New Public Management and Enabling Technologies

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Abstract

New Public Management redefines the role of information systems in public administration that up to now have been treated as an undervalued resource. Key technological developments are discussed (Electronic Document Management, Electronic Document Interchange, Computer Supported Cooperative Work) and the role of National Information Infrastructures is addressed. Eventually, these technological developments will lead to innovative administrative information systems whose enabling potential corresponds to strong demands from public management. The achievements will be far reaching: enhancement of policy formulation, promotion of participation, effectiveness of planning and interventions, means of empowering citizens, improvements of service quality, more efficient use of resources.

Keywords

Public Administration; Information Systems; EDI; EDM; CSCW; NIL.

1. INTRODUCTION

IT as an enabling technology is often identified as the key to the reinvention of government which the New Public Management (NPM) movement intends to promote. NPM is an elusive concept which covers a blend of theoretical imports mainly from economics, as well as

heterogeneous managerial prescriptions derived from business management (Hood, 1991). Seen through its main recommendations, it combines devolution of accountability and of budgets with a concern for results and with improved service and quality.

The crucial question, however, is seldom asked by public managers and reform proponents: "How do we do our business now that information technology exists?" (Muid, 1994). The relationship of NPM to information systems in the public sector remains curiously underinvestigated, and the decisive enabling role of information systems is often not acknowledged. In many instances, administrative reform proposals continue to be put forward as if the potential of information systems and the new global information infrastructure simply did not exist.

Information is the lifeblood of public administration, its chief raw material and also its main product. The public sector has much to gain from increased use of information systems and from a thorough and bold re-engineering of its information-handling processes. Fearing that opportunities will be lost because of insufficient recognition of IT's enabling potential, we will briefly address this situation. We will then open up some perspectives on innovative types of public information systems. They hold the promise of new ways for producing the results which the public sector, and more specifically public administration, are expected to deliver.

2. INFORMATION SYSTEMS IN THE PUBLIC SECTOR: AN UNDERVALUED RESOURCE

Past and present use of information systems quite faithfully mirrors the dominant concerns on the agenda of the public sector. The principal applications of IT in the public sector first concerned large scale clerical tasks like routine decisions, financial transfers and the registering of persons and objects in large data banks. Such tasks are mainly informational in nature. They are related to the core functions of public administration, i.e.:

- making decisions which allocate positions or resources to members of a society,
- gathering information about society in order to monitor it and intervene when necessary.

The welfare state added a wide range of public services to these core functions. The provision of these various services has also many informational aspects, e.g. deciding about the eligibility of a client. Moreover, the output of some services is purely informational, as in the case of giving an advice.

Among the first things which received computer support, some 40 years ago, were tax and old age pension calculations, as well as other routine decision-making tasks in the process of financial redistribution within the nation-state (Lenk, 1994). Next, around 1970, came computer support for the various monitoring tasks. Large registers were computerised, e.g. land registers, population registers, car registers. Other registers like police databases, environmental information systems, or databases to support routine decision-making were newly created. In many cases, creation of registers involved some degree of centralisation and of standardisation. It was felt that data from these registers could be shared by many agencies and improve statistics as well as town and regional planning. Consequently, fears about an omnipotent state encroaching upon personal privacy had to be dealt with.

Both types of information systems: routine operation support and large registers, are typical of the public sector where they often reached a degree of sophistication much higher

than that exhibited by the business-directed mainstream of information systems development (Traunmüller, 1992). Their role should neither be overlooked nor downplayed. Especially in their boundary-crossing aspects with regard to single agencies, they testify to the particular shape of public agendas and to the special concerns of public management.

