Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

OLIS : 03-Dec-1998
Dist. : 04-Dec-1998

Or. Eng.

PUMA(98)14
Unclassified

PUBLIC MANAGEMENT SERVICE
PUBLIC MANAGEMENT COMMITTEE

INFORMATION TECHNOLOGY AS AN INSTRUMENT OF PUBLIC MANAGEMENT REFORM: A STUDY OF FIVE OECD COUNTRIES

This report on how five OECD countries are using information and communication technologies as an instrument for achieving public management reforms was prepared by Franklin S. Reeder, former chair of the Public Management Committee (PUMA), working as a consultant to PUMA. It highlights emerging trends in Australia, Finland, France, Sweden and the United Kingdom, principles and factors influencing success, and some early "lessons learned" from their experience. It is being published under the responsibility of the Secretary-General and does not necessarily reflect the views of the governments of OECD countries.

It is provided to the Committee for information and reference. It is also available free of charge on the PUMA Web site at http://www.oecd.org/puma

For additional information, you may contact Daniel Blume of the PUMA Secretariat at Daniel.Blume@oecd.org, telephone: 33-1.45.24.97.59; fax 33-1.45.24.87.96.

72579

Or. Eng.

Complete document available on the Internet : http://www.oecd.org/puma/

Disponible également en français sous le titre :

Les technologies de l'information en tant qu'instrument de réforme de la gestion publique : Étude de cinq pays de l'OCDE

TABLE OF CONTENTS

FOREWORD

1. This report was commissioned by the OECD Public Management Service to explore how new information and communications technologies are impacting public management reforms and government programmes in five OECD countries -- Australia, Finland, France, Sweden and the United Kingdom. It is hoped that the conclusions reached regarding principles and factors that influence success, emerging issues and implications for public management and governance, and some early "lessons learned" can be seen as broadly applicable to IT-related public management reforms across all OECD Member countries.

2. This report was prepared by Mr. Franklin S. Reeder, former Chair of the PUMA Committee. Currently a consultant, Mr. Reeder previously served as director of administration in the White House; and spent most of his career within the U.S. Executive Office of the President at the Office of Management and Budget. Mr. Reeder wishes to acknowledge the active assistance and support of dozens of individuals, and particular gratitude to the principal points of contact in each government who managed to arrange excellent briefing schedules: Allan Maclean in Australia; Petri Virtanen in Finland; Francoise Waintrop in France; Sören Lindh in Sweden, and Dena Kalsey and Paul Waller in the United Kingdom. At the OECD, Daniel Blume gave steady direction and unflagging support.

3. Also gratefully acknowledged were the excellent and remarkably candid presentations by the government officials visited, who were extraordinarily open, anxious to display their accomplishments but equally willing to discuss problems and limitations in the interest of learning from and providing a learning experience for others.

4. This report is published on the responsibility of the Secretary-General of the OECD. The views expressed in the report are those of the author and do not commit or necessarily reflect those of governments of OECD countries

EXECUTIVE SUMMARY

5. As part of its effort to understand public management reform in OECD member countries, the Public Management Committee of the Organisation for Economic Co-operation and Development commissioned an examination of the role of information technology (IT) in public management in five OECD countries. The focus of this effort was to be public management and governance, not technology per se. Five countries were selected for the initial review - Australia, Finland, France, Sweden, and the United Kingdom. These countries were selected because they were perceived to be actively engaged in the pursuit of public management reforms using IT and/or because they were understood to be undertaking some sort of breakthrough application of technology. The methodology consisted of examining what each country deemed to be its most important exemplars of the use of IT and attempting to identify patterns. The projects reviewed are described in Appendix A.

6. A review of the cases reveals some patterns in the sorts of initiatives being undertaken that transcend the content of the particular projects.

- Models of horizontal (across governmental agencies) and vertical (across levels of government and economic sectors) integration are both being employed to provide "one-stop shopping" to the consumers of government services

- Service integration in some instances entails only the combining of operations at the point of delivery; i.e. a single shop delivering services still being "manufactured" in separate plants. In other cases, the systems are being integrated in the back room.

- An important emerging trend is service delivery systems that follow and are integrated with life events; e.g. issuing a visa as part of booking an airline ticket.

- Technology is itself a change agent. The availability of technology infrastructure, e.g. electronic commerce and associated secure technologies, automatic teller machines and the Internet, make certain government applications possible and creates public expectations.

7. Factors that influence success include:

- Budgetary pressures. While a need to reduce operating costs often drives the use of IT, improvement in service delivery may have the effect of increasing participation in public programmes.

- The political agenda. Public management reform, whether in the name of less government or better government and the use of IT as an instrument has now survived several changes of government. Evidence was found of increasing use of IT-based goals; e.g. increasing use of electronic forms; by political leaders. At the same time, internal politics and concerns over bureaucratic territory continue to be important.

- The notion of "government as business". Government agencies and authorities are increasingly being required to be competitive and adopt business-like practices.

- Intervening variables. The concern over the Year 2000 problem and, for European Community countries, the various requirements of the EU and especially the common currency, are requiring fundamental changes in systems. In some instances, this may create an opportunity to make other reforms.

- The growing use of electronic commerce too is seen as having a potentially major impact on government operations and service delivery, though issues related to encryption, security, authentication and access will need further attention before governments can fully exploit their potential for increasing access to services, responsiveness, efficiency and cost savings.

8. The study identified certain implications for public management more broadly and issues that each government is being required to address; among them:

- the role of government as user of IT in the nation's larger effort to survive and prosper in the "information society";

- the emergence of new partners and intermediaries in the delivery of services;

- structural changes within national governments and in their relationships to other levels of government;

- concerns about privacy and confidentiality in a world in which sensitive information flows across networks and the potential exists for amassing large files of information about individuals;

- the challenge of assuring equity in access to services so that the introduction of technology does not create an inappropriate advantage for those with more powerful technological tools.

9. A few lessons emerge from these countries studies:

- being an early adopter has both advantages and disadvantages;

- the role of government as direct provider of services and structures built around that notion are changing;

- how work is distributed geographically is changing even more rapidly.

INFORMATION TECHNOLOGY AS AN INSTRUMENT OF PUBLIC MANAGEMENT REFORM:

A STUDY OF FIVE OECD COUNTRIES

I. INTRODUCTION

1. The conventional wisdom is that government, by virtue of the fact that it is an information-intensive enterprise, is significantly impacted by computer and communications technology, referred to more generically in this report as information technology or IT. In many OECD countries, government was an early user of IT, employing it for a range of applications including compiling statistics and supporting large transaction processing functions. In those early stages, technology was used primarily as an efficiency tool, what Jerry Mechling at Harvard University's John F. Kennedy School of Government calls "making the same old mess run faster". Like the mechanisation in the first stages of the industrial revolution, technology was applied to doing more, faster and cheaper. What was produced by the early machines (or IT systems) was not perceptibly different from what had been produced by hand - or at least that was the goal. In recent years, there has been growing discussion of an emerging phenomenon, the use of IT to transform not only how governments conduct their business but also what they do and how they relate to citizens and society.

2. Virtually every OECD country has undertaken some sort of broad-based public management reform in the last decade. These reforms were undertaken for several reasons including improving the delivery of public services, enhancing public confidence in public institutions, and reducing costs. A collateral phenomenon is the emerging use of the term "information economy".

3. To the extent that governments are heavily reliant on IT to perform basic production functions, it seemed inevitable that IT must be a major element or instrument of those reforms. Perhaps more importantly, there seems to be a growing recognition that IT can be an instrument of the reform, both in enhancing efficiency (doing more with less) and changing the way government delivers services and even redefining what it does. As part of its effort to understand public management reform in OECD member countries, the Public Management Committee of the Organisation for Economic Co-operation and Development commissioned an examination of the role of IT in public management in five OECD countries. The focus of this effort was to be public management and governance, not technology per se.

4. One can describe the role of IT in management in terms of a spectrum, ranging from simple efficiency enhancement at one extreme to uses of technology that fundamentally change the nature of the relationship between government and its clients or even changes to functions of government. In the middle, one finds uses of IT to enhance capability - such as improving access to public information. The particular emphasis of this examination was to be the implications of the use of information technology on the nature and role of government, not efficiency, although increased efficiency is often a secondary benefit of such initiatives as well.

5. The objectives of this study are (1) to describe how IT is being employed to transform government; (2) to develop some ways of classifying these efforts so that, even if a particular IT application is not transferable, its key characteristics can be understood; (3) to begin to develop a set of principles about what influences the success of such efforts; and (4) to identify potential issues in the application of IT as a transforming tool.

6. The body of this report contains largely overviews and summaries of what was found. The appendix summarises, in the form of profiles, some of the projects that were reviewed. Wherever possible, the names, e-mail addresses and web sites are given as well in the hope of encouraging a dialogue among practitioners interested in specific applications or technologies.

II. APPROACH AND DISCLAIMERS

7. The approach taken in this study was simple and straightforward. Five countries were selected for the initial review -- Australia, Finland, France, Sweden, and the United Kingdom. These countries were selected because they were perceived to be among the most actively engaged in the pursuit of public management reforms using IT and/or because they were understood to be undertaking some sort of breakthrough application of technology.

