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# ICT AND PUBLIC ADMINISTRATION REFORMS

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## Abstract

The advent of new ICTs brought a lot of new assumptions about radical changes in our society. In the context of the arrival of a new society, public administration was supposed to witness (and to address or implement) changes at different levels, such as:

- citizenship (citizens becoming participants in governance or even a shift to e-democracy);
- the nature of public service jobs (in terms of skills, work processes and job design);
- organizational changes (from a hierarchical to a more horizontal structure, to network or even virtual organizations); and
- the entire government (from classic bureaucracy to New Public Management and to network and digital governance).

Technological change cannot be judged outside the social, economic and political frameworks. The massive change in our society cannot be explained only by technological (especially ICT) factors. Excluding other factors may help us predict easier (but not more accurately) future evolutions but as a scientific effort it is a bad practice. Much of the assumptions about technological change came from hasty generalizations. The changing nature of some collective actions, jobs in certain areas of the economy or organizations were considered as optimal (and necessary) paths for the entire society (from individual to national levels). Public administration reforms are far from being a consequence of new technologies. Moreover public administration reforms do not embed ICTs and do not have a happy marriage with e-government.

**Keywords:** public administration reform, information and communication technology, e-democracy, New Public Management, organizational change.

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## 1. ICT and a new society

The advent of new ICTs brought a lot of new assumptions about radical changes in the entire society. Similar claims were made before about other technology advances. Standage (1998), speaking about the Victorian Internet – the telegraph – mentioned some of the hopes invested in that technology – a revolution for social communication and a possibility to further democracy and to end up wars. The results were different from those expected. The telegraph was rather used to wage war than to bring peace. Faster communication sped up life, changed businesses and governments, but changes were not that radical at societal level.

Nowadays many authors speak about the world as entering the Information Society – centered around the production, storage, retrieval and utilization of information, in which a ‘network society’ appears as transforming politics, economics, culture but also family and individuals (Castells, 2000, pp. 13-18).

Technological determinism is not something new. Roe Smith (1994) makes a distinction between the ‘soft view’, technology drives change but responds to social pressures and a ‘hard view’, technology is an independent factor, autonomous from social factors. In many cases the proponents of the Information Society belong to the hard view. Excluding social (but also economic) factors may lead into believing that we can successfully foresee in what way society will evolve as a consequence of implementing a new technology. Such beliefs gave birth to a literary sub-genre. Now forgotten, technological utopias were very popular at the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> centuries. What remained on the long term were only dystopias like Huxley’s *The Brave New World* (not only for literary merits but also for the warning about the possible misuse of technology). Technological determinism may be found not only in dusted utopias, but also in the existing e-government literature. Heeks and Bailor (2006) found in an e-government literature review that 18 out of 84 analyzed papers (21.43%) belonged to the theoretical framework of technological determinism.

Usually in discussing technology adoption on society one should carefully balance between technological reasons for adoption and social forces behind or against such developments. Different social, political, economic, cultural or religious (a possible example being the position of the Romanian Orthodox Church regarding the biometric passports, see Frunză and Frunză, 2009) factors can lead to the adoption or the rejection of a technological innovation.

Claims that the Information Society has arrived usually come with ideological aspects pertaining to the third wave (after agriculture and industry), the implication being that changing waves means changing the mode of society organization. Yet the arguments in favor of a third wave based on information (or knowledge) are thin. The most common is that more and more people are working with information. Still, they are working in industry – the second sector – and services – the third sector (with the help of ICT), organizations of the second wave. Fuchs (2008, pp. 194-195) claims that the quaternary sector (in which knowledge goods and services are produced by knowledge workers) surpasses any of the other three sectors. In order to get to these

results, in the quaternary sector we find healthcare, education, government and even manufactures (electronics, paper etc.).

We do not have enough proof that technology advances may appear outside the society and that social, economic and political factors do not have a say in what concerns the use of innovations. There are several concerns raised by the use of technology. Technology seen as a tool for reinforcing power is one of them and an old one. Kraemer and Dutton (1979) warned that IT is a malleable technology controlled by those in power in order to enhance their control. ICT has many benefits, but their distribution can foster inequalities, may create winners and losers (Angell, 1996) more by exclusion than by exploitation (Lash, 2002, p. 4).

