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# Nine Challenges for e-Government Action Researchers

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## ABSTRACT

*Action research is widespread in many of the background disciplines that underpin the e-Government field and is beginning to take root as a legitimate e-Government research method. Canonical Action Research (CAR) is the most widely used form of action research; however it relies on premises that can be problematic in the e-Government context. This article details some of those underlying assumptions, and shows the difficulties that result when applied to a relatively typical e-Government case study: the implementation of an advanced email system in Danish public administration. The empirical experience calls many of the standard premises into question, and these are categorised. The authors summarize the resulting experience as nine challenges for action researchers working in the e-Government field, and investigate some possible responses.*

*Keywords: Action Research, Canonical Action Research, Digital Post Project, E-Communication, E-Government, Public Sector*

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## INTRODUCTION

E-Government is an applied field, covering many areas with immediate practical implications. Examples are information technology (IT) system implementations, benefits realisation, information security, the digital divide, accountability, interoperability (Ottjacques, Hitzelberger, & Feltz, 2007), architecture development, infrastructure and governance (Meso, Musa, Straub, & Mbarika, 2009), project management (Pan, Pan, Newman, & Flynn, 2006), utilization and take-up of services (Carter & Belanger, 2005), citizen participation (Olphert & Damodaran, 2007), citizen trust (Teo, Srivastava, & Jiang, 2008), and democracy (Mahrer & Krimmer, 2005). Early automation logics (IT should automate the work process) were replaced by the logic of transformation (Irani, Elliman, & Jackson, 2007; Tan & Pan, 2003): government organisations

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should change in response to the information technologies implemented. The research area is closely related to information systems (IS) since it primarily concerns the applied study of computerised information systems in organisational settings. Action research is an acknowledged method for generating knowledge in applied settings, particularly where organisational development is an issue, and has a strong tradition amongst IS researchers. It's therefore natural to use action research as a research approach in the e-Government area, to use earlier experiences in IS research as models, and to look for methodological guidance in the IS literature. Though a variety of action research forms have been used in IS, the most widespread is canonical action research (Davison et al 2004).

Action research is beginning to take root in e-Government, and recent studies cover a wide variety of themes including: design and development of information systems (Pardo & Scholl, 2002; Wastell, Kawalek, Langmead-Jones, & Ormerod, 2004), focus groups in service development (Axelsson & Melin, 2007), citizen participation (Axelsson & Melin, 2008), security (Smith, Jamieson, & Winchester, 2007) and how an organization moves from one e-Government stage to the next (Lee, 2010). The choice of theme seems to have little influence on the decision to use action research. However they show some convergence in methodological approach, tending either to use canonical action research (Scholl, 2004; Smith et al., 2007; Wastell et al., 2004), or to avoid specifying much methodological detail.

It is therefore a useful point in time to reflect upon the use of action research in e-Government. The embedding of IT systems in public administration presents a particular context for action research that demonstrates characteristics (administration traditions, large projects, responsibility to citizens, involvement of elected representatives) not shared by private sector organisations. Action researchers may therefore face unfamiliar problems not accounted for in current methodological prescriptions. Our research objective is therefore to categorise some major challenges, based on a recent experience working with the introduction of digital post in Copenhagen. The initiative was part of a wider programme to replace physical mail between the public sector and its various respondents (citizens, businesses, voluntary organizations) with a secure email system. The email system was designed to respect the respondents' privacy and security, whilst enabling significant cost savings. However its implementation encountered many problems, including changing administrative practice, technical implementation difficulties and concerns for citizens' rights.

Since there is no way to experimentally test the effectiveness of an action research method using the principles of natural science, the reflection takes the form of a retrospective evaluation of the action research case informed both by method theory and the empirical experience, in the manner of Checkland (1998, 1990). The article first delineates a set of premises (or assumptions) derived retroductively through identifying methodological issues of importance in the case and tracing their origins in the AR literature. We show how these premises are partially undermined by typical conditions in e-Government projects, demonstrated through our experiences with digital post, and supported by prior research. We formulate the resulting difficulties as challenges for AR researchers in e-Government to help better prepare them for this style of research and discuss some possible responses to them.

## **Canonical Action Research in the IS Field**

Action research evolved in organizational studies as a reaction to the inability of positivist research methods to generate knowledge about organizational development and organizational problem solving (Susman & Evered, 1978). It 'aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint col-

laboration within a mutually acceptable ethical framework' (Rapoport, 1970). Its nature involves 'simultaneously bringing about change in the project situation (the action) while learning from the process of deriving the change (the research)' (Wilson, 1984). Hult and Lenning (1980) define AR thus: "action research simultaneously assists in practical problem solving and expands scientific knowledge, as well as enhances the competencies of the respective actors, being performed collaboratively in an immediate situation using data feedback in a cyclical process aiming at an increased understanding of a given social situation, primarily applicable for the understanding of change processes in social systems and undertaken within a mutually acceptable ethical framework' (Hult & Lenning, 1980).