8. The purpose of the study was described to representatives of each government and they were asked to schedule a two-day study visit. The visit was to include briefings on those uses of IT that the host country deemed to be its best examples of the innovative application of technology to transform public management. No other boundaries were placed on the data gathering except that host countries were asked to include programme (non technology) officials in the briefings insofar as practicable. At the outset of each visit, there was usually an opportunity to discuss with officials in the government's central management agency its overall strategy for reform and the role of IT in that effort. In addition to the briefing materials, salient reports and other descriptive materials were gathered and, where available, material on the World Wide Web was reviewed as well.

9. The methodology results in some obvious advantages and limitations. What was reviewed is presumably the best of what each country is doing. Time limitations and the availability of specific individuals at the time of the visits, however, undoubtedly resulted in important omissions. Projects reviewed varied considerably as to their stage of development ranging from mature, fully implemented systems to those that were just at the vision stage. Most, however, were at least at the pilot test stage. Because each country visit was different, the potential for direct comparison is limited; e.g. customs or tax or health systems were not reviewed in every country. That said, there was remarkable comparability in apparently dissimilar systems. Patterns and issues, discussed later in this report, emerged even though the systems reviewed served widely different purposes.

III. COUNTRY OVERVIEWS

Australia:

10. The government of the Commonwealth of Australia has a strong and visible commitment to the notion of the information economy and to promoting Australia's role in it. As part of that effort, the departments and agencies of government are seen as lead users of new information and online technology. Information technology activities are overseen by a chief information officer who heads the Office of Government Information Technology. A National Office for the Information Economy has been created

within the Department of Communications, Information Technology and the Arts, to develop and co-ordinate policy relating to both the larger issues of the information society and applying IT to governmental administration. A Ministerial Council, chaired by the Minister of Communications, Information Technology and the Arts, and including the Ministers for Foreign Affairs and Trade; Industry, Science and Technology; Finance; the Treasurer; and the Attorney-General has been established to oversee this effort, including design of a government-wide blueprint for using technology.

Finland:

11. Finland is firmly committed to being a leader in the global movement toward an information society and to the role of government both as catalyst and leading user of IT to deliver services. A nation of approximately 5.1 million, Finns describe themselves as "the most connected country in the world", number one in mobile phones and computers connected to the Internet per capita. They take pride in the fact that, in a recent survey by the International Data Corporations, they were ranked second among the nations of the world in progress toward an information society.

12. An important element of the government's strategy is enhancing the quality of public services including the premise that "public service produced by local authorities and the State should be viewed as a single entity." Strong political leadership for the Finnish government's IT efforts is provided by the Minister of the Interior, whose portfolio includes the IT policy organisation in the Ministry of Finance.

France:

13. French commitment to modern information technology is significant and historically based. Deployment of Minitel technology -- essentially a two-way communication system using television technologies -- through the then State-owned telephone system was an early government priority. More than 6.5 million households are now connected to Minitel (approximately one third), and it is estimated that more than 35 million individuals use more than 7 million connect hours per month. As a consequence, France today has a strong culture and experience in the use of IT as part of everyday life; the French citizen is accustomed to using information technology as a means for seeking information and obtaining services and French services providers have extensive experience with packaging their services for electronic delivery. Government officials there believe that this experience with technology will greatly facilitate their conversion to Internet-based services, and rapid acceptance of these services by the public.

14. The current French government has made an equally strong commitment to IT as part of its public management reform. On 16 January 1998, the government unveiled an ambitious six point initiative entitled "Preparing France's entry into the information society", one point of which is "information technology as a tool for modernising public services". The Commission on the Reform of the State has placed a high priority on deployment of IT solutions. One example is the commitment to make all governmental forms (by latest estimate 2 000) available electronically by the end of 1998 at one Internet address. An interministerial body has been created to lead the reform efforts and a network of officials responsible for IT initiatives in each ministry and authority is being created. France is now experimenting with a system of single notification of changes of address at the Post Office that would communicate the information to all parts of the government.

Sweden:

15. The salient feature of Sweden's effort to employ IT in public management reform is the Top Managers' Forum, a body created in 1995 to address concerns about the compartmentalisation of efforts to apply technology. The Forum is chaired by the Minister of Finance and thus commands the presence of senior officials from other ministries and authorities. The Forum selects specific projects that cut across two or more organisations addressing:

- re-engineering of public administration with assistance of IT;
- open and secure electronic infrastructure to improve the exchange of information; and
- information management - policy, legal and managerial issues.

16. A second important aspect of Sweden's IT efforts is the existence of numerous databases or registers that are available, subject to approval under Sweden's Data Protection Statute. Typically, each database or register supports a specific application of IT; e.g. registering motor vehicles or collecting taxes, but they are also used as infrastructural information resources for external agencies, organisations, or even the business community at large. These include registers of names and addresses, company addresses, vehicles, chemical products, buildings and land use. Each person born in Sweden is assigned a unique personal identifier and persons who immigrate must apply for one. Thus, system developers begin with a range of data resources that can be employed in new ways to support public management reform and service to the public. Despite the existence of these rich data stores, Swedish officials characterised the state of their technology prior to the reforms as "stovepipe" systems; i.e. serving specific programmes or delivery systems in a vertical fashion, and as providing more tracking (after the fact) information than true operational support.

United Kingdom:

17. The United Kingdom has had a visible public management reform effort under way for nearly two decades. In late 1996, the previous government published a green paper entitled *Government Direct* to encourage public discussion of the possibilities for "radical and wide ranging change, based on the possibilities offered by Information Technology".

18. The current government, which took office in 1997, has adopted and adapted the reform effort to reflect its own political philosophy and priorities. It has created a Better Government Unit and is placing considerable emphasis on the use of information technology to change the public's perception of government as a place where one finds only forms and queues. It has committed to producing a white paper in early 1999 that will articulate its vision for the use of IT as an instrument of reform. As if to jump start process, Prime Minister Tony Blair announced in September, 1997: "We are setting a target that within five years, one quarter of dealings with Government can be done by a member of the public electronically -- through their television, telephone or computer."

IV. PATTERNS

19. A review of the cases reveals some patterns in the sorts of initiatives being undertaken that transcend the content of the particular projects. The value of classifying, beyond academic exercise, is to

help decision-makers think about what choices they have made or might wish to consider, in their own contexts.

A. Vertical and horizontal integration

20. The catch phrase in a number of countries for many of the reforms is "one-stop shopping". The underlying notion is to design delivery systems from the customer's rather than the service deliverer's perspective and provide services to common customers in one location, physical or electronic. As a practical matter, two distinct, albeit not mutually exclusive, forms emerge. The most obvious is integration of services across ministries or authorities within the national government. The most ambitious of this type of initiative is the Australian Centrelink project, which combines the service delivery functions of two agencies, the Commonwealth Employment Service and the Social Security Department into a new, separate agency.

21. A second form of integration is vertical. An exclusively national government view of integrating service delivery often ignores the important role played by other levels of government, especially in health care, education, and social services. Some the most innovative projects of this sort are being undertaken by local governments, where much of retail level or direct delivery of services by government occurs. The Kista project in Sweden is illustrative of efforts to integrate both vertically and horizontally. Such projects seek to provide information and assistance across a range of services that the local resident may require and across a range of providers including not only the national and local governments, but also businesses and not-for-profits. A narrower but no less ambitious form of vertical integration is illustrated by the health care projects in Australia and France, where central governments are using technology to co-ordinate and improve a service delivered not only across multiple levels of government but also by private providers. An unusual example of vertical integration can be found in the Finnish initiative to use technology to support the judicial system. In that case, legal services, a function historically performed by municipalities, has been centralised to allow use of IT to improve service delivery and the efficiency of the judicial system.

B. Front room - back room

22. Integration of service delivery has two distinct aspects. There is the service delivery piece or user interface and the supporting processing. The Centrelink project in Australia, at least in its initial stages, focuses primarily on the former, creating a facility that, to the customer, looks like a single system. In fact, Centrelink continues to be supported by separate processing systems for each of the programmes, social services and employment, being provided. Co-ordination occurs at the point of service delivery.

C. Following the transaction or supporting "life events"

23. A completely different approach to reforming service delivery, that is significantly enabled by the use of technology, is following the transaction, or what the UK calls supporting "life events." The underlying assumption is that the person who needs service is not interested in government, per se, but that, incident to some other event or transaction in which he or she is engaged, the assistance of or permission from one or more governmental bodies is required.

24. In its simplest form, this is best illustrated by the Australian visa system. Simplicity here characterises the design at the point of service delivery, in contrast to the complexity of the technical or

organisational effort required to make it happen. The prospective entrant into the country completes the visa process incident to purchasing an airline ticket. Since the airline must see the passenger's passport before allowing her/him to board the flight, the airline now asks for passport information at the time passage is booked and passes that information electronically to Australian immigration. Some additional key-stroking is required, but the payoff to passenger, carrier and the government is substantial. From the traveller's perspective, there is no separate interaction with a government authority; the necessary approvals occur almost transparently incident to booking the airline ticket.

