PROBLEMS

Knowing Who You're Dealing With

Electronic services are popular and widely used in many sectors of business. They are usually quicker to use, cheaper and more convenient, but they have meant doing some things differently. Most people are familiar with the idea of a Personal Identification Number (PIN), used to identify the customer at a cash dispenser. The principle is straightforward - combining a piece of information which the machine can read (the account details on the card), with another piece of information which is, or should be, known only to the holder of the account. The bank's computer checks that Account Number 12345 has a PIN of 5678, and if so dispenses the money.

What is not recognised generally is that the combination of these two pieces of information does the same job that we used to do with a signature. Where we used to sign a cheque, cash dispensers now accept this "Electronic Signature" instead. We have become familiar with the process, and now find it routine and unsurprising. And it is very useful - many travellers have been delighted to find that the same card, and the same PIN, allow them to get the money they need in foreign countries, because the computer systems are linked.

Some type of "Electronic Signature" is going to be essential to allow the widespread provision of electronic services by government. Ideally it should be possible to use it for more than one purpose, and ideally it should be possible to use it in other countries. There are several possibilities for doing this, and it is not yet clear which is the best, but there are two broad categories which need to be considered.

First, we need to consider how people can identify themselves to a computer using only what they can remember. The banks provide us with another ready analogy for this: it is how telephone banking works. When calling up a telephone banking service, from any ordinary telephone, customers identify themselves by answering two or three questions to which only they will know the answer. The questions are drawn, at random, from a longer list of questions and answers which they have previously provided, and it is the series of right answers that provides, in this case, an "Electronic Signature". It is likely that something of this type will be appropriate for some government services - but only for people who want to use them in this way.

Secondly, something like a cash dispenser card is going to be needed for dealing with machines like public access terminals or, in the future, with terminals in the home. If people are going to exchange information which may be private or personal with a computer, then they will need to be quite sure that they are linked to the right computer. Conversely, for some transactions government may need a higher level of certainty about the identity of an individual than the arrangements used for telephone banking.

This could involve the use of "smart cards". These are now familiar to most people, as petrol companies and retailers are now using them as "loyalty" cards, and banks and telephone companies are beginning to issue them too. They are the same size as a normal bank card, but include a small computer chip.

The principle of these cards is the same as the older magnetic stripe cards - a piece of information on the card is combined with another piece of information, like a PIN number, to ensure that the right person is using the service. The advantage of the Smart Card is that it is much safer. It is very hard to copy, and it can hold a lot more information, making it much more certain that the right person is using it. As an alternative to the PIN number, some Smart Card systems use what is called a "biometric" - data about a physical characteristic unique to the cardholder which is stored on the card. Examples in current use include the shape of a hand, the pattern of the iris of the eye or a finger or thumb print. The combination of the information on the card with "biometric" information obtained at the time of use, or with the PIN number, provides a high degree of certainty that the card can only be used by the true owner.

The Government proposes to explore the development of "Electronic Signatures" of both types - card-based signatures, and signatures based on lists of details known only to the individual - to allow citizens or authorised representatives of businesses to sign legally binding statements electronically in transactions with government, just as they currently sign forms or letters. An electronic signature would also provide the means for individuals to check personal information government may hold about them, and to correct it if necessary. A card of this kind is clearly a valuable document and to get one might require the same kind of identity checks as are needed to obtain a passport today.

But of course, just like cash dispensers or telephone banking, only people who wish to use services in this way would need smart cards or electronic signatures. People who prefer the current way of doing business could carry on doing so, but just as with the banking, it is expected that the electronic way will become more popular in time.

Smart cards in particular open up other possibilities - the cards can be used for more than one purpose. Just as credit cards are accepted today by some airlines as boarding cards for flights, making life easier for frequent travellers, so it would be possible for an "Electronic Signature" card to be used for more than one purpose. It would be possible for the electronic signature used for banking to be the same as the one for dealings with government. Alternatively, it would be possible for the same card to hold two or more electronic signatures: one recognised by government, and another recognised by a bank, and so on. It would also be possible for a card to contain other kinds of data (emergency medical data such as blood groups or allergies, for example). If such data were stored, it would be done in a way that prevented it being accessible to machines reading an electronic signature and vice versa.

What is clear, however, is that electronic signatures of some form are already part of everyday life, and can be expected to be more so in the future. They will be cheaper and more convenient for many transactions. The Government intends to carry out evaluations of available systems and conduct trials to find out the type of electronic signature which works best, and which is most convenient for people to use.

What are the implications of using electronic signatures in transactions with government?

What are the implications of electronic signature cards having additional functions (e.g. to carry electronic signatures recognised by private sector organisations, to carry medical or other personal data)?

Protecting Individuals' Interests

People obtaining government services by electronic means, and people about whom government departments exchange personal information, will want to be assured that their interests - such as their reputations, their finances, their entitlements and their prospects in life - are properly safeguarded. Information about them must not be misused, wrongly disclosed, accidentally revealed or fraudulently obtained. This requires proper handling of data in accordance with data protection law, and use of appropriate technical measures to ensure its physical safety.