The underlying philosophy is that organizations do not exist independently of human beings and that human actions are guided by values and conceptions of the future. The underlying philosophical stance of action research is therefore normally interpretive or social constructionist. Epistemological principles for learning are derived from pragmatism rather than positivism (Baskerville & Myers, 2004). Susman and Evered (1978) offered an operational description of Action Research as a cyclical process with five phases, namely (1) diagnosing, (2) action planning, (3) action taking, (4) evaluating and (5) specifying learning which is regulated by a client-system infrastructure. The client-system infrastructure defines the collaborative environment, i.e. how to collaboratively decide which actions to take, the entry and the exit of the researcher and the responsibilities of the involved researcher(s) and practitioner(s). Acknowledged problems with action research include:

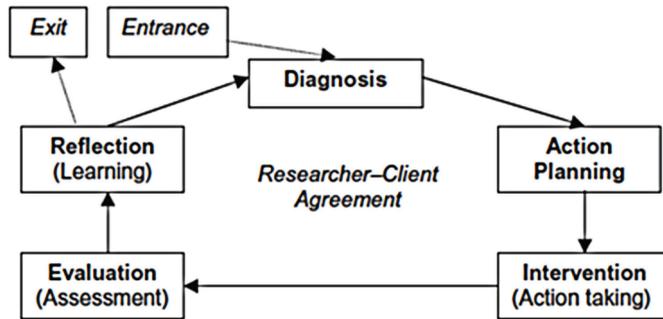
- Goal dilemmas between the practical problems and the research endeavour (Rapoport, 1970);
- Value dilemmas between roles as consultant and researcher, such as clients' belief in quick actions (quick wins) versus researchers' belief in careful abstract reflection before action (Rapoport, 1970);
- Difficulties establishing rigour and objectivity according to conventional positivist natural science traditions (Susman & Evered, 1978);
- Preoccupation with organizational problem solving at the expense of transferable theoretical understandings (Susman & Evered, 1978);
- Lack of epistemological clarity in theory testing and development (Rose, 1997).

When taken into the information systems field, Baskerville and Wood-Harper (1998) agree that AR is characterized by multivariate social settings, interpretive assumptions about observations, intervention by the researcher, participatory observation, and the study of change in the social setting. The research is almost invariably associated with some aspect of the design, implementation or use of (computerised) information systems in an organisational setting. Thus valid forms of action research in IS, according to Baskerville and Wood-Harper (1998) include canonical action research, prototyping, soft systems, action science, participant observation, action learning, multiview, ETHICS, clinical field work and process consultation. More recently new forms of IS action research have complemented these: reflective systems development (Mathiassen, 1998) and collaborative practice research (Mathiassen, 2002).

The predominant form of IS action research remains, however, the Susman and Evered model described above, which has become known for this reason as canonical action research (CAR). Figure 1 shows the Davison, Martinsons, and Kock (2004) account.

Davison et al. (2004) also offer five principles for canonical action research:

Figure 1. Canonical action research (Davison et al. 2004)



1. There should be an agreement between researcher and client;
2. The cyclical process model should operate;
3. Theory should be used to guide the project;
4. Change should be effected through action;
5. Learning through reflection should be documented.

In practice, AR in IS relies on a series of assumptions, and in the next section we identify nine premises common to this literature.

**Premise 1:** Expertise in Separate Domains: The Practitioners are Expert in the Relevant Practice Areas, Researchers Understand Relevant Theory and Research Method

Both researcher and practitioner are perceived as experts: the researcher brings theoretical knowledge to the co-operation (such as IS development method, implementation theory, project management theory), whereas the practitioner understands the organisation, its practice, and how to change them. McKay and Marshall (2001) conceptualise AR as a separate research cycle and problem solving cycle, both furnished with appropriate methods, which happen simultaneously and are closely coupled. The outcome is determined by the quality of the co-operation; however the two types of expertise are sufficiently different to cause goal and value dilemmas that can be alleviated by the negotiation of a researcher-client agreement. This establishes the necessary client-system infrastructure or collaborative environment: how to collaboratively decide which actions to take, the entry and the exit of the researcher and the responsibilities of the involved researcher(s) and practitioner(s). With these agreements in place, cooperation and knowledge transfer is assumed to be unproblematic. Without mutual learning the project may end prematurely (Baskerville & Wood-Harper, 1996), and the researcher is expected to generate new perceptions of problems and solutions unavailable to practitioners because of the different nature of their expertise (Susman and Evered, 1978).

**Premise 2:** The Practitioner Organisation Owns the Problem

Canonical AR ‘aims to address organizational problems’ (Davison et al., 2004). The researchers should seek ‘to build a relationship with the client and then to plan, execute, observe and

reflect upon the actions' (Davison et al., 2004), since 'subjects may well have key knowledge that is critical' (Baskerville & Wood-Harper, 1996). Canonical action research often makes the assumption that the problem is bounded by the practitioner organisation, which also implies that the practitioners involved are (at least in respect to the problem) collaborative, representative, authorized, committed and knowledgeable – the client. Collaboration between the researcher and the problem owner is essential to the success of the AR process (McKay & Marshall, 2001). Checkland (1981) takes a more reflective approach by expecting researchers to analyse the problem situation and problem owner.