25. More complex models of using IT to reform services around life events typically involve integration across agencies or levels of government as well. The most obvious is changing address. Using the government's national address registry, residents of Sweden can report a change to the Post Office and that change is, in turn, passed through to other databases that use the home address. The Australian government is developing a system for registering business, a process that entails registering and/or obtaining licenses from Commonwealth, State and municipal governments, that will allow registrants to enter a single transaction and satisfy the requirements of all interested governmental entities.

D. Technology as a change agent

26. The very existence of technology is a force for change from several perspectives. First, as noted above, it creates a set of habits and expectations among those who interact with government about how business can and should be done. Second, the deployment of technology in other sectors - e.g. the widespread network of automated teller machines (ATMs), the increasing penetration into private homes of personal computers connected to the Internet, and the growth of electronic commerce and associated secure technologies - creates an infrastructure that government can then exploit for other purposes. For many applications, the volume of interactions with the government by one user is not sufficient to justify the investments required to become an electronic customer. The French use of smart cards in health care assumes that physicians and other providers have or will be acquiring computers to manage their practices so that the only additional investment they will need to make is a smart card reader. This technology push is also a constraint to the extent that government agencies must consider what is the current state of technology and prevailing commercial standards, de facto and de jure, in designing their delivery systems.

V. EMERGING PRINCIPLES: FACTORS THAT INFLUENCE SUCCESS

27. This section seeks to examine the external factors that drive, shape, and sometimes constrain the use of IT as an instrument of public management reform

A. Budgetary pressures

28. Continuing pressures on public treasuries are arguably the most powerful influence driving the application of technology to public services. There are measurable savings in money and staffing by collecting information or distributing payments electronically, because there is less keyboarding of data, errors are fewer, and reports or payments are less likely to go astray. A principle underlying the French initiative on electronic data interchange is that they must be "win-win" situations, and they typically are. Not only are public expenditures reduced. Businesses that already have much of the data required for government reports in their computers can produce them electronically far more efficiently. Even the individual who is now being asked to enter data on a keyboard instead of filling out a paper form or appearing at a government office often gains by getting a response or a service more quickly and by being

able to conduct business with government agencies at more convenient times or without having to take the time to go to a government office.

29. While the mid to long-term implications of the use of IT for service delivery are typically favourable or neutral budgetarily, investments are often required in the short run. A number of governments have set up investment or innovation funds, where a central management agency or some interministerial body gives grants or loans to worthwhile projects through some sort of competitive process. A second way of getting needed capital is to enlist the private sector to invest in system development with the understanding that they will share in the savings.

30. Although administrative or operating cost savings often result from these reforms, there is potentially a negative budgetary impact as well. To the extent that more effective service delivery systems make services more accessible, especially social services, one can expect that their use will increase. If one no longer has to travel some distance to apply for assistance or the person (or computer) processing the application reminds the applicant that he/she is eligible for a related service, the percentage of eligible recipients who do not participate should decrease. While few governments would acknowledge that barriers to use are being employed as a budgetary tool or would argue that use of public services should be discouraged, we know that real budgets are based on real data on use rates. Offsetting this, at least to some degree, one can also expect that, especially in social services and health, integrated and co-ordinated service delivery should detect and even prevent duplicate and even fraudulent services.

B. Changing public expectations

31. The larger world in which governments operate is changing. One can now do business with one's bank via ATMs around the clock and the increased use of "800 numbers" and now the Internet make it possible for individuals and business to operate in ways not bounded by time or place. Not only do businesses and the public expect the same of government, the increase in the percentage of multi-wage earner households means that appearing at a local office between the hours of 10 and 4 to transact one's business is simply no longer feasible for many individuals.

C. The political agenda - external and internal

32. Politics, by definition the authoritative allocation of power, is a significant factor in two respects. Externally, it is clear that the political leadership of the countries visited is responding to changing public expectations and sees the political attractiveness of being pro-reform. The colour of the government seems to matter little. More conservative regimes (conservative here defined as describing governments that take a restrictive view of the role of government) often use reform as a way of constraining the size and role of government. More liberal (or expansive) regimes see reform as a way of making government work better and improving the public's view of the value and competence of public institutions. Both see reforms as a way of saving money. For the most part, governments, whatever their conception of government's role in society, do not want government to work less well. While it may be somewhat outside the scope of this study, it was striking to observe that public management reforms and IT-driven reform in particular, have now survived and even been reinvigorated through major changes in government in several countries. Early fears that reforms visibly associated with parties of one colour would be repudiated by their successors have proven to be unfounded. The rhetoric and emphasis may change, from "less" government to "better" government, for example, but the priority afforded the reforms seems undiminished.

33. A perhaps less constructive, although not entirely negative, aspect of external politics of placing public management reform on the political agenda is the establishment of broad, often very ambitious goals. Very often these goals are set early in a new government before its ambitions have been tempered by a more cautious public service. Thus, for example, the French government announced that all 2 000 of its public forms would be available electronically or the British government that 25 per cent of transactions with the public would be electronic. The good news is that these goals tend to galvanise support and drive achievements well beyond what might be accomplished absent such ambitious goals and they are typically stated in a way that gives flexibility. What is most significant is that leaders of governments are increasingly describing reform in IT terms.

34. Internal politics are more vexing. Changes, such as horizontal integration of services, cut across traditional organisational and bureaucratic boundaries. These new organisational arrangements represent a threat, not just to the civil servants whose rank and even positions may be at stake, but to the ministers who must give up control and, often, power. The Australian Centrelink initiative was the talk of almost every capital visited, in part because of the technical aspects, but more often because of the willingness of two ministers to co-operate in this fashion. Ultimately, technology is allowing and even promoting the integration of service delivery systems across traditional bureaucratic and legal boundaries. While technology sometimes allows one to deal with this problem through what U.S. Vice President Al Gore calls "virtual organisations", where old structures remain intact but, to the customer, restructuring and shifts of real power and resources are sometimes inevitable. The politics of integrating across levels of government are even more complex. The Australian business registration process assumed no change in power relationships. The Finnish legal aid project, on the other hand, required a radical redefinition of roles.

D. Privatisation and corporatisation

35. Privatisation (here defined to be the divestiture by government of programmes previously operated in the public sector) and corporatisation (here defined as the creation of organisations within the public sector that are expected to exist from revenues generated by selling their services to buyers who are not obliged to use one source) both add to the pressures to apply IT innovatively. The notion that some government needs to run "more like a business" carries with it a requirement to control costs while improving service levels in order to be competitive in the marketplace.

E. The cultural and legal framework

36. Each of these projects is being developed within a framework of social and legal norms. The most obvious is the set of rules around information confidentiality and privacy. In some nations, the notion of a national identity card and number is anathema; in others it is a reality. Similarly, central data registries, a part of the fabric of Swedish system, albeit subject to strict control under the data protections statutes, could not exist in other countries. These concerns and constraints define the range of feasible solutions. A government-run central certifying authority for validating the signatures of businesses and individuals may be the right solution in one country, whereas a decentralised system using private sector intermediaries may be the only acceptable approach in another. We are seeing both models emerge and both can work, at least technically.

37. Local and national norms define what is feasible in other ways. The level of technology penetration sets the pace at which a new delivery system can be deployed. The French acknowledge that efforts to push Minitel retarded the adoption of Internet technology, at least in the home. At the same

time, the French public is probably more technologically attuned so that, setting aside the financial investments involved, they may be more ready to adopt new technology than some other populations.

F. Intervening variables - the EU and Y2K Problem

38. This paper would be incomplete without at least a passing reference to the effect of the EU, and most particularly European monetary union, and Y2K. In every capital, we heard that scarce IT resources were being diverted to either or both and that the resources available for modernisation were limited. That is certainly a factor that materially affects all countries. There is a strong argument that fundamental systemic changes might be halted or at least delayed. In some areas, however, the work associated with addressing these needs may be an ideal opportunity to rethink existing systems. In Finland, for example, the EU farm subsidy has created both a need for and an opportunity to rethink the model for collecting land and livestock data and for distributing payments.

G. The impact of electronic commerce on governments

39. The direct impact of electronic commerce on government -- electronic exchanges involving commercial and fee-for-service transactions -- is currently relatively small. But the issues raised by its continuing growth and application to government service provision are substantial, paralleling the opportunities for public management reforms created by other IT developments. As citizens and businesses become increasingly accustomed to conducting electronic transactions and the infrastructure is further developed, further shifts are anticipated in how government services will be delivered, impacting not only the efficiency of service delivery, but also access, convenience, and responsiveness.

40. These impacts can be seen not only on changing government approaches to direct and third-party service delivery, discussed elsewhere in this paper, but also on direct government procurement, made more competitive through electronically available information. Government, while not a dominant player, is often an important purchaser of goods and services, especially in those nations with a large military apparatus. Electronic commerce -- and more transparent dissemination of information on the Web -- is important to improving the efficiency of public procurement systems. The adoption of electronic commerce by governmental entities can be an important catalyst for other actors in the economy. However, direct electronic purchasing in government procurement programmes remains quite small at this stage, though some countries have set targets to increase this limited use (e.g. U.S., Sweden).