Data protection

The handling of computerised data in the UK is currently regulated by the Data Protection Act 1984. Under this act data users, including government departments, have to register with the Data Protection Registrar, and comply with a set of data protection principles, combined with more specific provisions for particular kinds of data. Individuals have rights of access, correction and erasure of inaccurate information, and of compensation in certain circumstances. The data protection principles - a form of good practice code - cover such matters as:

◆ fair and lawful obtaining and processing of data,

◆ specification of the purposes for which it is to be used,

◆ when it may be disclosed, its accuracy and its adequacy, physical security.

All these rights and protections, including physical security, will continue under the EC Data Protection Directive, due to be implemented by October 1998, and some of them will be strengthened. The Government intends that the new methods of service delivery outlined in this Green Paper will be developed in accordance with the requirements of the UK's international data protection obligations. It will consult the Data Protection Registrar during the development of this strategy - so that the collection, use and disclosure of data can comply with the necessary requirements and meet the necessary standards of protection including physical security. The commitment to consultation on all these issues will apply equally once the EC Data Protection Directive is in force, either with the Registrar or with any successor body.

How can the Government ensure suitable protection for individuals when using the new methods of service delivery?

Physical Security

People will want to be satisfied that no one will gain access to sensitive information by impersonating them, 'hacking' into government computers, or eavesdropping on electronic transactions.

The Government has always attached very great importance to ensuring that sensitive personal and commercial information is properly safeguarded. Government computer systems which handle such information at present have a history of very high standards. Financial institutions such as banks, building societies and insurance companies also operate computer systems which handle sensitive data, and some of these systems already provide for the electronic delivery of services. They too have a history of very high standards of data safety. The Government intends to draw on their expertise and methods as well as its own, to ensure that information continues to be kept safe when electronic service delivery is introduced.

In particular, the Government intends to adopt the principles underlying the bank card and extend them to the 'electronic signature' of government documents, as outlined in the section "Knowing who you are dealing with". Any smart card issued by government to entitle people to electronic services, would be useless to a thief - the card would only work when combined with a PIN or biometric data, which a thief would not have. No personal data need be stored on the card for it to perform the electronic signature function, and if it was decided that a smart card should carry personal information, it would be in encrypted (or scrambled) form.

Banks and other financial institutions test their computer systems rigorously to ensure that there is no means of access for the expert criminal - the hacker. Government already tests its own computer systems in the same way, and proposes to work with internationally respected experts to ensure that the new systems for electronic service delivery are tested thoroughly.

Highly sensitive information in electronic transactions with government would be encrypted (scrambled) when it was passed over public telecommunications systems, to prevent eavesdropping. This would also ensure that the electronic messages are both genuine and have not been altered. It is what banks do at present to protect financial transactions. Additionally, encryption can contribute to protecting against hackers.

Some of the measures providing the greatest protection for information may carry penalties in terms of cost or inconvenience, and it may not be appropriate to treat all information in the same way. A banking metaphor may be appropriate. Most people would be happy to keep a small sum of money under the clock on the mantelpiece; most people would expect to keep a large sum of money in a bank or building society. Similarly with information: some may not be particularly important and need only routine safeguards; some may be particularly valuable or private and so need special protection; some may not be particularly important in isolation, but may become important when combined with other information or aggregated. The Government intends to draw on the response to this Green Paper and the results of its pilot projects in assessing which approaches are most appropriate to different circumstances.

What technical measures are needed to ensure public confidence in the electronic handling of information?

Data Donors

Some kinds of transactions with government require the customer to provide documents produced by other organisations. For example, obtaining a new tax disc for a car when paying Vehicle Excise Duty requires provision of an insurance certificate and, if the vehicle is more than three years old, an MoT test certificate. For such transactions to take place at an electronic terminal, it is necessary to replace the certificates by the electronic transfer of properly authenticated information. This would mean that, when a tax disc was applied for, the existence of a suitable insurance policy and a current test certification would be checked using information stored on databases without the need to examine paper certificates. In this

example, motor insurance companies and MoT test centres would act as "data donors", providing information to enable a transaction between government and the customer to go ahead. Smart cards may provide a means of authenticating some of the data and transactions. Such a system would also help to reduce insurance evasion, contribute to improvements in road safety, and possibly lead to a reduction in insurance premiums.

Some transactions with government (e.g. to claim a benefit) require proof of financial circumstances. This might be provided by one or more financial institutions such as a bank or a building society. Clearly, such institutions cannot send information about their customers to government on a regular basis. However, an arrangement might be put in place whereby a customer could authorise government, using their smart card, to request specific data from financial institutions. Arrangements would have to be put in place between government and financial institutions, to enable such authenticated requests to be forwarded and responses supplied to government, perhaps with a copy going to the customer.

What are the implications of the concept of the "data donor"?