## **2. Challenges for public administration**

In the context of the arrival of a new society, public administration was supposed to witness (and to address or implement) changes at different levels, such as:

- citizenship (citizens becoming participants in governance or even a shift to e-democracy);
- the nature of public service jobs (in terms of skills, work processes and job design);
- organizational changes (from a hierarchical to a more horizontal structure, to network or even virtual organizations); and
- the entire government (from classic bureaucracy to New Public Management and to network and digital governance).

### **2.1. Changes in citizenship**

The rapid development of new information and communication technologies, especially the Internet-based applications, was seen as a new democratic promise. A greater interactivity permitted by most Computer Mediated Communication (CMC) systems gave hope of a rise of a more direct or participatory democracy. E-democracy, especially at local level, is based on a broader public debate space, in which the contact between citizens and decision-makers will be fostered by ICTs. The new technologies, based on flat and open networks, enabling a two-way communication, made information provision possible to everyone, anywhere and anytime (Dutton, 1999).

The first researches failed to offer any proof that Internet use may bring more off-line participation (like voting) (Bimber, 2001). Only a recent body of research showed that Internet political participation (like political chat rooms, e-mail, online news) is related to turnout (Mossberger, Tolbert and McNeal, 2008). Chevallier (2009) finds that iVoting is used more by occasional voters which are familiar with computers. The Internet did not bring too many digital citizens or *netizens* ready to change the way in which politics (or at least elections) are made. In several cases ICT means may serve as mobilizing tools. We should not be too hasty to conclude that the means are changing the issue. The fact that in June 2009 the Iranian protesters used Twitter to get mobilized does not mean that democracy is better served – more traditional ways of communication could have been as effective as Twitter.

Voting is just a form of participation in electronic democracy. Through ICT means citizens can express their needs (individually or in more or less ad hoc coalitions) or even participate in the deliberation regarding the adoption of specific policies and measures. Communication and the establishment of virtual communities are at the core of expectations towards improved participation of citizens. Both forms are confronted with a series of problems.

There is a significant body of literature stressing the limitations of CMC. The lack of vocal, paralinguistic and non-verbal features, common to face-to-face communication, are the main limitations quoted by many. These may lead to either a lack of social presence or de-individualization effects or reduced number of social cues. As a result of those shortcomings CMC may be seen as 'promoting task-oriented, depersonalized and anti-normative behavior' (Lamerichs and TeMolder, 2003, p. 452). Factors as anonymity or challenging and flaming (emotionally charged messages, ranging up to hostile and insulting ones) may contribute to seeing CMC as depersonalized and leading to anti-normative behavior.

While exploring virtual communities Etzioni (1999) found two problems: identification (which may be overcome by some form of authentication) and accountability, and two advantages: interactive broadcasting (dealing with multiple recipients at a time) and memory (retrieval of information). We cannot be sure that Fuchs (2008, pp. 126-127) is right in saying that Web 3.0 (not yet existing but defined as networked digital technologies that support human cooperation as MUDs, MOOs, groupware or Wikis) may resemble to the Marxian idea of collective cooperative production and Tonnies' idea of communities. Adhering to a virtual community may be only a way of reinforcing existing beliefs and attitudes. In many cases it may lead to a radicalization and polarization of beliefs and attitudes in a society.

Gronlund (2003) sees various e-democracy initiatives as serving more the positions of politicians than that of citizens, by providing the first with a new way to contact directly with people. The benefits for the latter are somewhat elusive.

## ***2.2. The changing nature of public service jobs***

Based on the classification of the Committee on Techniques for the Enhancement of Human Performance: Occupational Analysis, Commission on Behavioral and Social Sciences and Education and National Research Council (1999, p. 106) we may expect to find changes in the nature of structure and content of work in the following dimensions:

- the degree of discretion or decision-making power workers have over how to do their jobs – *autonomy-control*;
- the range or breadth of the tasks embedded in a job – *task scope*;
- the *cognitive complexity*; and
- the extent to which the quality of social interactions, including their emotional quality, is critical to job performance – *relational* or *interactive*.

In theory, within the Information Society, based on knowledge production, the transformed workplace will provide the employees with greater autonomy (higher

latitude/discretion to organize their tasks, increased decision-making power and greater responsibility). The task scope will be broader as routine jobs will disappear. The cognitive complexity will increase as better qualification and versatility will be in high demand. The relational characteristics also will be more important as the administrations will be more and more citizen/customer oriented.