41. Apart from its role as policy-setter and regulator, government has a serious interest and can be an important player in the growth of electronic commerce economy-wide through the development and operation of public management systems and structures. Government operates major systems that define the manner in which commerce is conducted. The most obvious is the customs and tariff function which, if properly redesigned, can support and encourage electronic commerce and thus, the speedy movement of goods. Governments are finding that new production and *matériel* management concepts, like "just-in-time", require that public systems allow for faster data interchange. In a similar fashion, apparently internal management decisions about functions like immigration and tourism can materially enhance or inhibit the potential for electronic commerce in the transportation and tourism sectors.

42. Though these changes have started to happen in government already, there remain significant challenges to be resolved before further advances can be realised. These include resolution of issues surrounding encryption technology and the government's use of it, authentication and non-repudiation of online parties, development of the public key infrastructure to facilitate these initiatives, and not least,

concerns about unequal access to services favouring those citizens and businesses with the means and capacities to exploit these technologies. Governments have been working actively to resolve these issues to allow their application to public services, but they have also recognised that such changes may be accomplished at less cost to taxpayers by awaiting private sector development of the infrastructure and technologies before moving to fully exploit their strong potential for increasing access to services, speed of response, efficiency and cost savings.

VI. IMPLICATIONS FOR PUBLIC MANAGEMENT AND FOR GOVERNANCE

A. The relationship of the State to the information society

43. There seems to be a near universal commitment to some notion of the information society. Each nation has adopted, most quite visibly and explicitly, a policy that says that the quality of life of its residents and the future competitiveness of its economy require a societal commitment to greater exploitation of the potential of IT. Each sees the role of government as having several parts:

- as policy leader, stating the charge and promoting strategic investments;
- as facilitator, creating legal and regulatory frameworks that encourage, or at least do not inhibit, the indigenous information industry and the use of IT, while setting boundaries and managing consequences, e.g. privacy;
- as leading by example, employing IT to demonstrate what is possible; and
- as a client of the information society, using the capabilities that are developed to accomplish its service objectives.

44. This phenomenon of the relationship between the state and the information society is interestingly similar to the relationship between the state and the industrial society. As in the industrial age, government finds itself limited by the capacity of existing infrastructure. In some cases, governmental activities are being used as a catalytic force to spur infrastructure development much in the way that national security needs sometimes influenced the development of transportation systems.

B. New partners and partnerships

45. Technology is profoundly changing the nature of the relationship of government to other actors in society. In some instances government truly gets closer to the people, through the use of “800 numbers” and direct electronic access via the Internet. But even the language of the conversations about service delivery is changing. Rather than talking in traditional public-private sector terms, the words “intermediaries” and “partners” laced each discussion. The success of the efforts to streamline tax reporting or health care systems depends on each “partner” modifying its processes in its own interest to the greater good of all. Government service delivery points may be an airline counter or an electronic kiosk in a shopping mall or a personal computer at home or at school rather than the traditional government office.

46. Intermediaries, how they play and how they are financed, raise all sorts of questions. The Finnish proposal to use third parties for business reporting or the French approach of using tax preparers to convert data to government prescribed electronic formats place existing institutions in new roles and

even create new institutions and industries. The matter of who pays is tricky. In some cases, like tax preparation, the intermediary is already providing a value-added service and this new function is one for which the traditional customer is happy to pay. In other cases, however, the French note that it may be necessary and appropriate to pay intermediaries as their interventions redound more to the benefit of the governmental authority than to the individual. This is certainly the case for certifying authorities on the Internet, where the business model is that the organisation or business seeking to verify the identity of an individual or business pays for the service.

C. Changing structures - "de facto" and "de jure"

47. It is not clear whether formal organisations will change drastically, although the Australian Centrelink experience suggests that some will grow and others will shrink. Traditional government agencies built around extensive service delivery networks for a specific programme, so-called stove-pipe organisations, appear to be coming under increasing pressure. Traditional service delivery systems and organisations can be expected to persist and may be appropriate for certain functions; e.g. law enforcement. Alternative forms of organisation, either built around a client or a speciality, with service delivery totally in the hands of a third party, are emerging as an important model.

48. A related structural implication is in budgeting and financial management. Traditional organisations and budgeting frames make it difficult to plan and finance delivery systems that do not observe those boundaries. France and the UK, for example, are committed to imposing cross-cutting budget reviews on their traditional processes.

D. Managing across levels of government

49. Especially in areas of shared or overlapping responsibilities, the application of IT in the current wave is exposing anomalies in structures. In some cases, like health care, the technology offers the solution by permitting data exchanges that improve co-ordination of care and reduce duplication. In others, the inevitable result may be revisiting historic divisions of responsibility with resultant shifts in both directions -- to the locality from the centre and vice versa.

E. Ethics and trust in government

50. Greater use of IT means more and more sensitive information flowing across electronic networks. While the rules governing the flows are a policy/legal question and building trusted systems that comply with the rules is a technical matter, there is more. Public confidence in public institutions is critical to the deployment of some approaches, although, as noted above, there may be ways to work around this, such as the use of trusted intermediaries.

VII. ISSUES

A. Information sharing, confidentiality and the smart card

51. Greater use of IT to deliver services often implies greater integration of systems and information sharing. The use of the so-called "smart card" means not only the use of an identity card or cards, but the inclusion of more than just basic identifying information in those cards. These developments raise obvious issues about privacy and confidentiality that are important not only as a matter of social policy,

but also condition the willingness of individuals and businesses to participate if participation means giving up more information about themselves.

52. The option of fragmentation continues to exist, but imposes two serious limitations: (1) the advantage gained from some IT applications depends directly on data sharing; and (2) at some point the burden on the participant becomes unacceptable. Imagine requiring individuals to carry a separate smart card for each government programme with which they do business. There is a well developed set of privacy and confidentiality principles in most countries, but their application in this new landscape will require considerable work.

B. Authentication

53. A corollary problem, although sufficiently specialised to warrant special mention, is the matter of issuance and authentication authorities. Growing use of information technology to deliver services requires that there be mechanisms to issue identity numbers or codes, to validate that individual or business is who he/she purports to be and even to guarantee the transaction in order to avoid fraudulent use of services.

54. In the credit card model, the issuer is also the authenticator and, by virtue of the relationship, knows of virtually all transactions, for which the card is used. In the driver's license model, a state authority issues the license but is seldom if ever called upon to authenticate and thus has little if any data on the use of the card. To the extent that multi-purpose smart cards are developed, there is a growing need for the creation of authentication authorities. This in turn raises serious questions as to what limitations should be imposed on their use.

C. Ability and willingness to adopt IT solutions and questions of equity

55. Several types of issues come into play that can, at least in the short run, result in dramatically different levels of use of IT . The first type deals with matters of social and political norms. Practices regarding the use and sharing of data, which may be perfectly acceptable in one nation, may be perceived to be abusive in another.

56. A second type of issue is about societal readiness to use IT. Like the use of the telephone to provide services, use of IT only becomes feasible when the population affected has sufficient access to the technology and is comfortable with its use. In most nations, this will probably require maintaining multiple means of access to assure equity in access to government services.

57. A related but different problem is the matter of the level of infrastructure available. Again, like the telephone, government is often not the sole or even a principal user of the electronic delivery systems that it seeks to exploit. Thus, deployment of certain technologies often depends on the evolution of other economic and social institutions (e.g. banking or credit or health care providers) that will be the driving users of the systems that government will use.

D. Pricing information

58. Use of IT for service delivery often creates new relationships. This raises several questions about pricing including whether and, if so, how, public access to these services should be priced. And to

the extent that new roles are defined, who should pay the costs. In some instances this may be obvious where traditional service providers, like accountants, can add electronic reporting to their repertoire of services for which their traditional customers may be willing to pay. In other cases, like electronic reporting for individuals who have not historically employed intermediaries or the provision of electronic identification and identity validation, government may gain sufficient economies from such functions to find it advantageous to pay for or at least partially subsidise such services to spur their use.

E. The need for evaluation

59. It is not surprising that, while initiatives that improve efficiency are generally well-documented, there is less information available on overall effectiveness or the effect of these projects on the populations they are designed to serve. Service delivery targets and measures are a fairly recent phenomenon so that government authorities are only beginning to focus on such measures as average wait time, for example. Evaluation strategies need to look at the whole system; it does little good to reduce the time to process an application by a few minutes if the applicant has to spend hours or days compiling the information required to submit the application.

VIII. SOME EARLY LESSONS LEARNED

A. Being first costs

60. Being an early adopter of new technology has its costs in several respects. First, to the extent that, as is increasingly the case, government's use of IT depends on other institutions in the economy deploying the assets that government applications will use, early adopters will bear a greater portion of that cost.

61. Second, early adopters are more prone to the vagaries and uncertainties of any innovation. They will find the errors and learn the lessons from which those who wait will profit. In the IT world, the watch-word is never to deploy version 1.0 of anything. Version 1.2 (or preferably Version 2.1) will be much better and less error-prone.