REAPING THE BENEFITS

Benefits for the Citizen

This section describes some examples of how services might appear to the individual citizen when they are delivered in paperless form. They are necessarily preliminary rather than definitive descriptions, and the services eventually delivered nationwide must be expected to appear different in respect of many detailed (and perhaps some substantial) aspects. This will be a natural consequence both of learning from the pilot schemes which the Government intends to launch, and of giving private sector contractors every opportunity to propose innovative ways of delivering services. Nevertheless, they should serve to give a general impression of what the strategy is intended to deliver to the citizen.

All of the services will be accessible and easy to use. They will be available via terminals, either in the home or in convenient public places such as libraries, post offices and shopping centres. And they will be available alongside a full range of other services, including Citizen's Charter information, thus providing an electronic "one-stop-shop" for Government. They will provide interactive guidance as users work through questionnaires and forms, making them simpler and quicker to use than paper-based forms. The services could also be available over an extended working day and at weekends, and for 24 hours a day, seven days a week where appropriate. Responses will be as near to immediate as practicable, and where an immediate response is not available, it will be possible to obtain electronic reports of progress. The services will be linked so that it will not normally be necessary to tell government the same information (for example, about a change of address) more than once.

Citizens will have greater ease of access to the information that government holds about them, and be able to check it and initiate correction if necessary.

Job Seekers

Jobcentres receive information from the Employment Service database of vacancies. In the future, employers could also notify the Jobcentres of their vacancies using electronic mail. All of these vacancies could be displayed on computer terminals at the Jobcentre or in the home, or on Public Access Terminals, and the process of locating relevant opportunities would be faster and simpler.

Vehicle licence renewal

After identifying themselves to the vehicle licensing system using their electronic signature, the customer would see a display of existing information about their vehicle (e.g. their name and address and vehicle colour). They would be invited to make any necessary amendments and then confirm the information using their electronic signature. Payment would be made using a credit or debit card and the licence would be sent by post. Public access terminals in secure locations such as post offices might also accept payment in cash and print out the licence on the spot. There would be no need to produce insurance or MoT certificates. Information on current insurance policies and MoT test results could be accessed by the licensing agency from MoT and insurance databases as it was needed. (Alternatively, the garages and Insurance companies might have lodged the information electronically with the licensing agency).

Skills training

Business Links will develop a wide range of educational courses which can be accessed remotely via Personal Computers and a telephone line. Some course material is already available. It is possible to participate without the need to leave home or the workplace - reducing the cost of training and delivering new skills benefits to the citizen and employer.

Income tax returns

After identifying themselves to the Inland Revenue system the customer would see a display of relevant information already held about them. This would include information concerning sources of income already known about and information about allowances that would not change very frequently (eg marital status). They would be invited to correct any of the information that was wrong or out of date, and then provide other information about their income, expenses and other allowable outgoings. If the customer was not sure about the answer to a question, then it would be possible to enter a question and answer dialogue with the system, designed to ensure that the right information was provided. When all the necessary information had been provided and confirmed (i.e. signed electronically), either an assessment of tax liability would be displayed immediately, or the customer would be told when such an assessment would be ready for electronic delivery.

Claiming a benefit

Customers would have access to terminals and, through a series of questions and answers, be able to have general information about benefits to which they may be entitled. From the same terminal, after confirming identity, they could submit and certify electronically information which is relevant to their claims.

Checking personal information

After identifying themselves to the system, individuals would be able to see the information held about them by government departments and agencies, as provided by data protection law. They would be able to correct and amend it electronically, and authenticate the amended information with their electronic signature.

Citizen's Charter

All of the information on public services which the Citizen's Charter requires to be provided would be available from public access terminals. The Citizen's Charter Unit will also make it easier for people to send suggestions and complaints about public services by setting up a page on the World Wide Web.

In addition to improvements in service delivery, the proposals in this Green Paper will help citizens to involve themselves more in the democratic process. Both Citizen's Charter information and basic statutory information will be widely accessible electronically. Also, the increasing use of e-mail by government will make it easier for them to request and receive information, under the Code of Practice on Access to Government Information, about the facts and analysis on which policy proposals are based. E-mail will also make it easier for people to contribute views to the policy making process. And they will benefit from improvements in administrative efficiency, for example in the criminal justice system.

How might electronic service delivery be arranged to bring the greatest benefits to the citizen?

Benefits for Business

In parallel to the previous section, this describes how the new forms of service delivery might appear to the user, in this case to businesses. Quick and efficient delivery to business of Government information services and regulatory requirements is crucial for our prosperity and competitiveness. In particular, businesses need to be able to find out quickly and easily what Government requirements apply to them, and what Government assistance may be available. Although much guidance already exists in paper form, obtaining it can be a difficult and resource intensive task, not least because of the multiplicity of sources which may need to be contacted. Getting hold of the information can be especially difficult for small businesses, and can represent a barrier to market entry for people starting a business. Paper-based information systems can also rapidly become out of date.