We are now approaching a situation where public information systems have come of age. Innovative types of information systems will reap substantial benefits (Lenk and Traunmüller, 1996):

- better information for citizens and referral services;
- new forms of delivery of public and commercial services through one-stop shops serving as network ramps;
- citizen feedback as part of quality-oriented policies;
- tailor-made delivery of services for citizens or companies with special needs;
- overcoming organisational boundaries of public agencies;
- compensating for the lack of incentives for public personnel to provide not only fair and equal treatment but a better service;
- stakeholder participation in zoning and planning processes, using e.g. GIS, virtual reality representations, and issue-based argumentation systems;
- measuring effectiveness and quality of public interventions, especially in cases where money cannot or must not serve as the only metric.

3. ELECTRONIC DOCUMENT MANAGEMENT

Our first basic concept, or paradigm, is EDM. We deliberately start from the document as a basic object of informational work in the public sector. Documents provide a common workspace for human and machine cooperation. The electronic document is not only a major step towards the "paperless office". It also constitutes the platform for informational cooperation, regardless of whether this cooperation is sequenced or flexible or completely at the discretion of human role incumbents.

Documents are the centre of many business processes in the public sector, and in many cases they also constitute the product of administrative action which is communicated or published. Whatever the degree of structuration of the work processes, documents are their main medium for storage, for both internal and external communication, for channelling information input and for conducting information search processes.

For the special case of highly coordinated activities and highly formalised communication, a broad fan of methods has been developed under the label of Workflow Management Systems (WFM). Their mental model is derived from well structured office procedures, resembling the conventional information systems for ordering, invoicing, registering, etc. Many commercial products are available, and they have been successful in providing computer support for work settings which are most amenable to a closely-defined, procedural approach. This approach is characteristic of the wide range of applications constrained - for administrative, legal and organisational reasons - by highly formal, bureaucratic procedures and predisposed for "programmed" solutions for strictly structured tasks. There is no doubt that Workflow Management Systems will gain widespread usage, but discomfort about these systems and their intrinsic limitations will keep growing. For this reason, we feel that better mental models of office work support will be predicated on the central role of EDM.

WFM have achieved a big leap forward when compared with the earlier Office Automation Systems, because they focus on the whole business process and not on the individual task. Yet putting WFM central incurs the danger of strictly sequencing many work processes which exhibit some degree of informality, of unacknowledged discretion. Some of the more common mistakes in introducing information systems precisely have to do with driving out such discretion in order to define strict workflows. Moreover often workflows are not allowed to develop "from within" the organisation, but are imposed "from without" or from above, with a clear commitment to ordering work in function of accountability and managerial supervision (Bowers et al., 1995). Many research efforts are now devoted to changing the situation. Differences between types of processes are increasingly acknowledged. They require different degrees of structuring, especially sequencing.

4. COLLABORATIVE WORK PROCESSES

EDM and WFM may be seen as instances of CSCW. The term "Computer Supported Cooperative Work" was coined in 1984 by Greif and Cashman in preparing the first conference about this topic. It was realised that CSCW arises from a particular kind of problems namely from the needs that some task can only be achieved by some people cooperating as a group. Cooperation means working together as a group, understanding the subtasks of other members, and sharing the data. So the first systems were conceived directly for the use of interaction between users and called groupware. The basic paradigm here is not coordination in the sense of sequencing, but communication (Ellis and Wainer, 1994). The challenge is to move towards the effective integration of separate systems, and into the support of "higher-level" organisational processes involving decision-making, negotiation and collaboration - areas characterised by flexibility and rapid change rather than constancy. A closer inspection of cooperative work situations reveals that tight coordination is not "the only game in office". Especially in those parts of public administration which are concerned with policymaking or which by their mandate have to exercise some amount of discretion, it is not even the dominant mode of action (Shapiro and Traunmüller, 1993).

Tightly coordinated work represents only one kind of the three major forms of cooperative work:

- coordination unifying different activities for the accomplishment of a common goal with each activity in an intrinsic relation to preceding and succeeding ones;
- collaboration with persons working together without external coordination;
- group decisions needing cooperation for the accomplishment of a collective decision.