**Premise 3: The Action Research Intervention is Integral to, and Congruent with the IS Initiative It Addresses**

Canonical AR is a suitable approach for investigating IS implementation or development frameworks in a real world setup (Baskerville & Myers, 2004). The action research is usually assumed to be part of the IS initiative it is designed to improve, with synergistic goals and complementary resources. If the goals of the researcher and the client differ significantly there is tension; therefore the parties must negotiate their goals (Baskerville & Wood-Harper, 1996). Thus the researcher should remain loyal to researcher rigour whilst recognising 'the need to be of value to those whom he researches' (Baskerville & Wood-Harper, 1996).

**Premise 4: The AR Group are Competent and Authorised to Take Decisions on the Organisation's Behalf**

Diagnosis and action planning require complex decision-making skills, made more complex by the assumption that theory will be implicitly or explicitly incorporated, and that researchers and practitioners have different needs for analysis and documentation, and timescales for decision making (Rapoport, 1970). Decisions are invalidated if other actors do not respect them. Thus the determination of authority is a key aspect of developing control structures necessary for advancing an action research project (Avison et al., 2001). Client dominated authority inside the project group may be quite common.

**Premise 5: Practitioners Represent the Whole Organisation and are Competent and Authorised to Effect Change**

The necessarily small group of practitioners participating in the action research group represent the client organisation. This is normally beyond the scope of the researchers, even if they are accredited with specialist expertise or knowledge. Practitioners are assumed to represent all affected stakeholders in the organization (who may possess different goals, capabilities and powers), and simultaneously to wield the authority to enact change (or to speak and decide on behalf of those who do). An intervention should 'transform the structure and systems of the organization rather than merely performing a few half-hearted actions or 'tinkering' with the environment' (Davison et al., 2004). The action research group should drive organisational interventions; however researchers (transient interlopers) can hardly be expected to possess the relevant networks, local practice knowledge or relevant internal funding.

**Premise 6: Change is Plan-Driven and the AR Group Has the Skills Required to Formulate Plans and Implement Them**

One principle of CAR determines that there must be action that leads to change (Davison et al., 2004). ‘Diagnosing corresponds to the identification of the organization’s desire for change. This involves self-interpretation of the complex organizational problem (...)’ (Baskerville & Wood-Harper, 1996). However, CAR separates planning actions from implementing them, and implementation from evaluation, and stresses the timing, measurement and documentation of actions (Davison et al., 2004). In this respect it follows conventional, but simplistic, wisdoms of project management. Baskerville and Wood-Harper (1996) indicate that ‘several forms of intervention strategy can be adopted’ without being much more specific. More complex aspects of change management are not addressed. The CAR assumption is that change is plan-driven and requires only basic skills that do not need further explanation. Experienced action researchers understand that effecting change in organisations is difficult, time-consuming (Borjesson & Mathiassen, 2003), context-dependent, dependent on organisational learning, and not necessarily plan-driven.

**Premise 7: Learning from the Intervention Can Be Formulated and Transferred**

Specification of learning is a critical activity in CAR. Though researchers are preoccupied with deriving transferrable knowledge for research publication, learning is also important for the host organisation. Without organisational learning there is no real change, so issues of internal knowledge management, knowledge transfer and tacit knowledge transferral become important. According to Davison et al (2004), ‘learning enables the restructuring of organizational norms.’ Assumptions about knowledge acquisition and transferral in IS AR literature tend to be limited to the writing of practitioner-focused reports (Davison et al., 2004): ‘the client (...) will need to write up an organizationally focused report that provides both an executive summary and a more detailed set of practical implications and suggestions for change in the organization’.

**Premise 8: The Actors whose Behaviour Needs to Change are Within the Organisation**

Canonical action research often makes the assumption that the people affected by interventions are part of the organisation, and therefore within the sphere of knowledge and influence of the action research team: ‘changes may operate at both personal and organizational levels..... individuals in the organization may experience changes in roles and responsibilities...an intervention will also commonly transform the structure and systems of the organization’ (Davison et al., 2004).

**Premise 9: The Organisation is Independent and Autonomous, and in Control of Its Own Resources and Strategy**

Premise 6 suggested that CAR assumes that the AR practitioners represent the target organisation. The client is either an organization or a subset of one (Davison et al., 2004). However, a wider assumption is that the organisation is in control of its own destiny, can decide its own future and dispose its own resources when enacting change.