As before, the means of service delivery to businesses which are eventually adopted nation wide, are likely to differ in detail and perhaps in some more substantial respects, from the descriptions given here, and for the same reasons. Nevertheless, these examples should serve to give a clear impression of how businesses should be able to deal with government in the future. Some examples relate specifically to regulatory guidance and government forms, others relate to revenue collection and general Government information.

Access to regulatory information

As part of the Government's Deregulation Initiative, a prototype system has been developed to provide computer based access to government information and, earlier this year, it was successfully demonstrated to businesses and their advisers. On the basis of this prototype the Government plans to develop a co-ordinated programme under which Departments will progressively make their regulatory guidance available through the Internet. This will greatly simplify businesses' task by providing a regulatory one-stop-shop. The service will also enable businesses to print off official forms and will ultimately be adapted to enable electronic completion and return of forms. The Government is also discussing with private organisations the opportunities for them to add commercial navigation aids that will enable individual business to find quickly the regulations that apply to them.

Health and Safety at Work

An electronic catalogue called 'Bookfinder' will be available on the Internet. This will list all health and safety information and guidance, and will allow orders to be sent directly to the mail order distributor, HSE Books. Short, free leaflets will be made available on an on-line system to allow immediate access to information. Eventually all safety information and guidance will be available in electronic form.

Access to Market Information

Companies will be able to access regularly updated Overseas Trade Services information on the UK's top export markets. All the Foreign and Commonwealth Office posts in these markets will have electronic links, and video conferencing facilities will be available. Initially these facilities would be in Government Offices and Business Links, and would be linked with major commercial posts overseas. Electronic attendance at overseas conferences would be possible.

Taxation

The Inland Revenue and Customs and Excise already interact with businesses electronically to some extent. Increasingly they are together aiming to exploit Electronic Data Interchange - the exchange of electronic messages in a predefined format - to simplify processes and reduce costs. For example, the Inland Revenue will soon allow taxpayers' agents to lodge tax returns electronically via a messaging service, and will issue some information to them by the same route. Customs and Excise already uses EDI to handle data on trade statistics and some customs procedures. Eventually, all information passing between the departments and businesses will be capable of being handled electronically. There will be increased automation, allowing routine information flows to occur without human intervention on either side; and correspondence will be sent and received as email. For smaller businesses, this will include the opportunity to send information such as VAT returns electronically.

National Statistics

All of the statistical returns required by the Office for National Statistics will be capable of being submitted electronically. Where appropriate, businesses will be able to link their systems directly to those of the ONS so that statistics are collected without manual intervention. All data services from the ONS will be delivered on the Internet.

Government information

In partnership with private sector providers, the wealth of information collected by government will be collated and made available, in forms appropriate to assist business and the citizen. This will exclude information about individual people and individual businesses, although data about these may, of course, be aggregated into anonymous statistics. It should be possible to take any location in the UK and have access electronically to all the government information that relates to that location. For example, on the transport infrastructure (how long will it take to get goods to the channel ports?) on the local labour market, on education and health services, on environmental planning guidelines (where could a new building be sited?) and on the availability of grants and benefits - to name but a handful of examples. The data provided in this way will also be available to private sector firms to use to produce commercial information products tailored to particular uses.

The Inland Revenue, Contributions Agency and HM Customs and Excise 'Touchscreen' project

A 'Touchscreeen' pilot project between the three Departments will make a range of information available to citizens from a single point in public areas. These areas might be banks, airports, Post Offices, or public libraries.

Companies information

Companies will be able to lodge their annual reports and accounts

with Companies House electronically and receive from Companies House similar information on any company registered in the UK.

Contributions Agency

Businesses will benefit from quicker and more responsive CA inspector surveys. A new hi-tech laptop system known as the Peripatetic Inspectors Laptop System (PILS) stores all the technical information required by CA inspectors to complete the calculations involved in survey work. Nationwide paperwork will be reduced and time saved as survey records are completed on screen. CA inspectors will be able to carry out the full range of duties from any location using PILS.

As with the citizen, all of these services will be accessible, responsive and easy to use. Some of these will be available at public access terminals, and also via existing terminals in the place of business. Larger businesses will be able to link their information systems directly with those of Government, so that routine information can pass automatically without manual intervention.

Making government information available electronically will help business decision making and competitiveness. In addition, new, information-based services will be developed by the private sector, based on government information, and this will create new businesses and jobs. The potential economic and public service benefits of providing such an information service are very great and are key factors in government's current considerations of the future management of Crown copyright.

How might electronic service delivery be arranged to bring the greatest benefits to business?

Benefits for the Taxpayer

The Government is determined that, in addition to providing better services to businesses and the citizen, the strategy outlined in this Green Paper should also benefit all taxpayers by reducing the cost of government administration. The cost savings will come from eliminating manpower-intensive handling of paper, from government departments and agencies sharing common facilities and data and, most importantly, from the rationalisation and redesign of government processes. This will benefit the Exchequer and hence all taxpayers, and allow lower fees for some licences and other services for which the citizen pays directly. Reflecting the lower cost of electronic services in lower fees for those services (compared to the parallel paper service) would encourage their use and hence promote the achievement of savings.