62. Third, early adopters are likely to find themselves with obsolete technology for which they have paid substantially more than those who wait. The advantage is that they will have experience.

63. This is not intended as an argument for not going first. Carried to its illogical extreme, that would mean that no-one would ever innovate. What this suggests is that, if a concept or approach is unproved, deployment may be staged very differently than for a well understood initiative or technology.

B. Being in the retail business may not be the best answer - the changing roles of intermediaries

64. The notion of government as point of service delivery is changing. It may well be that banks, credit card companies, accountants, trading companies, and travel agents will be the entities through which those who do business with their governments will be served. The advantages of this approach are obvious. These entities have often already built the systems so that providing the additional service may be only a small add-on. Indeed they may see it as an advantage. Further, they already have a relationship with the customer or entity being served. From the customer's or citizen's perspective, it means that the governmental service becomes truly transparent.

65. The conventional wisdom is that IT is eliminating the need for government to provide assistance to individuals and businesses as they become direct users of services; i.e. the entity seeking a service can now access an agency electronically rather than having to deal with an intermediary in the form of a government clerk. This phenomenon is called "dis-intermediation." The cases reviewed in this study suggest a different conclusion. IT is causing the creation of a new set of intermediaries or the use of existing institutions that have relationships with individuals and businesses to provide intermediation in new ways, what Paul Saffo of the Institute for the Future calls "re-intermediation."

66. This phenomenon raises an interesting political question as the role of government as service provider becomes less visible. While surveys show that, as a rule, people prefer to see less of their government (tax collecting agencies being mentioned most often), it is not clear how the public will react when asked to pay taxes to their governments for services they see as being provided by others.

C. A new geography

67. The concept of location is changing in several ways. Work is no longer as place-dependent. For activities that still require face-to-face contact, in an effort to bring the point of service closer to those being served, IT makes it possible for governmental organisations to use existing networks rather than build new offices. These may be banks, travel agencies, post offices or any other entity that has a physically dispersed set of service delivery points. These extended networks may be either in the form of IT-enabled intermediaries who can handle many of the routine matters previously requiring a separate visit to a specialised government office, or the placement of electronic access devices (ATMs, Internet capable PCs) in those locations. Ultimately, service delivery points reach into the home with the computer and telephone.

68. When the method of service delivery is not face-to-face, the person providing the service can be anywhere. In its simplest form, this may mean call centres or other centralised service operations that improve operational efficiency. Rather than have dispersing experts around the country, staff can be centralised, or organised by speciality so that all with a particular expertise are in a given location, thus making more efficient use of their skills instead of requiring everyone to be a generalist. Even when workers are dispersed geographically, IT is permitting load balancing so that, when workers on one region have a backlog, some of that work can be shifted. Ultimately, IT is making it possible for some government workers to operate from home.

69. All in all, the findings of this work to date suggest that the nature of what governments do and how they do it seems to be changing in important ways, whether driven by the need to conserve resources or to deliver government services better. Moreover, there are some remarkable commonalties among the experiences across the countries examined and across the spectrum of government programmes.

IX. AREAS FOR FURTHER STUDY

70. The nature of this study was essentially diagnostic. A quick review of five countries can only produce a set of impressions about the state of the practice. Several areas of additional inquiry suggest themselves.

A. Expand horizontally to test hypotheses

71. This report is, in some ways, a set of hypotheses about what is driving IT in public management, what works and what does not. Expansion of this work to some additional countries would both expand the database and help turn hypothesis to rule or discredited hypothesis.

B. More intensive comparative data

72. Alternatively, or perhaps in tandem with more study visits, it would be useful to design and administer a survey of all OECD countries to examine the role that IT is playing in their management reform programmes, including quantitative data on the extent of electronic service delivery, and public use of it.

C. Look at systems from outside in

73. The current study looked almost exclusively at government from the inside out -- asking governmental agencies to describe what they were doing. It might be interesting to select one or two sectors (e.g. health or taxation) and conduct a review from the perspective of the population affected.

APPENDIX A: PROJECT PROFILES

Note: These brief descriptions or profiles have been provided to give readers a sense, in more concrete terms, of some of the innovative, exciting initiatives being undertaken in the countries studied. They are not detailed case studies. Rather, they are intended to provide enough information to allow the reader to decide if he/she wishes to investigate further. Thus, wherever possible, e-mail addresses or web site locations are provided as well.

AUSTRALIA

Centrelink

74. Like many OECD governments, Australia has, over the years, developed a number of customer service organisations to deliver specific social services or benefits. The largest entities were the Department of Social Security (DSS), the Commonwealth Employment Service (CES), the Department of Health and Family Services (DHFS), and the Department of Education, Training and Youth Affairs.

75. On 24 September 1997, the government launched Centrelink, combining the customer services previously provided by DSS and CES. DSS, for example, was reduced from a staff of 21 000 to a small policy body of about 600-700 people. In 1998, DHFS child care payments as well as the rural assistance programme of the Department of Primary Industry and Energy will be added to Centrelink's portfolio. Centrelink is overseen by a board that includes both public and private sector partners. Centrelink will operate at 450 locations each with between 5 and 120 staff, cross-trained in the range of services provided. Centrelink plans to augment existing customer support modes (face-to-face, phone and mail) with new technologies including kiosks, the Internet, smart card, and interactive voice systems making its services available around the clock (7x24).

For additional information:
Ms Jane Treadwell, Chief Information Officer,
(jane.treadwell@centrelink.gov.au)
http://www.centrelink.gov.au

Customs

76. The Australian Customs Service was facing increasing volumes of work and a decreasing workforce. Between 1987 and 1997, passenger traffic entering the country increased by 100 per cent and the volume of commercial transactions grew by 50 per cent, while staffing decreased by 20 per cent. At the same time the nature of the customs business was changing. Competing in global markets meant

supporting "just-in-time" inventory management (long delays at ports of entry could pose intolerable costs) and "repair and replace" maintenance meant more movement of goods.

77. To cope with these changes, Customs works closely with Tradegate Australia, an association of firms and organisations with interests in international trade. Tradegate operates an EDI network and a gateway to the Customs processing centre. It also supports the development of EDI standards and policies. Next steps include the development of partnerships with key importers, which will reduce the need for individual import entries and Customs specific data by the introduction of periodic reporting and by direct access to corporate systems.

For additional information:
Mr. Cliff Gilbert or Mr. Tom Wodzinski, Australian Customs Service,
(cliff.gilbert@customs.gov.au or tom.wodzinski@customs.gov.au)
http://www.customs.gov.au

Health care

78. Australia spends nine per cent of its GDP for health care - 70 per cent of which is funded by the Commonwealth, although the programme is largely administered by the States. Public hospitals are free to the patient and patients are reimbursed for their use of private practitioners. As the Australian government corporatises much of the financing and support structure for health, the role of the Department of Health and Family Services (DHFS) is evolving as well. Internal IT services are moving away from transaction processing towards information and knowledge management.

79. The IT Strategic Plan for 1997-2000 calls for shifting "to a focus on health care outcomes based on individuals rather than providers." To that end, the Department has undertaken co-ordinated care trials in 14 general community settings and four indigenous community settings. It is also supporting demonstration projects in tele-medicine, a particularly important development in a nation with a widely dispersed population.

For additional information:
Dr. Ian Heath, First Assistant Secretary, Information Technology Group, Department of Health and Family Services
(ian.heath@health.gov.au)
http://www.health.gov.au

Immigration

80. Immigration is a particular challenge to a nation that spans a water bound continent and thus has relatively few major points of entry. With the advent of long range jumbo jets, Australia has experienced a dramatic growth in passenger arrivals (from 3.3 million in 1986/87 to 7.3 million in 1996/7) and faces the prospect of a further dramatic increase for the 2000 Summer Olympic Games and the subsequent hoped-for increase in tourism that the attention of the Olympics could generate. For both policy and operational reasons, Australia requires entry visas for all non-citizen entrants into the country.

81. To meet the increasing demand within the existing infrastructure, the Department of Immigration and Multicultural Affairs (DIMA) had already instituted a number of administrative measures to reduce processing time to 50 seconds per passenger. Anticipating even more strain in limited facilities, it embarked on a project to reduce processing time for incoming passengers to 20 seconds per person. A key element of the strategy was the development of an electronic visa, called an Electronic

Travel Authority (ETA), that would, in effect, permit passengers to be cleared prior to landing in Australia. Passengers apply for a visa by providing passport numbers, citizenship and limited additional information either to the travel agent or the airline in connection with booking passage to Australia. By computer link to travel agent and airline computers, DIMA can issue an ETA within seconds. Rather than having arriving passengers fill out entry cards or have their travel documents examined at length upon arrival, the airline now can issue the passenger an entry card, with relevant information pre-printed and encoded onto a magnetic stripe so that, with one swipe, the immigration officer can clear the arriving passenger - actual clearance takes 0.5 seconds. A passenger manifest is available to immigration before the aircraft departs for Australia so that any anomalies are known and can be dealt with. A pilot test with QANTAS has proved the concept and full deployment is under way.