## **THE DIGITAL POST PROJECT**

### **Digital Post**

One of the cornerstones of the Danish e-Government strategy is digitization of communication with public institutions (The Danish Government, Danish Regions, & Local Government Denmark, 2011). The Danish Ministry of Finance estimates potential savings from reduced postal costs at DKK 600 million annually. The Danish Government launched the digital post system in 2010 - at the same time reducing the budgets of public institutions in line with expected savings. Digital post is an encrypted e-mail system, where identified actors can communicate securely. Companies and citizens access digital post through a national portal using the national eID solution with their registration number. The national registration number serves as the e-mail address. Public institutions use an output manager application to connect to digital post, and communicate digitally with those external parties who have signed up.

### **The Theoretical Framework**

Realizing benefits from e-Government is a major challenge (Norris & Reddick, 2012) (Goldfinch, 2007). Markus (2004) argues that realizing IS benefits demands that technological change is accompanied by organizational change, and that users are involved in the process. The project employed the effects-driven IT development (EDICT) approach of Hertzum and Simonsen (2011). EDICT builds on the benefits management framework of Ward and Daniel (2006) but uses incremental change, on-going specification, and the measurement and realization of effects to inform the IT implementation process.

### **The Project Setting**

The municipality of Copenhagen implemented digital post in 2010. However, the anticipated postal cost reduction did not materialize, despite the strong budgetary incentive. In late 2011, one of the authors and the municipality agreed to collaborate in an AR study with the aim of reducing postal costs and gaining knowledge about how to ensure benefits from e-Government initiatives. The project period was January to December 2012. A generic template for ensuring benefits from digital post should be derived from empirical work with two pilot departments of the Copenhagen Citizen Service division (CCS). The project would also introduce an updated version of the output manager with more advanced features.

The two pilot departments constituted four teams with 80+ employees working with health cards, passports, registration of addresses, citizen's debt, housing tax, funeral cost aid and welfare payments fraud. Together they were responsible for an estimated 2-3000 letters a month. The CEO of CCS was the sponsor for the project. The AR group constituted of the CIO, an IT project manager and the researcher. A consultant from the output manager application vendor (KMD) and a project manager from another municipal division were involved in the steering committee to ensure knowledge transfer.

### **The AR Method**

Table 1 describes the stages of the AR project.

Table 1. Stages of the digital post project

AR Phase	Major Activities
Initiation, client-researcher agreement	The researcher was embedded in the organization: access to locations, data, systems, a desk two days a week. The team agreed project goals: implement new functionality while ensuring benefits by assessing effects in an on-going alteration of system, work practices, and organization. Project organization, resource allocation, teams involved, project management framework and methodology were agreed.
Diagnosis	Interviews with CEO and managers, data analysis, analysis of formal strategies and policies. Four Delphi workshops were held with 40+ employees to specify barriers to e-communication.
Action planning	Three overall implementation measure (productivity, employee omission and service quality) were agreed from the diagnosis for iterative assessment. The team planned the engagement of employees (counting and categorizing physical mail, barrier awareness development). The software was installed and employees were trained. A particularly resistant team was offered a group interview.
Intervention	Reply functionality was implemented as the intervention. Benefits were assessed monthly. Only 7% response rate from citizens regarding service quality. Assessments of the four teams were communicated to employees and managers. The employees counted and categorized physical mail for five weeks. The group interview was conducted.
Evaluation	Digital post use increased, but adoption was only partial, and some employees avoided using it, often with doubtful reasons. Citizens' responsiveness was too limited to guide corrective activities to the system, work processes or organization. Barriers were both internal (IT project management and lack of managerial decision power) and external (legal issues, intergovernmental collaboration, legacy systems). A final evaluation workshop with employees and managers was held and the project manager wrote a written project report. One recommendation was to develop a business intelligence (BI) system that would allow managers current access to productivity and employee avoidance.
Specifying learning	An externally facilitated workshop with employees, managers, IT department and the researcher revealed the following: <ul style="list-style-type: none"> <li>• Too little support from business departments. The project should have been driven by business managers rather than the IT department;</li> <li>• The benefits realization focus and the disclosure of on-going assessments had a positive impact on the realized benefits;</li> <li>• Managers' access to BI was recognized as key to the benefits realization process;</li> <li>• AR proved a convenient methodology to achieve enhanced understanding about realizing benefits;</li> <li>• Awareness towards internal and external barriers was generated.</li> </ul>

## Project Outcomes

Though some progress was made with focusing on effects and benefits, understanding barriers, and measuring progress, the accompanying system improvements became very delayed and some were eventually abandoned. The value of the intervention for the organisation was therefore limited.

## THE AR PREMISES RE-EXAMINED

In this section we examine the nine premises of section 2 in the light of the empirical experience.