Practice shows a different situation. Governments are still oriented on following the procedures, giving little autonomy to front-line public servants. Procedures (despite efforts for simplification) tend to be more and more detailed and there are strong demands for documenting each step in their activity (a well-known example is that of police officers spending less time in patrolling because of the increased workload in writing reports). These trends do not increase the task scope or the cognitive complexity. The increase in using ICT in workplaces is far from putting cognitive problems – the amount of IT knowledge needed in government is usually low. Relational characteristics of the job seem to be changing in the last 30 years with a greater emphasis on politeness, kindness and amiability towards citizens.

Another issue regards the contractual reports between public employees and employers. The trend towards more flexible terms of employment (other than full-time and for life) had been proposed and implemented in several countries. Most countries (especially those having traditional civil service systems) are still offering mainly this type of employment (for certain positions, especially those not related to the exercise of public authority, flexible arrangements are in place).

### **2.3. *Organizational change***

The new type of organization is envisaged as having the following features:

- flatter hierarchies which are better suited to respond to a changing environment; some authors like Goldsmith and Eggers (2004) claim that hierarchy is dying and has to be replaced by networks;
- less compartmentalization – different parts of organizations are starting to work together;
- team-based structure;
- emergence of virtual organizations; and
- commitment to organizational goals and mission is replacing blind following of procedures and orders.

The intellectual source for many of the above comes from IT industry success stories that fit high-tech companies, especially upstart ones, with fewer employees. For big companies, evolving in more steady environments, many such characteristics are missing.

The structure of public administration has not changed significantly. Initiatives like de-centralization or setting-up new autonomous agencies ended by being reversed in a new wave of centralization mainly because coordination has proven to be too difficult (ICT was not enough to overcome any difficulty). The hierarchical organization seems to be as much in place as it was twenty years ago, the same being true for

compartmentalization. Teams as working units are still rarely used, as attributions are clearly divided between compartments. In the case of some inter-governmental relations teams are used, but cooperation inside the teams may be rather difficult as each member is devoted more to his or hers organization than to the task. In the same area Bekkers (2000) found a few virtual organizations that had as main purpose data exchange and sharing between government bodies.

In trying to identify the effects of new technologies on organizational structure Kraemer and King (2005, p. 7) claimed that 'IT has had little discernible effect on organization structure, and seems to yield somewhat greater centralization in already centralized organizations', a conclusion that remained true from the time of mainframe computing to the time of personal computing.

As mentioned in the previous section, following procedures is still the basic rule in public administration. The organizational goals and mission to which public servants should be committed are still based on classic bureaucracy values as the NPM did a bad job in pursuing public value (O'Flynn, 2007).

More than that, organizational factors do not seem to be affected by new technologies, and influence the way in which ICT is adopted. Fountain's technology enactment model (2001) is listing organizational factors as the main factor for technology enactment – new technologies are adopted only after adjustment to organizational forms. The critics (see Yildiz, 2007) do not contest the influence of organizational factors but its amount.

#### **2.4. Public administration reforms**

One of the visions for public governance in 2020 (Botterman *et al.*, 2008, p. 9) is based on the following statement 'Today, in the 21<sup>st</sup> century, *empowerment* seems to be the next great societal value, in response to the massive increase in information and communication permeating society'. A key driver for government's transformation towards this goal is ICT. Such a transformation, in a full joined-up and networked government should have at its core efficiency and effectiveness.

Such visions are quite frequent. We can see the role that ICT can have in public administration reforms (both as a direct or indirect reason and as a key drive) but also how New Public Management ideas (efficiency and effectiveness) or post-NPM (joined-up and networked government) are present in such images of future.

ICT is seen as the main reason for public administration reforms mainly for those who foresee a technologically driven change in the entire society. When discussing public reforms origins or sources ICT is often forgotten. Şandor and Tripon (2008, p. 2) listed several different reasons for the present wave of public administration reforms (ICT not being one of them): lack of citizen trust in the public administration system; ideology – usually conservative ideology, lately right-wing populism; democratization – especially in former communist countries; European Union integration; development – especially in less developed countries; and economic crises (like at the end of the '70s).

The public management reform movement, especially in the form of the New Public Management, tried to improve the efficiency of governments, by importing ideas from

the private sector (like privatization, market orientation, decentralization, citizens seen as customers or shareholders, a strong emphasis on management and leadership).