Finally, the development of new information products based on the freer availability of government information will benefit the national economy, and hence the taxpayer, by the generation of new sources of revenue.

How might electronic service delivery be arranged to bring the greatest benefits to the tax payer? What are the implications of pricing electronic services differently from conventional services?

From the Editor . . . . so how is this going to affect our companies and our jobs? It is obvious that Electronic Data Interchange (EDI) is going to be a huge component of the Government's initiative and at some stage most of the paper that is currently transferred between Government and organisations and vice versa, will be replaced by electronic equivalents. When the Government wants something it usually gets it. Are we prepared and how will we measure up? It's your call on this. How about some letters on the subject?

A Code of Practice for Legal Admissibility and Evidential Weight of Information Stored Electronically

Paul Plane

In November last year (1998) I had been idle for a month having taken early retirement from my employer of 32 years, NatWest. Foolishly I mentioned this in passing to our Chairman, John Bevan at one of our meetings. A few days later I received a call from him asking if I would be interested in representing BCS CASG on a BSI-DISC committee discussing and formulating a revised code of practice for information stored electronically. "It won't take much. Just reviewing a few papers and attending the odd committee meeting" he lied. "And anyway, you've got plenty of time on your hands now that you've retired, haven't you?" Meekly, I replied "OK, it might help to keep my brain ticking over." "Thanks" said John "and, by the way, the committee is meeting next week!"

Two days later, I heard a large thud at the front door. This was the postman delivering the "few papers" for review. I picked them up, the dog refusing to do so on the grounds that his back wouldn't take the strain. I started to read them, ignoring my wife's pleas to pick up the paintbrush again. Now, I won't pretend that the Code is a riveting read, but it was interesting for somebody coming fresh to the subject of document management and I was intrigued to realise the complexities involved in having to store key information that may be required to be verified as original at some later date.

As a consequence, over the past year I have been attending regular committee meetings at BSI in Chiswick High Road and reviewing papers on an *ad hoc* basis. Having found further employment in March 1999 I was pleased that my new employers Dai-Ichi Kangyo Bank Ltd were happy for me to continue with the role and even allowed me the time off work to attend the meetings.

So what is the code?

First, it is a revision of a code that was produced in 1996 and the 1999 edition supersedes that version. Second, it has been published in the BSI-DISC PD (Published Document) series of publications in recognition of the rapid rate of development of relevant information technology systems used for electronic creation, storage and retrieval and the corresponding demand for reliable guidance on good practice.

The 1996 edition was aimed principally at systems that stored information on Write-Once-Read-Many (Worm) optical storage systems. The 1999 second edition extends the Code to cover any type of electronic storage medium, including those that are rewritable, and incorporates numerous improvements stemming from the comments and experiences of users who have been applying the original 1996 Code.

Why do we need the code?

This Code of Practice has sparked a revolution in the storage of electronic information, where issues of legal admissibility are important. Electronic documents now form the basis for most business transactions and are thus produced and stored in significant numbers. With the increase in the use of e-commerce systems, such a revolution will only increase in speed.

A major problem faced by organisations storing electronic information using computer technology and various types of storage media has been the legal admissibility and, more importantly, the evidential weight of information stored in this manner. The position is often unclear and the risk being taken in not keeping paper is frequently unknown.

Implementing the recommendations detailed in the Code of Practice, now updated to take account of the last three years experience and developments, and being able to demonstrate that compliance has been achieved, is a significant step towards, the reduction of this risk.

What does the Code not do?

The Code does not guarantee legal admissibility, as this status can only be confirmed by a Court of Law. However, the Code seeks to define the current interpretation of best practice in information management, and thus provides a common framework which, if followed, will help the organisation ensure that such a status is achieved.

What does the Code do?

The Code offers guidelines for the procurement, planning, design, implementation, management and operation of electronic information storage systems. By offering such guidance, the Code aims to remove doubt about the confidence in the integrity of the stored information, and thus its authenticity. It pays particular attention to implementing approved information management policies, so that it can be demonstrated that, at any time in the storage life of information (which can be many years) the system was working in accordance with normal business practice at all times.

The Code is equally valuable to records managers, document managers, electronic information managers, archivists and developers/implementers of electronic information storage systems.

What other information is available?

The Code has two accompanying documents:
PD0009: 1999 Legal Admissibility Compliance Workbook. This is designed to assist the evaluation of a document management system for compliance with PD0008: 1999.
PD0010 Principles of Good Practice for Information Management. This report presents a set of proposals which have been labelled principles. These principles present a view on good practice for the operation of systems making use of electronic document management technologies.

Where can you get the code?

The documents PD0008, PD0009 and PD0010 are available from BSI Customer Services on 020-8996 9001. For further details of BSI products and services visit their Web site: HYPERLINK http://www.bsi.org.uk/disc http://www.bsi.org.uk/disc

I am grateful to BSI-DISC for providing details of the code and additional documents.