For additional information:
Mr. Mark Sullivan, Deputy Secretary, Department of Immigration and Multicultural Affairs,
(marksull@ozemail.com.au)
http://www.immi.gov.au

Taxation

82. Throughout the 1970s, automation had been applied to the tax processing system to improve internal efficiency. The resultant systems, however, were not connected, with separate systems and databases for income taxes, withholding taxes, wholesale sales taxes, and estate and gift duties. Refunds could take as long as 12 weeks and the technology was ageing.

83. In the late 1980s, the technology was replaced with more modern software and hardware. Electronic lodgement (filing) was introduced. By 1989, 90 per cent of professionally prepared returns were being filed electronically and Australia Post was offering a service of keying in returns for electronic filing for a fee (of A$ 20). To simplify and streamline the process still further, additional improvements have been made since, including allowing tax payments to be made at post offices (increasing the number of payment points from 31 to 4 000), permitting electronic payment for individuals and EFT for employers. Organisationally, the Taxation Office has restructured along client lines (e.g. large businesses, small businesses, individuals) to create a stronger client focus in the business processes.

For additional information:
Mr. Bruce Jones, Second Commissioner of Taxation, Australian Taxation Office,
(bruce.s.jones@ato.gov.au)
http://www.ato.gov.au

FINLAND

Citizen's Guide

84. An important element of the Finnish government's efforts to provide electronic access to service is its Citizen's Guide, an Internet-based service that organises all public information and links more than 50 government agencies and 200 municipalities. Information is organised in a variety of ways including phase of life; e.g. children, young people, and working age.

85. In a corollary effort, the government of Finland is replicating most of its production databases and making them available. This provides a single point of access to a variety of governmental databases making it possible, for example, to access the text of laws as they go through the parliamentary process and to monitor what an MP has proposed or what she/he has said.

For additional information:
Mr. Olavi Köngäs (olavi.kongas@vm.vn.fi)
http://www.opas.vn.fi/ (Citizen's Guide)
http://www.eduskunta.fi/ (Databases)

Policy co-ordination

86. The Prime Minister's office faces the formidable task, similar to those of other heads of government, of co-ordinating policy development across thirteen ministries. To address that need, the Office has developed a network that serves the 3000+ officials who comprise the ministries. In use now for more than seven years, this network provides a common bulletin board and e-mail connections among all ministers and their staffs. In 1997, the office instituted the VN-Fakta project to create a common interface to information used by officials in the Council of State to eliminate duplication of effort and assure that officials are working from the same, up-to-date information.

87. More recently, an electronic decision support system has been used to prepare for cabinet meetings. Proposals are circulated electronically and, if there is no disagreement, they can be adopted without extensive discussion in cabinet meetings. Reportedly, ministers and their principal staffs use the system directly, not through intermediaries. This saves precious time in cabinet meetings for more in-depth debate on important, controversial matters.

For additional information:
Ms. Riitta Kirjavainen, Director for Development, Prime Minister's Office
(Riitta.Kirjavainen@vmk.vn.fi)

Legal aid

88. Like many countries, Finland faces growing backlogs in its judicial system. Further, there is an increasing burden on the State as legal aid for most individuals is financed by the State, although provided through 452 municipalities.

89. In an effort to improve service, speed action in the courts and reduce costs, the Ministry of Justice is developing a system that will permit civil actions to be filed electronically both from legal aid offices and private law offices. Case tracking and judicial support have already been automated and are handling a 200 per cent increase in workload. Finally, the number of legal aid offices will be reduced and,

effective 1 July 1998, will become State offices. This will permit load sharing among offices and the concentration of expertise in particular offices and courts.

For additional information:
Mr. Antti Holmroos, Chief Information Office, Ministry of Justice
(antti.holmroos@om.vn.fi)

Citizen's Card

90. The Finnish government has undertaken an ambitious project to explore the use of a single smart card or identity card to speed the operation of government and the delivery of services. Use of the card raises obvious issues ranging from technical feasibility to willingness of the public to accept the card to concerns about confidentiality and privacy. The government is moving cautiously through three pilot projects that will explore the legal, technical, and cultural implications of this technology:

1) the Ministry of the Interior will use the smart card in the city of Espoo, near the city of Helsinki, to permit authorised police officials to gain access to the population register, an obviously highly sensitive database;

2) the Agriculture and Forestry Ministry will issue smart cards to 50-100 farmers that they can use to apply for subsidies;

3) the City of Espoo will issue smart cards to 100 citizens that will allow them to apply for child care and municipal housing.

For additional information:
Mr. Olavi Köngäs, Chief Information Officer, Public Management Department, Ministry of Finance
(Olavi.Kongas@vm.vn.fi)

Agricultural subsidies

91. The European Union's regime of agricultural subsidies has required many governments to overhaul their existing administrative process and supporting systems. Specifically, administering agricultural subsidies requires greater specificity in data on parcels of land in agricultural use and on livestock.

92. The Ministry of Agriculture and Forestry is in the process of developing a database that will digitise all land parcels by the end of 1998 and enumerate all livestock. The system will support 1 000 users at 18 locations. At the same time, the Ministry is one of three pilots in the use of smart cards (see above).

For additional information:
Mr. Juha Redsven, Senior Policy Analyst, Information Technology, Information Centre, Ministry of Agriculture and Forestry
(juha.redsven@mmm.fi)

Health care data

93. Finland has a highly decentralised health care system, operated by 452 municipalities through a combination of government-run, shared health care facilities, and private providers. Approximately,

90 per cent of the funding comes from the State. The role of the Ministry of Social Affairs and Health is to provide general guidance, information to encourage improved practices and to deal with policy issues. It maintains a database using 2 000 variable to produce 230 indicators on the performance of the health care system. It also maintains ten registers on clients, but is permitted to use those data only for statistical purposes.

94. To improve the quality and co-ordination of health care and to manage costs, the Ministry is funding pilot projects at the retail level including the development of a network that will permit co-ordination of care. (A study in 1993 revealed one person who had 386 health care visits in one year.) One pilot will involve the use of a smart card (eventually possibly the citizen's voluntary national identity card) to provide "seamless care" in one region in the Spring of 1998.

For additional information:
Mr. Hannu Hämäläinen, Project Manager, Finance and Planning Department, Ministry of Social Affairs and Health
(hannu.hamalainen@sfm.vn.fi)

Consolidating data collection

95. Companies in Finland face the same problem as in many other nations, an obligation to file reports with multiple governmental authorities, often with the same or similar information. Efforts to use EDI, electronic data interchange, have reduced the cost of providing and transcribing data considerably, but the problem of duplication still exists. At the same time, reporting entities are often reluctant to have information about their activities flow freely across governmental agencies; e.g. to have the tax authority see all of the data provided to the social insurance agency or a regulatory authority, or vice versa.

96. To reduce the burden of reporting while addressing legitimate concerns about confidentiality of information, the Ministry of Finance has conceived a pilot project in which private sector intermediaries will serve as collecting and reporting entities, engaged by companies to report to the government. Companies will presumably provide an electronic link to a trusted third party of their own choosing, who will in turn produce the separate governmental reports electronically at a cost lower than the individual companies would incur. Thus, each ministry will only see those reports in which it has a legitimate interest. Five companies - and possibly more - will participate, the post office, Finnish telecom, a private telecom provider, an information technology services company and a small company that specialises in EDI.

For additional information:
Mr. Olavi Köngäs, Chief Information Officer, Public Management Department, Ministry of Finance
(Olavi.Kongas@vm.vn.fi)

FRANCE

Health care

97. Health care in France is provided through a highly decentralised system but is largely State financed (more than 80 per cent). Individuals obtain care directly from a provider, pay him/her and obtain a form, which the patient then submits to the State for reimbursement. Upon receipt of the payment the patient then applies to the private insurer for any supplementary coverage. It is estimated that 100 billion transactions move through this system annually including not only claims for reimbursement but also communications among health care providers; e.g. physicians and hospitals.

98. Electronic exchange of information in the health sector touches a range of actors (administrations, health professionals, universities, public health departments, health insurance entities, the pharmaceutical industry, other health care entities) and numerous aspects of health care service (administrative and financial matters, individual medical information and continuity of care, access to general medical knowledge, public health and sanitation, medical research. The programme, which began in March 1998 aims at establishing within two years a network that involves all relevant actors, supporting two types of smart cards:

- the first, known as the "carte vitale," will serve the patient;
- the second, known as the "Health Professionals' Card", addresses the full range of health care professionals. The card is a concrete and practical means of ensuring security of access and of electronic exchange of information among the different health care actors, while maintaining the confidentiality of sensitive information.

99. Once fully implemented, the programme will serve as the basis for transferring secure medical information that can facilitate better co-ordination of care, including warning systems related to epidemiology and global evaluation of the quality of the health care system, while maintaining sensitivity to existing professional and ethical norms and the privacy concerns of patients.