**Premise 1:** Expertise in Separate Domains: the Practitioners are Expert in the Relevant Practice Areas, Researchers Understand Relevant Theory and Research Method

In the digital post project, the action researcher's background included both a theoretical expertise (primarily in EDICT and action research) and experiences from past projects in the public sector. The practitioners were experienced in various aspects of public administration and IT project management, with a strong predisposition to follow their training and culture influences. This made it difficult to transfer the theoretical precepts of EDICT into practitioner action. Thus the researcher argued for incremental system changes carried out early, pilot use studies, engagement of users and iterative alignment with work practices. The effects of IT changes on postal costs should be documented from office records and fed back into the project - a strategy which should minimize project risks. The practitioners' inherited cultural understanding of an IT project (which inevitably predominated) focused on an ambitious technical implementation and the minimizing of cost.

It might be expected that it would be difficult to transfer theoretical precepts, but it was equally difficult to transfer experiential learning. The IT project manager invested many implementation resources in trying to automate the transfer of data from case handling systems to the output manager to avoid double entry of data by office workers. The researcher argued (from experience in other municipalities) that this would increase complexity and risk, and reduce the flexibility of digital post as experienced by office workers. The initiative proved neither popular with office workers, nor technically feasible and was abandoned after three months. The delays seriously compromised the action research project. The researcher also knew from experience that office records of postal costs (necessary for monitoring costs and identifying practice problems) would be of low quality - they were. No practitioner was motivated to investigate this, further compromising the AR project.

In these instances, the separation of domain expertise was more fluid than Premise 1 would suggest, and the transfer of knowledge more difficult. Transfer of expertise from one situation to another is an urgent need in the public sector, where many municipalities operate under a standardised umbrella of law, policy and bureaucratic practice, and the delivery of service to the public is expected to be uniform between municipalities.

**Premise 2: The Organisation Represented by the Practitioners Owns the Problem that is Being Tackled**

The problem specified for the AR project was to reduce postal costs through the improvement of digital post. However neither, Copenhagen Citizen Services nor Copenhagen municipality were formally the problem owners. Digital post is a national e-Government initiative; the government decides policy objectives and the Ministry of Finance sets operational goals for the municipality. The CEO expressed ownership of the problem; however senior managers had not even noticed that their budgets had been cut. The team leaders wanted efficient teams without increased workloads (the output manager was not perceived as easy to use), staff wanted to preserve service levels for citizens (a digital letter was widely perceived as a lower quality communication), the CIO and the IT project manager wanted to run the IT projects as smoothly as possible within time, budget and quality constraints. Distributed authority and responsibility, networked governance, and consequent conflicts of priorities and interests are characteristic of public administration in Scandinavia.

**Premise 3: The Action Research Intervention is Integral to, and Congruent with the IS Initiative It Addresses**

Though the IT implementation project and the AR project were organised to exploit natural synergies, they soon began to compete for resources. This may easily occur where an IT project is perceived as a technical implementation, whereas an AR project naturally focuses on organisational development. As the IT project became more and more delayed, the weekly AR group meetings were frequently cancelled. Resources (manager and staff time) were drawn from the AR project to strengthen the implementation project. The AR project lost management commitment and consensus, making it impossible for it to deploy necessary resources, even to implement previously decided plans. The AR project and the implementation project became poorly aligned and key information (changes in system configuration, implementation strategy, inputs from staff) was not exchanged. The delayed implementation project became the primary focus, the AR project an optional add-in.

**Premise 4:** The AR Group is Competent and Authorized to Take Decisions on the Organisation's Behalf

In many cases the AR group decided on interventions that were not carried out or were delayed. This was partly due to lack of authority, for example in enlisting resources (the finance department resisted exporting postal costs from the ERP system, the IT department did not want to extract data about users for transaction analysis, the communications department could not help with the design of citizen surveys). In other cases the AR team was not perceived to be competent to decide. The communications department should approve surveys; the management committee should approve a decision to post postal cost evaluations in the canteen (still undecided on its agenda at the end of the project); the CIO should select which barriers employees could discuss. Decision-making in public administrations is a difficult and risky endeavour, especially for outsiders, because accountability systems are distributed, hierarchical and rule-based.

**Premise 5:** Practitioners Represent the Organisation, are Authorized to Effect Change and Have the Necessary Skills and Authority to Effect Change

The EDICT framework encourages participation, and the AR group employed staff workshops in order to motivate change. They planned workshops with groups of ten staff, but the management watered down the proposals. The engagement of staff was small and the consequent change impact low. Many barriers to digital post were revealed that needed to be addressed by managers: a legacy IT system produced 100+ paper letters weekly; an external public agency 120+; one team misused the output manager, resulting in no digital letters. The AR team's response was that employees should register physical mail to provoke thought and provide a disincentive. The CIO decided instead to calculate postage costs electronically - less work but also less incentive to change. The final workshop was also intended to motivate change and involve many employees, both digital post first movers and laggards. The management again showed little commitment and only seven office staff turned up. Public organisations have many competing initiatives and can be resistant to change; here it appeared that both commitment and the necessary skills to manage change were missing.