One way of building a CSCW system is to provide an infrastructure of communication services.

As infrastructure a lot of services are suggested. Basics are open communication and shared information spaces. This means mailing services for storing and forwarding messages and shared workspaces for providing common views on a particular subject. On top of such a platform particular systems may operate: group authoring systems enabling cooperative writing; meeting rooms supporting group decisions; or conferencing systems aiding bulletin board, desktop or video conferences. The development is marked by a variety of commercial software (Special Issue, 1994), pilot applications (Glasson et al, 1996), and design options (Shapiro et al, 1996).

5. ELECTRONIC DOCUMENT INTERCHANGE

Electronic Document Interchange (EDI) involves the computer-to-computer exchange of standardised information items and of transactions. In many respects, it can be seen as a mere extension of EDM to span organisational boundaries. In a cosmos of increasingly fragmented public organisations, electronic cooperation and exchange between administrative agencies and in public-private partnerships will become the rule, with interorganisational linkage becoming a dominant concern of Information Management.

Originally, EDI was targeted towards exchange partners which were characterised as well by a substantial amount of data exchange as well as by a connection on a more or less regular basis. One further step would be considering EDI also in transactions with citizens using e.g. their home PC. It may soon become available for occasional data exchange on an irregular basis, over public networks (Roche, 1995). In this case, the institution of a clearing house becomes important. As an example in Austria, Radio Austria is acting as a clearing house for all clients exchanging data with public agencies.

6. HIGHER LEVEL DECISION SUPPORT: NEGOTIATION, MEDIATION, AND POLICY FORMULATION

Higher level decision support aims at negotiation, mediation and policy formulation as a whole thus surpassing the rather narrow focus of conventional decision support systems. The processes of negotiation, mediation and policy formulation are marked by high complexity of issues, sophisticated procedural rules, conflicting interests of stakeholders and the involvement of several persons. Thus adequate support environments have to blend conventional data and decision support with collaborative functions to a assemblage of highly-modular components as will be discussed in the following (Lenk and Traunmüller, 1996).

The amount of negotiations, their length, as well as the amount of parties they involve seem to be constantly increasing. Particularly policymaking is normally taking place through multiple processes of negotiation. Many negotiations in public policy will span organisational boundaries. This is underlined by the theory of "policy networks" which takes into account a variety of structures of policy networks, instead of the classical "policy triangles" involving parliamentarians, administrators and field representatives. The negotiated character of policymaking permeates all phases of the policy process. It is perhaps not so visible in early phases of policymaking like information collection and analysis. During these phases, divergence of interests and positions do not yet reveal themselves very clearly. On the other hand, agreeing on some kind of information and demarcating the search space for further information may pre-empt substantial decisionmaking which characterises the following phases of agreeing on some policy and of implementing it.

All these types of decision making are characterised by a mix of commonality in interest and struggle:

- One type may resemble a *litigation process* with clear-cut roles of opponents acting in a quasi zero sum game. Labour relations and international conflict are often of this type, as are many judicial processes.
- In other cases, positions may seem contradicting at first glance, but a skilful *mediation* process might lead to an acceptable compromise. Town and regional planning provides

ample evidence for conflicts which may be resolved in that way. Related to this is enhancing democratic participation in planning processes and other decision making which can be achieved in reasonable time frames through better support. Parliamentary commissions are another case in point.

- Other types of negotiations have the goal of *achieving a common strategy* such as it may be the case in a board meeting.
- At the implementation level, policy negotiation may also occur, although strategies are given. *Discretionary behaviour* at street level is normally accompanied by negotiation with clients. Other cases include boards in charge of case-bound decision-making. The older type of *Kollegialverwaltung* (as opposed to a monocratic system of administration) might well be reactivated through appropriate decision support systems.