For additional information:
M. Gilles Taïb, Directeur du Groupement d'Intérêt Public de la Carte de Professionnel de Santé (GIPS-CPS)
(g.taib@gip-cps.fr)

Electronic Data Interchange

100. As part of its overall strategy to use technology as a means of improving services and promoting an information society, the government issued a directive promoting the use of electronic data interchange between government and its partners and called for a master plan. In France today, according to officials in the Ministry of Finance, 20 per cent of households have personal computers and ten per cent of those are connected to the Internet; i.e. two per cent overall. One third of households - perhaps many or most of the same households - have access to Minitel. Of France's 3 million firms, 95 per cent have fewer than 10 employees and half have only one employee. About 1 million firms have access to the Minitel.

101. That plan was issued in March of 1997 and articulates several principles, among them: (1) EDI must be win-win - all parties must gain; (2) the capacity of parties to participate must be considered and multiple means of access, including Minitel, must be maintained; (3) technology should employ

recognised industry standards and interfaces must be sufficiently stable to encourage partners to invest in adapting their systems; (4) security, an important feature, must be consistent with the sensitivity of the information being transmitted; and (5) the government must be willing to pay intermediaries who add value. This set of principles establishes an important framework for the use of EDI throughout the French government.

102. Translating this policy into action, in January 1998, the government issued the Lorentz report, which sets specific deadlines including the requirement to make all government forms available electronically.

For additional information:
M. Olivier Perrault, Sous-Directeur, Délégation aux Systèmes d'information, Ministère de l'Économie, des Finances et de l'Industrie
(dsi-secretariat@dsi.finances.gouv.fr)

Electronic Filing of Tax Information for Business

103. Tax filings from business, farmers and professionals annually generate a stack of paper the equivalent of six kilometres high - and the law requires that these forms be retained for ten years. And that does not include supporting materials.

104. Beginning in 1990, the French tax authority undertook an initiative to reduce that stack of paper through a multi-stage initiative. First, electronic forms were developed that could be read by a scanner, reducing preparation costs for some filers and data acquisition costs and errors for the tax authority. In the second stage, enterprises were permitted to submit information electronically, on magnetic tape, using intermediaries certified by the tax authority. As of January 1998, 275 entities have been certified. Beyond the savings in the filers' internal processes, firms that file electronically are allowed 15 extra days to file.

105. As a next step, the authority plans to have the capability to permit individuals to file electronically by the year 2000. Today, French taxpayers can use a facility on the Internet or Minitel to calculate their taxes but still file paper.

For additional information:
Mr. Jean-Marc Valès, Administrateur civil, Direction générale des impôts
(jean-marc.valès@dgi.finances.gouv.fr)

Modernising the budget process

106. Today, the French government's system for accounting and budgeting makes it very difficult to relate accounting information to the budget, to relate these to performance information, or to support the information needs of the ministries, whose interests are national, and the local prefect, the senior official in each prefecture. National-level programmes are administered under the authority of the minister. For locally administered programmes, only the prefect may authorise expenditures and only the prefect paymaster general, an official of the Finance Ministry may issue a payment.

107. The ACCORD (*Application Coordonnée de Comptabilisation, d'Ordonnancement et de Règlement de la Dépense*) project will unify the accounting system through a sophisticated information centre. It will also provide complete data to all actors (national and local government), establish a real

accrual accounting system at all levels of government, and computerise a significant number of accounting records as well as bank transfers through the use of EDI.

For additional information:
M. Alain Turc, Directeur délégué à la maîtrise d'ouvrage du projet ACCORD
(alain.turc@cp.finances.gouv.fr)

Telecommuting

108. The Dairy Board, an agency under the direction of the Ministry of Agriculture, is responsible for implementing the system of payments to producers under the EU-financed dairy subsidy programme. It has a workforce of 300, 230 of whom operate out of single location in Paris. One function, performed by a large number of staff, is examining and verifying claims for subsidies, calculating the payment due, and then entering the information into the Board's database. Many in the workforce have long commutes.

109. In 1996, in partnership with the Office of Public Management in the Prime Minister's Office, the Board established a pilot project in telecommuting for five employees, who volunteered for the pilot phase. The current plan is to expand the project to additional claims processors who wish to participate and to review other positions for possible telecommuting. Each employee in the test was provided a computer, including printer, and a telephone line. Once a week each employee was to come to the office to pick up and drop off case files and for any team meetings. The rest of the week, the employee worked from home, connecting to the office computer via the telephone. The results were dramatic. Productivity increased by between ten and twenty per cent, absenteeism decreased as employees were able to deal with minor illnesses and family emergencies without being absent, and morale improved. The principal negatives were the cost of telecommunications (procedures have been modified to allow employees to work off-line most of the time and connect only when transmitting or receiving data), and the greater complexity involved in distributing calls from applicants between workers in the office and workers at home.

For additional information:
Mme Francoise Langevin-Mijangos, Secrétaire-général,
Office national interprofessionnel du lait et des produits laitiers

SWEDEN

Passport System

110. The Swedish government issues approximately 1.8 million passports annually (total population is 8.8 million). Applications are accepted at 250 locations throughout the country, typically police stations. The police authority, a State entity, is the issuing authority for passports.

111. The automation of the passport issuance process is an interesting example of the potential of and issues raised by IT. Prior to 1989, applicants had to appear at the police authority, present an authentication document from their place of birth, and fill out an application. The application was then passed through a series of reviews and a hand-written passport was issued, typically within three weeks. Automation in 1989 changed the process profoundly. Applications were processed on the spot, authentication documents were no longer required for adults and the necessary verifications against the national birth or citizenship records and other relevant records were done while the applicant waited and the passport was issued, often with six minutes.

112. Recent requirements for a more secure passport document have required a slight retreat from this astounding accomplishment. Since it is not economically feasible to produce secure passports at multiple locations, the production process has been centralised. Effective 1 January 1998, Swedish citizens who need a passport must appear at one of 15 sites, complete an application and provide a picture. The completed application is then scanned and faxed to the production facility and the passport is mailed back to the police station or to the applicant's local post office for pick-up by the applicant, usually within three days. Scanning and faxing is used rather than direct electronic transmission because of the need to transmit the photograph and signature.

113. Public reaction has been mixed. While every effort was made to advise the public that the "while you wait passport" was no longer possible, some applicants are still coming in at the last minute. If they are about to embark on a trip, they must acquire a temporary passport, usually good for one trip, and must pay twice - for the temporary and then again for the permanent passport.

For additional information:
(for the national system) Ms. Brita Ruthström, Senior Administrative Officer, National Police Board, telephone +46-8-401-9395;
(for local-level management) Mr. Tomas Avebaeck, Chief Superintendent, Stockholm County Police, telephone +46-8-401 1002

Labour Market Board - preventing and detecting fraud

114. As part of its system of social insurance, Sweden provides compensation to unemployed persons through a complex of non-governmental unemployment funds, many linked to labour unions. Most (about 95 per cent) of the benefit is financed by the State. More than 85 per cent of the Swedish labour force is covered by these funds, with the balance directly insured by the State. Eligibility determinations are made by the individual funds, raising a substantial potential for fraud and abuse including working while getting student aid or sick benefits. Twice in recent years, *ad hoc* computer matches have been done to identify erroneous or fraudulent payments. While the Labour Board maintains a central register of beneficiaries, it is authorised to use the data only for statistical purposes.

115. In the Fall of 1997, the Labour Board undertook a project to create a system that will allow each of the entities that issues benefits to co-ordinate its actions with the others. Each of the key players, the unemployment insurance funds, the student aid authority, and the social insurance authority (which issue sick benefits, pensions, etc.) agreed to check with the others before issuing a benefit and to respond to inquiries from the others. No central data bases are being created. A co-ordinating body has been established consisting of the Labour Board, the student aid authority, the association of unemployment funds, the social insurance (sick benefits) authority, and the association of municipalities. The role of the Labour Board is to provide for initial development, develop standards and co-ordinate the process. The project is financed by the Ministry of Finance. To date, an architecture and business rules have been developed and a technical solution is expected by summer.

For additional information:
Mr. Leif Tallskog, National Labour Market Board, Sundbybergsvägen 9, 171 99 Solna,
Telephone +46-8-730 6033
(leif.tallskog@ams.amv.se)

Labour Market Board - job placement

116. As part of its efforts to contain unemployment, Sweden maintains a registry of vacant positions for both those who are unemployed and those already in the workforce who seek a new position or occupation. Annually, there are about one million job openings, 35-40 per cent of which were published on the AMS (*Arbetsmarknadsverket* or National Labour Market Administration) database: the balance are presumably filled from within the employing organisation or by other means. Sweden has 350 000 unemployed persons and 150 000 employers that are serviced by 400 State run employment offices.

117. To improve placement rates and effectiveness, beginning in October of 1995, the AMS undertook an effort to create an Internet-based placement system. Using the International Standard for Classification of Occupations, AMS developed 1000 occupational profiles that link job titles, competencies, descriptions and related profiles. In April of 1997, a job seeker data bank was added. Individuals can now file profiles of themselves, electing which portions of the information may be made available to a prospective employer without their permission. Individual access to the database is under individual identification and password control. A next step in the evolution of the system will be making the database and software available to large employers so that they can integrate their internal placement efforts with the larger system; i.e. employers that have a policy that requires that they promote from within will be able to scan their own workforces and, if no one suitable is available, go into the job market without going through two separate systems.