The two fields (ICT and NPM) were intertwined in some of the literature. In an analysis of articles published between 1993-1995 in the field of public administration (Lan and Anders, 2000) the distinct area for technology use and management represented 2.3% of the total scientific production. Technological change was seen successful only accompanied by management reform and new technologies were seen as a key support (sometimes a key driver) for management reform.

In fact the relationship between ICT adoption and organizational performance seems to be more debatable than expected. Gripenberg (2004, p. 106) is quoting several studies that found no relationship or even a negative one. We did not explain yet the Solow productivity paradox, 'You can see the computer age everywhere but in the productivity statistics', meaning that in the last four decades the relationship between ICT investment and productivity growth is negative. There are authors like Melville, Kraemer and Gurbaxani (2004, p. 284) that found in literature significant support for the claim that ICT improves organizational performance. From their review on this body of scientific knowledge we may understand some of the issues involved:

- How do we measure ICT business value? We can choose a theoretical background from microeconomic theory, organization theory, sociological and socio-political perspectives (not all pertinent for public administration), each offering several different alternatives. The results may differ very much for each case as we choose one option or another.
- ICT influence is mediated by business processes and workplace practices.
- The external environment (country and industry – in our case branch of government – characteristics) plays an important role and should be not eliminated from the analysis;
- ICT is a multi-dimensional construct – to count the number of systems or IT spending is not enough. Different dimensions may be used, like technology (hardware and software), human resources and IT organizational resources (from strategy to customer orientation).

All these issues may influence a study. Each model proposed is using different measures of different constructs, is including or excluding some of the mitigating factors. In the end, if applied to the same cases we may end up by having very different results.

Case selection may be another problem. Many studies do select a specific industry or a specific case for analysis at a specific moment. In many situations success cases were picked – thus confirming the initial hypothesis (IT is beneficial) just by sampling. Timing may be of essence: analyzing a case of a company that comes with an IT-enabled innovation may show a big business value, but when the innovation is generalized across the industry the gains are much smaller.

In the end, even for random or exhaustive sampling another issue should be carefully handled – causality. Suppose that a study finds that the most successful companies are those with higher IT usage. There is a low chance that the study will control for



confounding variables. Also there is little concern for getting right the temporal sequence – what comes first, IT usage or success?

While supporting this link Beckers and Homburg (2005) are listing two possible arguments against the marriage between e-government and NPM: (1) the efficiency emphasis of the NPM can be in conflict with the investments demands of e-government (2) public accountability concerns are not in line with possible effects coming from contracting out e-government services.

Another (and newer) line of thought (Lips and Schuppan, 2009) about the way in which public management and e-government are linked tries to show that we did not have enough indications of such a link due to factors like:

- A substantial amount of time is needed in order to learn how to use new technologies – a claim based on previous and much slower technological changes which seems to be in contradiction with the fast pace of technology innovation and which leaves open the question – how many additional years are needed?;
- We are not looking through the right lenses – instead of seeing ICT as a toolbox for specific outcomes (a similar view can be found in Hîntea, 2011) we should focus on the transformations occurring in government and we should use a holistic framework of analysis. The argument has its merit but there is no indication why by changing lenses we will see changes in public management that we did not see earlier.

### 3. Conclusions

Technological change cannot be judged outside the social, economic and political frameworks. The massive change in our society cannot be explained only by technological (especially ICT) factors. Excluding other factors may help us predict easier (but not more accurately) future evolutions but as a scientific effort it is a bad practice.

Much of the assumptions about technological change came from hasty generalizations. The changing nature of some collective actions, jobs in certain areas of the economy, organizations were considered as optimal (and necessary) paths for the entire society (from individual to national level).

After more than thirty years of information revolution we can see more transactional than transformational change. The public management reform (especially NPM, in which case its manifesto *Reinventing Government* may be seen as another example of hasty generalization) had lost its impetus. Some of the reasons may be related to oversimplifying the factors in action at social level, others by generalizing some success cases as a rule. Definitely the lack of significant successes is contributing to its loss of popularity.

Public administration reforms are far from being a consequence of new technologies. Moreover public administration reforms do not embed ICTs and do not have a happy marriage with e-government. Good implementation of new technologies is one of the conditions for successful reforms. Future research on the relationship between public administration and ICT should try to avoid hasty generalizations and over-

simplifications in favor of a more rigorous approach. Such theoretical contributions may enrich the field and need to be followed by empirical proofs.

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