A convenient strategy for constructing support environments is building them up from modules facilitating various activities such as:

- scheduling of the overall negotiation procedure;
- clarifying procedural questions;
- scheduling of meetings and implied subactivities;
- supporting the agenda setting for all these activities and pre-discussing agendas;
- supporting meetings in various ways: communication among participants (same place or different place), drawing on supplementary information, commenting on that information, spotting experts, structuring issues, summing up results;
- documenting of processes and results;
- involving bystanders, distilling and aggregating their opinions

7. NATIONAL INFORMATION INFRASTRUCTURES FOR ADMINISTRATIVE EXCELLENCE

In the age of Internet and commercial on-line providers, new opportunities exist for bringing the point of contact between citizens and public services closer to the citizen. Also, transparency of the public sector, as well as political participation may increase.

A new wave of experiments is already gathering momentum. It is prompted by the Internet and by National Information Infrastructure (NII) plans, on one side, and by multimedia systems, on the other. The national (and global) information infrastructure has the potential of becoming a major resource in communication between government agencies and citizens (EU/DGXIII: Framework 4, 1994). Three ways of using a NII can be sketched (cf. Lenk and Traunmüller, 1996):

- Already now many information on public services and Government activities are distributed via World Wide Web.
- In addition, some agencies may allow citizens to apply for different services via Internet or from kiosks. The rapid development of such usage may lead to a wide range of "home administration" applications, provide that a.o. questions of information and transaction security, of equal access, of intelligibility are seriously addressed.
- E-mail is a means of choice for communications within participative planning groups consisting of officials and citizens taking part.

Judicious choices will have to be made concerning the *point of contact*, as well as the *interface*. The point of contact may be varied (Klee-Kruse and Lenk, 1995) :

- tele-administration from at home or a public (unstaffed) "kiosk",
- one-stop shops, e.g. in the form of neighbourhood agencies providing access to a wide range of administrative services,
- the "virtual office" (any office provides access to all others).

Competitive arrangements concerning points of contact could be of high value in enhancing service and accessibility. An example from Germany is a proposal to provide car registration at offices of different authorities or at gas stations. The citizen interface can be human-mediated or provided by intelligent machine agents; it may be multilingual and multimedial. One should not underestimate the importance of human interlocutors for people who have to find their way through the maze of public bodies and who want to learn about their entitlements and duties.

A caveat has to be added. Some recent "kiosk" systems appear to commit the same errors which were encountered in early European videotex experiments, fifteen years ago. For many World Wide Web sites offering civic information are technology-driven and do not devote enough attention to information contents and user needs. Users not familiar with the logic of administrative thinking still have problems in finding the information items they really need. All too often, however, some piece of administrative information is simply posted at some web site. This leads to the (may be false) impression that all that is wanted is the accomplishment of an otherwise annoying duty. Instead of such an attitude, high priority should be given to the task of information presentation so making information really accessible and intelligible for ordinary citizens.

8. REDESIGNING THE PUBLIC BUSINESS

Enabling technologies are no end in itself. Making good use of them requires hard thinking about the ways in which the business of public administration is carried out. Their full benefits will only be reaped if organisations will be reshaped so as to fully profit from the potential of IT.

Shifting the interest from technical means to their adequate usage is a demanding task, since it conflicts with entrenched features of administrative culture. Public administrations are not used to shed light on minor details of their own organisation and work processes; not going into these details precludes awareness of redesign opportunities opened up by technology. This cultural disposition is aggravated by a general lack of incentives to innovate in the public sector. Successful innovations are not rewarded by marketing success, and punishment for failures is comparatively severe.

Redesigning the public sector will come high on the agenda for the next decades as anticipated by various authors (e.g. contributions in Reinermann, 1995) Then it will be realised to which extent traditional tenets of organising administrative work can be questioned. The direct impact of information systems on administrative organisation is low. But they provide opportunities to transform the processes through which public administration fulfils its tasks. In doing so, they help to bring about the requisite structures of the public sector of tomorrow.

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