**Premise 6:** Change is Plan-Driven and the AR Group has the Skills Required to Formulate Plans and Implement Them

The AR team adopted a scaled down PRINCE2 project management structure, since this is a well-known and recommended standard in Danish public organisations. This also accommodates the phases of canonical action research, though not its iterative character. However meetings were often postponed, key actors were unavailable, the level of preparation and commitment was low and agreed actions were seldom carried out. The researcher moved into the workplace to compensate and the process became less formal and documented, more ad-hoc. A second steering committee meeting took many weeks to arrange and produced few useful results and the plan-driven approach was abandoned in favour of an informal reactive process driven by the researcher and the CIO. It was clear that a formal, plan driven approach did not give the project the necessary momentum. The dilemma of balancing daily operations (serving citizens) and developmental activities is characteristic for public administrations; in a reactive environment facing many challenges the formulation and implementation of plans is often disrupted by the pressure of evolving events.

**Premise 7: Learning from the Intervention Can Be Formulated and Transferred**

Internal expertise transfer inside the AR group has earlier shown to be a problem; however the transferral of learning from the intervention to the wider organisation is more difficult. The AR steering group included a manager from another division and a vendor representative, with the objective of ensuring two-way knowledge transferral, but they could not attend the meetings. An agreed objective that all the internal IT project managers should learn the benefits realization framework from the AR project was never followed up. Several analysis and reflection meetings were organized, but poorly attended. Analysis of mail work practices (utilizing the findings and data that the AR project provided) was farmed out to a consultant and the learning not re-used. A particular problem was transferring understandings of office workers' mail practices and staff perceptions of their communication with citizens to the management group. The combination of resource pressure, competing initiatives, devolved responsibilities, multiple accountabilities and hierarchical management attitudes to staff typical of public administrations seemed almost to prohibit the joint formulation and transferral of learning.

**Premise 8: The Actors whose Behaviour Needs to Change are Within the Organization**

It was not only the administration that needed to change for the digital post system to be a success – citizens must also voluntarily modify their communication behaviour. Surveys of citizens that had received digital post were conducted for five weeks. Predictably, few responses were received (9%) and even fewer provided qualitative feedback. Survey activity was therefore halted, and no other measures to involve citizens were taken. Citizens' response to e-Government initiatives is pivotal in the evaluation and design process, but public administrations are notoriously poor in providing participation opportunities. The AR group was left with little help in addressing the challenge of involving citizens.

**Premise 9: The Organisation is Independent and Autonomous, and in Control of Its Own Resources and Strategy**

The digital post system was designed without a test functionality, which constituted a serious barrier to adoption. The municipality could not resolve this problem, since they did not have control of the (nationally organised) development of the system. A major barrier for adoption

was the poor design of the output manager's of attachment handling (perceived by workers as cumbersome). Finally, the lack of integration between a range of systems (including the case handling system) and the output manager need to be resolved nationally with significant resource deployment. Another external barrier was the office workers' perception that use of citizen identifiers for digital post purposes was both a violation of privacy and illegal. The issue was raised at the Danish Data Protection Agency, but was still unresolved eighteen months later. Paper mail from other government institutions needing forwarding was a significant barrier to realizing benefits from digital post. A number of public institutions refused to receive digital letters (especially the police and courts). In none of these cases had the municipality the jurisdiction to resolve the problems. The pattern of semi-autonomous cooperating institutions is typical of public administrations.

## NINE PREMISES, NINE CHALLENGES

In this section the action research experiences are reformulated as challenges for action researchers, and some practice suggestions offered.

### **Challenge 1:** Supplementing the Expertise of the Practitioner; Developing Internal Knowledge Transfer

An experienced action researcher may develop competences and experiential knowledge that are complementary to the practitioners': for example implementing IT systems, organizational change management, benefits management, business process analysis and specific work domain knowledge. Internal staff may be experts in their own focused work process, but few managers possess the varied competences necessary to effect change in the public sector. (Pedersen & Hansen, 2010; J Rose, Persson, Kræmmergaard, & Nielsen, 2012). Action researchers understand their responsibility to learn situational knowledge; however they also need to accept a responsibility for developing team learning dependent on relationship building. Relationships need to encompass (in the horizontal dimension) both IT and business functions, and in the vertical dimension (staff, managers and senior managers). Some relationships can be formalised through membership of the project group - others may remain outside it. The transfer of some explicit knowledge may be a part of the initial agreement, but the commitment to take each other's experiential wisdom seriously is dependent on trust relationships which take time to develop. The action researcher should try to anticipate potential conflicts resulting from different knowledge standpoints, and develop strategies that enhance the internal value of participants by increasing their knowledge capital.