Have I enjoyed my involvement with BSI-DISC?

The answer is Yes. It has been time consuming, but the committee were welcoming and although my contribution has been small I have been made to feel that it is valuable. The committee still meets to discuss publicity, sales and education needs and I would be happy to represent BCS CASG on any future BSI_DISC committees.

Moral:

Always be careful what you say in front of our Chairman.

Audit Research and Conferences: is CASG sufficiently involved?

David Chadwick - Academic Relations

Some of you may have read my previous article (Summer 99) on the need for CASG to reach out to students in higher education. I would like to thank those who came forward offering to visit universities to talk to students about real-life issues. In the same article, I mentioned the need for CASG to support research initiatives. Few universities in the UK carry out research in the computer audit area in contrast to our American cousins who appear very active. It has been said that well-qualified students in the UK are easily attracted to good careers in industry and so turn their back on a research-oriented path. However, I have also heard it said that research in the UK suffers from too little input from the professional bodies in suggesting and directing research initiatives.

But how far should the professional bodies and especially CASG get involved in research activities? Should CASG suggest specific projects, encourage students to give short papers at technical briefings, award prizes for outstanding performance in audit-oriented education courses or even perhaps finance the occasional conference?

To see the kinds of relationships that can be enjoyed between academia and the professions let's have a look at two conferences of direct interest to CASG members at which some of the UK's universities, supported by professional bodies, will be presenting papers on audit-oriented research.

In April 2000 the BCS Software Quality group will be holding its SQM2000 conference. The papers will cover a broad spectrum of practical experience and research covering process improvement, quality management systems, auditing, lifecycle costs, project management issues and relevant national and international standards such as BS7799. This conference is run by academics at Southampton Institute and the University of North London and will be held at the University of Greenwich. It will have a high number of papers from MSc and PhD students at universities all around the country and for whom this will be an important opportunity to meet professionals in the field. For further details try www.mullsoft.co.uk.

In July 2000 there will be a symposium on behalf of the European Spreadsheet Risks Interest Group (EuSpRIG) entitled"Spreadsheet Risks, Audit and Development Methods/Tools". Founding members of EuSpRIG are ISACA (UK Northern Chapter), the University of Greenwich and the University of Wales (Institute Cardiff). The group wishes to create a forum where academics and professionals can discuss the increasingly alarming problem of business risk associated with spreadsheet error. In 1997 both KPMG and the then Coopers Lybrand both produced reports stating that the incidence of error in some categories of spreadsheet could be as high as 90%. In that same year, in an article in Computer Weekly, a spokesperson from KPMG was reported as saying:

'End-users are putting their companies at risk by setting up spreadsheets without realising that this demands the discipline of traditional programming. Our findings are disturbing, but they are not really surprising, as 78% of models had no formal quality assurance to ensure they were built to specified requirements and were fit for purpose'

EuSpRIG members are aware that nothing much has changed in business since 1997 and that the same frequency of spreadsheet errors is still evident. However, researchers and professional practitioners have been looking into the problem and it is now time to bring the issue fully into the public domain for discussion and for appraisal of possible solutions. Why not find out more about EuSpRIG and its forthcoming symposium on www.gre.ac.uk/~cd02/EUSPRIG .

For a wider view on this and other information integrity research projects try www.gre.ac.uk/~cd02/iirc/

BCS MATTERS!

Colin Thompson, BCS Deputy Chief executive, reviews some of the current BCS news items. Further information on these or any other BCS related issues may be found on the BCS Web site (<HYPERLINK "http://www.bcs.org.uk/"http://www.bcs.org.uk/> HYPERLINK "http://www.bcs.org.uk"http://www.bcs.org.uk). Information is also available from Customer Services at The British Computer Society, 1 Sanford St, Swindon SN1 1HJ (e-mail to HYPERLINK "mailto:marketing@hq.bcs.org.uk"marketing@hq.bcs.org.uk)

Colin Thompson
BCS Deputy Chief Executive

Programme 2000Plus

If the label is unfamiliar, I should perhaps explain that Programme 2000Plus is a series of projects designed to implement the recommendations of the 1998 Pollard Review which has been mentioned a number of times in these pages. Over the next few years, this programme will open the membership of the BCS to all those actively involved or interested in the field of information systems. It will also aim to broaden the focus of the Society beyond the technical community, to include all the skills required to exploit Information Technology effectively for the benefit of individuals, organisations and the public at large.

The full programme will take at least 5 years to implement. 2000Plus represents a major re-focusing for the BCS, affecting every aspect of its activity, including many - for example examination syllabi and academic accreditation - for which any change has a substantial lead-time. However, there are a number of recommendations that can be implemented more swiftly and in the first year of the programme plan priority is being given to improving the progression path to professional membership through a new, points-based assessment system which will:

1. Simplify very considerably the rules governing eligibility to apply for professional membership; and

2. Make it possible for competent professionals to apply for professional membership at an earlier stage in their career - particularly for those applying for Associate membership and for those applying by the experience only routes.