118. In a related effort, a separate database for temporary workers was created for positions like temporary teachers. Since speed, reliability of data and immediate availability of employees are critical, unlike the broader placement system, the AMS placement office verifies the credentials of individuals who register and the individual must confirm his/her availability at least every 24 hours, by phone or e-mail, to remain active.

For additional information:
Mrs. Solbritt Sabally, Labour Management Service, Swedish National Labour Market Board
(solbrit.sabally@ams.amv.se)
http://www.amv.se

Student Aid System

119. The Swedish government provides extensive support for higher, post-secondary education. Tuition is free at public institutions in Sweden and loans are provided to students who choose to study overseas. In addition, an allowance for living expenses is provided through a combination of grants and loans. Loans repayments are set at a percentage of income (currently 4 per cent) and sums not repaid by the time a person reaches the age of 66 are forgiven. Eligibility requirements are quite broad; both traditional students and those returning to school to acquire new skills may be eligible. The number of years that an individual may receive a subsidy is limited, typically to six years, and the student must earn a minimum number of credits (normally 75 per cent of a full-time study plan) to remain eligible.

120. To streamline the application process, the CSN, Sweden's student aid authority, has put the application form on the Internet. Students can now obtain the application at their schools or local government offices (or at home if they have PC with printers). At present they have to fill them in and submit them to one of CSN's local offices as the applications have to be signed in person. As soon as a student has applied for higher education and has been accepted for one of the desired programmes, the student will receive a pre-printed application form. If the educational programme is acceptable, the student need only give CSN a declaration of incomes during the study period. As long as the studies are progressing the student will receive a new pre-printed application each year which he will check and sign. Even more impressive, applications are scanned into the system and processed quickly so that, if there is a potential problem, such as insufficient credits, the student is notified within days to allow him/her to correct the matter if at all possible.

121. In the future it will be possible for a student to use a system of electronic signatures. CSN is prepared to apply this kind of technique whenever the Parliament creates the legal authority to do so.

For additional information:
Mr Leif Carlsson, Advisor, Staff of the Director General, The Swedish National Board of Student Aid
(leif.carlsson@csn.se)
http://www.csn.se/

Municipal information utility

122. In Sweden as in many nations, the local or municipal government is the most visible level of government to most citizens, interacting with them daily on a range of matters from health to education to child care. The Kista district, a subdivision of Stockholm, is the site of 40 per cent of Sweden's IT industry -- it is often called the "Silicon Valley" of Sweden -- but it is also home to a multi-ethnic low to middle income population and fairly high unemployment, currently around 13 per cent.

123. Funded in part by a grant from the European Union, the Kista district has undertaken an ambitious programme to provide connectivity and services to the community. Services include not only governmental activities, but also information on commercial services (e.g. retail stores) in the community. Recognising that not all individuals have access to technology, service is provided via telephone, a one-stop-shop staffed by generalists in a local shopping centre, as well as the Internet. In addition, 50 personal computers are being placed in a city-wide network connecting each of Kista's nine primary schools and, by the end of the year, each student will have an e-mail account. One of the most dramatic uses of the Internet is the child care application. Since October 1997, individuals can use the Internet to examine a map of their locality to identify local facilities, query the system to learn more about each facility, including the care-giving philosophy, and send an e-mail to the director for additional information. Finally, they can even complete and submit the application.

For additional information:
Mr Leif Rydén, IT Manager, The Kista District Administration
(leif.ryden@kista.stockholm.se)
http://www.kista.stockholm.se/

Top Managers' Forum

124. This cross-cutting management group, a body created in 1995 to address concerns about the compartmentalisation of efforts to apply technology, has received much international attention due to the success it has had in initiating public management improvements. As noted in the introduction, the Forum is chaired by the Minister of Finance and thus commands the presence of director-generals from authorities and under-secretaries from ministries. The Forum promotes projects and policy discussions that cut across the public sector and its organisations.

125. In general, projects and initiatives are divided into two categories:

- re-engineering of public administration with assistance of IT; and
- open and secure electronic infrastructure in order to improve the exchange of information.

126. There are also initiatives within the areas of information management, legal and mangerial issues.

127. The limitations of such an approach should also be noted, however. Though it can be credited with a number of successes, Swedish officials have also acknowledged constraints on the capacities of such a group to achieve change, due in part to traditions of independence of Swedish agencies, and the lack of legal authority to enforce action.

For additional information:
Magnus Brattgard, Statskontoret, Box 2280, S-103 17 Stockholm
(magnus.brattgard@statskontoret.se)

UNITED KINGDOM

The Government Information Service

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

129. The Government Information Service (CGIS) on the World Wide Web provides access to information about more than 600 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 selected as among 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.

For additional information:
Ms. Barbara McCallum, Central Computer and Telecommunications Agency
(bmccallum@ccta.gov.uk)
http://www.ccta.gov.uk

The Government Secure Intranet

130. The Government Secure Intranet (GSI) provides a secure internal network for government. It links departments and will provide Intranet facilities and Internet access within a controlled environment. It is sponsored by the Central IT Unit (CITU) and managed by the Central Computer and Telecommunications Agency (CCTA). The first departments have been connected as part of the pilot phase, and a full service was, at the time of writing, close to launch.

131. During the initial pilot phase, GSI services included inter-departmental e-mail for material up to and including Restricted, without the need for encryption; Internet e-mail with organisations and individuals not on the GSI; and opportunities for information sharing and collaboration. A wide range of value-added services will be included in later stages.

For additional information:
Mr. Matthew Bishop, Central IT Unit, Cabinet Office
(mbishop@citu.gov.uk)
http://www.open.gov.uk/citu/cituhome.htm

Intelligent form

132. This pilot project is about transforming a paper government form into an electronic "intelligent" form. The forms that have been converted are those used to notify self employment, which are sent to three different departments. These are the Inland Revenue, HM Customs and Excise, and the Department of Social Security's Contributions Agency. Currently the public submits 7 000 applications each week the information is then transmitted to the three departments.

133. The project is the responsibility of the three departments, who work together in the Joint Working Programme, and is supported by three private sector organisations. Microsoft is responsible for

providing the interface to the user, EDS are responsible for the operation of the web site and departmental interfaces, and National Westminster Bank is providing electronic signature capability.

134. The project was launched as an operational pilot on 8 December 1997 and has established a number of important points. For the first time the UK Government has accepted a digital signature, allowed people to submit an interactive form and recognised the legal standing of a digital signature for this information.

135. The electronic form simplifies the registration process by combining the information from four paper forms. It presents only that information which is relevant to the user and has extensive user-friendly help. Once completed the form is signed electronically and submitted. For this document there is no need to send a manually signed copy to Government.

136. The form is initially being tested in six branches of the National Westminster Bank but is capable of wider implementation once this initial work has been completed. It is expected that other commercial systems for issuing and managing electronic signature smart cards will become available in the next twelve months. This would support a wider rollout of electronic forms.

137. All the information submitted on the form is protected during completion, during transmission and against alteration using a combination of security measures. The features provided to ensure sensitive data is protected have been agreed with the Data Protection Registrar.

138. This pilot addresses a number of key business and technical difficulties and when successful will open the way for many more electronic forms to be introduced across Government.

For additional information:
Mr. Matthew Bishop, Central IT Unit, Cabinet Office
(mbishop@citu.gov.uk)
http://www.open.gov.uk/citu/cituhome.htm

Self-assessment income tax form

139. The Inland Revenue's electronic lodgement (filing) 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 through the Web or perhaps from a public access terminal.

For additional information:
Mr. Mark Rickard, Inland Revenue
(mrickard.ir.mh@gtnet.gov.uk)
http://www.open.gov.uk/inrev/irhome.htm

Other Electronic Service Delivery

140. 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.

- Following a successful pilot in Bristol, motor dealers can register new cars through the Driver and Vehicle Licensing Agency'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.

- 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.

- 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 National Insurance Contributions, VAT and other taxes.

- HM C&E has developed CHIEF, an automated system for handling trade declarations for non-European Community 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 per cent to 3 per cent, and has enabled Customs to discharge its responsibilities more effectively, efficiently and economically.

- Farmers can access Ministry of Agriculture, Fisheries and Food computer systems to obtain their own unique batches of Ear Tag numbers for identifying their cattle.

- 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, trademarks and designs. A full service will be available shortly.

- Legal and financial institutions in London and elsewhere in the UK enjoy instant access to the Land Registry's database via its Direct Access Service network.

- 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 headquarters in Southampton. Information on customised plots can be obtained in almost any combination of plot area, size, scale and map specification. An Area Measurement Service is also available.

For additional information:
Mr. Matthew Bishop, Central IT Unit, Cabinet Office
(mbishop@citu.gov.uk)
http://www.open.gov.uk/citu/cituhome.htm