### **Challenge 2:** Addressing Multiple Interests and Goals Only Partially Represented by the Practitioner Team; Building Up the Networks Necessary to Effect Change

The public sector faces 'multiple goals, many of which are intangible or in conflict with one another' (Caudle, Gorr, & Nowcomer, 1978); public servants function in a complex context with many internal and external stakeholders (Rose et al., 2012). In this project, the problem of communicating digitally with citizens was owned by the national government, not the practitioners or the organisation involved – many of whom felt unable to prioritise the program, or opposed it on ethical grounds. Conflicting stakeholder goals require open discussion and a shared commitment to progress. Action researchers need to act as brokers between actors with

different interests, building up shared commitments and mediating between potential conflicts. The project group may need to act as proxy for the interests of unrepresented stakeholders, and to explain, defend and justify externally promoted programmes (such as the digital post project). It may also be responsible for recruiting and involving stakeholder groups such as trade unions, IT suppliers and citizen groups, and for anticipating and resolving potential interest conflicts.

### **Challenge 3: Integrating Action Research with e-Government Initiatives**

Action research projects tend to be small-scale efforts with limited resources, at least compared to the e-Government initiatives that they are associated with. Practitioners' careers and work lives are more dependent on the success of these (often large scale) initiatives than on research. It follows that action researchers who wish to be influential in the practice situation must find ways of flexibly aligning themselves with urgent goals confronting practitioners. In particular outputs from the AR should be linked with both IT project deliverables, and business objectives at the local operational level. The AR project should maintain a separate authority base so that it cannot be overtaken or coerced either by IT project managers or by business managers, and should adjust to changing conditions and constraints.

### **Challenge 4: Developing Decision-Making Capability**

Decision-making in the Danish project was complex and difficult. The formal project arrangements simply did not provide adequate decision-making conditions, forcing the researcher and the project manager to take operational decisions on behalf of the group. This at least allowed the generation of useful activity, though probably at the cost of wider impact. Various forces, including the division of decision-making between politicians and managers, multiple accountabilities, committee structures, centralised ownership combined with devolved implementation, multiple competing initiatives and the after effects of new public management trends combine to make power structures in public agencies rather diffuse. However working with distributed managerial authority will usually be necessary in e-Government action research. The project will benefit from a champion with both formal and actual power to resolve deadlocks within the group and intervene when AR group decisions are blocked by other parties. The project's mandate should, if possible, give it priority over everyday operational concerns and some resources to obtain services from other departments or externally. Internal project members should identify how to work within the regulatory systems, and where it is necessary to have it changed.

### **Challenge 5: Effecting and Managing Change**

The Danish managers neither acted decisively to remove barriers to digital post, nor enacted the change initiatives promoted by the AR group. Practitioners seemed to have neither the incentive to change, nor the competences to effect change. The AR group lacked authority and competence to drive change in the absence of managerial and staff commitment. Since the organizational conditions in Copenhagen municipality are broadly typical of other public authorities it can safely be assumed that driving change in municipalities is not a simple task. However, the AR literature provides very little help in designing the change effort. The AR group must actively mitigate or compensate for lack of change management skills in the environment. Resources may be allocated in the collaboration agreement for effecting change. The visions of the project should be formulated simply (in alignment with organisational goals) and regularly

communicated. Internal change management expertise may be recruited and trade unions involved to maintain focus on change issues. Key staff who can act as change agents locally may be involved in the project.

#### **Challenge 6: Addressing Fast-Moving Agendas and Conflicting Priorities as They Develop**

Our earlier analysis suggested that the combination of canonical action research phases, plan-driven change and PRINCE2 was not appropriate for the e-Government context. Researchers schooled in time-consuming in-depth analysis, documentation and detailed planning align poorly with practitioners handling a rapidly evolving operational world with competing resource demands, informal decision-making and constant time pressure. Action researchers need to embrace some principles of agility, including short action cycles, small and simple changes with immediate benefits (quick wins) and clear feedback mechanisms. Researchers should be embedded in the organisation on the same terms as practitioners, and the project should create a non-threatening co-operation environment with frequent progress reports, and short face-to-face update meetings. Shared goals need to be updated to reflect evolving situations.

#### **Challenge 7: Communicating Learning Effectively**

We have already argued that the specifying learning phase of canonical AR is not well elaborated. Researchers are trained to disseminate learning through research articles; however writing a final report is a poor way of transferring learning in public administration. Learning is a pre-requisite for change, however government archives are full of reports that have had little or no effect. The digital post project had another strategy for building and disseminating learning: interaction. Various workshops and interactive evaluations were carried out, though the results were meagre because of poor commitment. Action researchers have many opportunities to act as a sounding board and stimulate reflection through posing astute question, for example in interviews and departmental meetings. One to one conversations with key participants, meetings and presentations are more effective for communicating learning than reports, especially where the AR group has good skills for encouraging reflection. The internal communication media (intranets, social media, twitter) is better adapted for short, frequent sound bites, than well-argued written researcher diagnoses and plans.

#### **Challenge 8: Addressing the End-User - the Citizen, Businesses, Voluntary Organisations**

Much of e-Government concerns the delivery of service to citizens using information technologies. End-users also include businesses and voluntary organisations. Involving citizens is challenging (Axelsson & Melin, 2007; Flak, Moe, & Sæbø, 2003; Mambrey, 2004) and empirical studies of participation sparse (Axelsson & Melin, 2007). Nor can citizens be treated as a homogenous group (Cullen, 2005). Since end-users also have to change behaviour it can be argued that they should also be involved to some extent, and action researchers need to develop mechanisms for involving end-users, or at least understanding and incorporating their legitimate concerns in AR projects.