These changes, approved in principle by Council in November 1999, will mean that in many cases Graduates will be able to apply for Associate Membership (AMBCS) after 2 years of experience - even 1 year in certain cases. The changes will also mean that those without any recognised academic qualifications will be able to apply for professional membership on the basis of 7 years experience and will be able to support

their application with a presentation to Assessors as an alternative to the current requirement for a lengthy technical dissertation. The new scheme also includes provisions for recognising non-academic qualifications, such as ISEB qualifications and Microsoft and Novell certificates.

The New President

Autumn is the time for a number of major BCS events, the most important of which is the Annual general meeting. This year the meeting was held in Cambridge, a location reflecting the academic background, and current base, of the new President, Dr David Hartley. David has a long background of teaching and research at Cambridge and was the Director of the University Computing Service there from 1970 to 1994. He then spent three years as Chief Executive of the United Kingdom Education and Research Networking Association (UKERNA) before taking his current post as Executive Director of the Cambridge Crystallographic Data Centre.

Other BCS Events

Autumn is also the time for the Society's annual dinner. This year's event, on 24 November, was held for the second year running at the Brewery in the City of London. Around 450 members and guests heard a very lively speech by the Guest Speaker, The Rt. Hon Lord Hattersley

The third in the list of major autumn events, the BCS Awards, was actually the earliest. The awards were presented at a ceremony at Le Meridien in Piccadilly on 3rd November 1999 by Alastair Macdonald CB, Director-General Industry of the DTI and, as of the AGM, Deputy President of the BCS. This is the 27th year of the IT Awards and there were, as usual, three winners - The MathEngine SDK from MathEngine plc, SHOPCREATOR Total e-Commerce Software from Shopcreator Developments Ltd, and N-XEC - Enabling technology for the Internet from Insigma Technologies Ltd.

MathEngine seeks new ways to apply

mathematics to improve the realism of 3D worlds in education, entertainment, and engineering that require realistic simulations. The MathEngine SDK lets programmers include real-time physics in applications running on mass-market platforms like PCs and consoles.

SHOPCREATOR enables any business to set up and manage a fully featured e-commerce trading site, cheaply and with no technical knowledge. The user base ranges from high street retailers through SMEs to blue-chip corporations. Trading can start on-line today - taking revenue with hosting, security, search engine registration and optional credit card clearance.

N-XEC is unique technology which is set to change the way individuals, companies and organisations use the Internet to communicate with each other. Applying it will remove the fear factor from e-commerce transactions, increasing on-line purchasing confidence. It will also offer a completely new advertising standard for the Internet and provide a real solution to the problems of remote learning.

The BCS IS Management Awards

The Society is now seeking nominations for its other major awards scheme, the IS management Awards. Now in their tenth year the Awards focus on the recognition of the achievement, improvement and innovation in the management of Information Systems, with particular regard to:

* the impact on the business performance of the organisation

* the quality of the relationships between customers, users and systems providers

* the management of the development and/or operation of the systems

Organisations nominated to compete for these prestigious awards will be asked to complete a submission under the headings:

Business Impact Innovation Challenge Capability Impact Measurability

Nominations must be submitted by 17th December 1999 and further information can be obtained from Maria Teresa Muir 01793 417417, email HYPERLINK "mailto:mtmuir@bcs.org.uk" mtmuir@bcs.org.uk.

New BCS Publications

The latest title in the British Computer Society Practical Guides series examines the implications of the technological revolution focusing in particular on the Internet, World Wide Web and the concept of e-commerce. E-commerce - a world of opportunity examines the main considerations:

- Effective marketing via the WWW

- Knowing who you are doing business with

- Making Payments electronically

- The main security considerations

- Managing without people

- Impact on current business practice

- Exploiting the global market

Handling competition

Security is one of the key concerns and a fundamental part of the e-commerce model and the report covers all the considerations including: key escrow agreements; regulations; legal recognition of trusted third parties, digital signatures, digital certificates; encryption technologies; online payments and customer and supplier verification. The report is a 56 page document and is priced at 15 pounds to BCS members and 20 pounds to non-members.

The ACM Digital Library - a new BCS member benefit

The Digital Library of the Association for Computing Machinery (ACM), a vast resource of computing intelligence, research, and development - is now open to BCS members - the first time the ACM has opened its service to another organisation. The Digital Library includes 15 years of archives and nearly 9,000 full-text articles from ACM journals and magazines, plus conference proceedings since 1985. This new initiative enables all BCS members to access the full contents of the ACM digital at the ACM members subscription of 87 US Dollars per year. BCS Student Members in full-time education can receive the service for only 20 dollars per year.

And Finally.......