**Challenge 9: Securing Co-Operation from Multiple Autonomous Stakeholders**

Digital post is a national e-Government initiative implemented in all public institutions. The Ministry of Finance controls design, systems development, and technical implementation. Interoperability (Bannister & Connolly, 2012), joined-up government and collaboration with vendors (Ndou, 2004) have proved to be serious barriers to e-Government initiatives. Action researchers therefore need to try to influence wider networks outside the project organisation, though this may be a difficult task.

Table 2 summarises nine action research premises, challenges and suggested responses.

*Table 2. Action research premises, challenges and suggested responses*

	<b>Action Research Premise</b>	<b>E-Government Action Research Challenge</b>	<b>Suggested Responses</b>
1	Expertise in separate domains: the practitioners are expert in the relevant practice areas, researchers understand relevant theory and research method	Supplementing the expertise of the practitioner; developing internal knowledge transfer	Encouraging team learning through relationship building, anticipating knowledge deficits, increasing knowledge capital
2	The organisation represented by the practitioners owns the problem that is being tackled	Addressing multiple interests and goals only partially represented by the practitioner team; building up the networks necessary to effect change	Mediating stakeholder interests, explaining and defending absent stakeholders, recruiting key stakeholders
3	The action research intervention is integral to, and congruent with the IS initiative it addresses	Integrating action research with e-Government initiatives	Aligning with practitioner goals, maintaining both IT and business linkages, maintaining independent authority base
4	The AR group are competent and authorised to take decisions on the organisation's behalf	Developing decision-making capability	Working with distributed power circuits, defining a mandate, using a champion's influence
5	Practitioners represent the whole organisation and competent and authorised to effect change	Effecting and managing change	Orchestrating the change effort, recruiting change agent expertise, allocating change resources
6	Change is plan-driven and the AR group has the skills required to formulate plans and implement them	Addressing fast-moving agendas and conflicting priorities as they develop	Embracing agility, updating goals, regular feedback and face-to face updates
7	Learning from the intervention can be formulated and transferred	Communicating learning effectively	Communicating through interaction, face-to-face communication, employing modern communication media
8	The actors whose behaviour needs to change are within the organisation	Addressing the end-user: the citizen, businesses, voluntary organisations	Designing end-user participation, understanding the end-user's perspective
9	The organisation is independent and autonomous, and in control of its own resources and strategies	Securing co-operation from multiple autonomous stakeholders	Recruiting and leveraging external networks

## CONCLUSION

There is a need for empirical studies in e-Government (Heeks & Bailur, 2007; Lee, 2010; Yildiz, 2012), since the field lacks empirical grounding (Coursey & Norris, 2008). Action research is a useful form of empirical research in applied fields, and becoming accepted in e-Government research. We set out to identify challenges for action researchers working in e-Government, taking as a starting point our recent experiences with the Danish digital post project. Starting with retrospective analysis of the project, we identify methodological issues and trace them to common assumptions in action research, which we frame as premises. We identify nine challenges, and suggest some ways of tackling them. Challenges 1-5 reflect aspects of the culture of government institutions, which many researchers distinguish from the culture of privately owned companies (Boyne, 2002; Flak & Rose, 2005). Here action researchers need to develop sophisticated organisational skills to be able to manoeuvre, and the canonical action research approach (diagnose and plan) is unlikely to succeed. Challenges 6-7 concern change management and knowledge management skills, which may be beyond the reach of practitioners and researchers alike. Challenges 8-9 relate to the distributed ownership of problems in the e-Government field. Other public institutions, national government and private vendors contribute to networked governance, and end-users should not be ignored. Some of these challenges may occur in other forms of action research, but the combination forms a difficult cocktail, and current advice on how to conduct action research does not adequately prepare for them. Our suggested responses to these challenges are: encouraging team learning, mediating stakeholder interests, aligning with practitioner goals, working with distributed power circuits, orchestrating the change effort, embracing agility, communicating through interaction, designing end-user participation, and leveraging networks. These goals suggest a rather different approach to action research than that proposed for canonical action research.

One major limitation of our investigation is its focus on achieving meaningful change in public organisations. As McKay and Marshall (2001) point out, change is only one of the dual imperatives of action research, and some of the solutions we propose may create further difficulties for the rigorous methodological foundation of the research imperative. Future research may concentrate on extending normative principles for action research in the directions suggested, to offer better preparation for action researchers in e-Government. Better foundational models than canonical action research may be available in the work of Checkland (1998) (who based his work on a relationship-managing view of organisations derived from the work of Vickers (1965), himself a career public servant) or the action science of Argyris (1985).

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