News of another review, this time closer to home for CASG. The focus of the work is the broad spread of BCS activity in the area of security and privacy. Much of that activity is impressive, both in terms of its quality and the expertise of the people involved. But I have been concerned for some time that our presentation is not always what it might be and I suspect that the outside world has a somewhat disjointed picture of our overall activity. In consultation with Rodney Clark and Richard Boothroyd, of the Security Specialist Group and Security Committee respectively, we have now set up a project to review all the activity in the field and to make recommendations on improving co-ordination and presentation. Rodney Clark will be leading the work and will be liaising with all the interested parties within the Society, including CASG. Our aim is to be in a position, by the time of the Information Security show in London next April, to publicise all of the Society's security and privacy activities in a polished and professional manner.

Letter to the Editor

Dear Sir,

I am trying to find out if members have digested David Chadwick 5 minutes examination (So What About Students?) in the autumn issue of the journal. I was a paid-up student member for 3 years and now am an unemployed graduate member, who desperately needs a place to gain job experience which is a necessity to gain employment in this highly specialised field. If you have a place for me or know anyone who will be willing to give me a go, please kindly give me a call on 020-8806-1614/0956-292-604 or drop an e-mail to me at hanimasaun@aol.com.

Your sincerely

Hassan Animasaun

Can anyone help Hassan? If so please contact him directly - Ed

Speed isn't everything

At a recent computer exhibition a major Bill Gates reportedly compared the computer industry with the car industry and stated: "If GM had kept up with technology like the computer industry has, we would all be driving twenty-five dollar cars that go 1000 miles to the gallon."

In response to these comments, General Motors issued a press release stating that if GM had developed technology like much of the IT industry we would be driving cars with the following characteristics:

1. For no reason whatsoever your car would crash twice a day.

2. Every time they repainted the lines on the road you would have to buy a new car.

3. Occasionally your car would die on the motorway for no reason; you would just accept this, restart and drive on.

4. Occasionally, executing a manoeuvre such as a left turn, would cause your car to shut down and refuse to restart, in which case you would have to reinstall the engine.

5. Only one person at a time could use the car, unless you bought "Car95" and "CarNT". But then you would have to buy more seats.

6. Macintosh would make a car that was powered by the sun, reliable, five times as fast, and twice as easy to drive, but would only run on five per cent of the roads.

7. The oil, water temperature and alternator warning lights would be replaced by a single "general car default" warning light.

8. New seats would force everyone to have the same size bottom.

9. The airbag system would say "Are you sure?" before going off.

10. Occasionally, for no reason whatsoever, your car would lock you out and refuse to let you in until you simultaneously lifted the door handle, turned the key and grabbed hold of the radio antenna.

11. Every time GM introduced a new model car buyers would have to learn how to drive all over again because none of the controls would operate in the same manner as the old car.

12. You'd press the "start" button to shut off the engine.

Caption Competition:

The best caption to the cartoon below, received by 14th February 2000, will receive a £20 wine voucher to buy a belated Valentine's Day present. Suggestions to the Editor at the address on page 3.
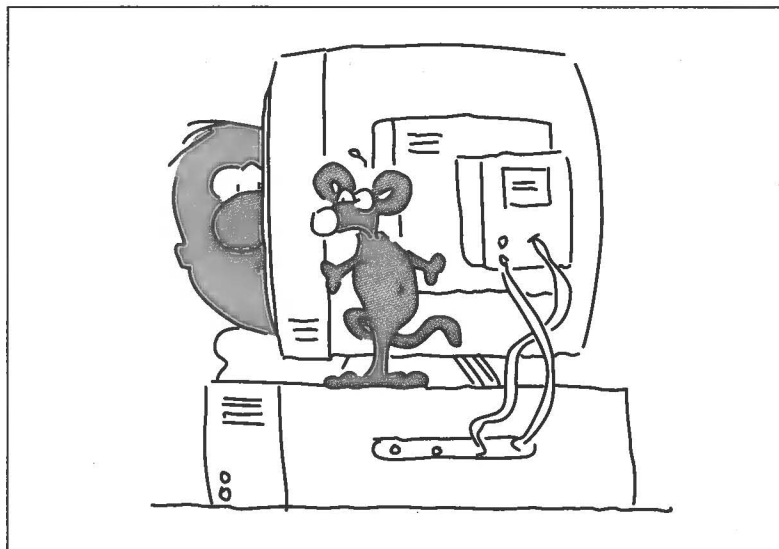
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(Membership runs from July to the following June each year)

I wish to APPLY FOR membership of the Group in the following category and enclose the appropriate subscription.

CORPORATE MEMBERSHIP (Up to 5 members) *   £75
    * Corporate members may nominate up to 4 additional recipients for
    direct mailing of the Journal *(see over)*

INDIVIDUAL MEMBERSHIP *(NOT a member of the BCS)*   £25

INDIVIDUAL MEMBERSHIP *(A members of the BCS)*   £15
BCS membership number: _____

STUDENT MEMBERSHIP (Full-time only and must be supported by a letter from the educational establishment).
Educational Establishment: _____   £10

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