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**Governing Public/Private Networks for Public Finance:
A Case Study of E-Accounting and E-Procurement in Jordan**

Abstract

The purpose of this paper is to present a case study of e-accounting and e-procurement in Jordan as indicative of the transformation taking place in contemporary public sector governance related to the re-adjustment of the functions of government in its transition towards a 'networked state' (UN 2003). We contribute to a theoretical and practical discussion on public policy, administration and the organization of the state by the means of an interdisciplinary literature review and a case study describing the complex multi-level governance arrangements and public/private networks of key e-government pilots for the transfer, development and implementation of e-accounting and e-procurement. Based on our findings and analysis, we identify a number of challenges to govern public/private networks, which are perceived to be of relevance for offering policy direction and guidance to practice to similar initiatives in the Arab region.

Keywords: large scale information infrastructure, public financial management, electronic governance, public/private networks.

1. Introduction

The purpose of this paper is to present the case study of e-accounting and e-procurement in Jordan as indicative of the transformations taking place in contemporary public sector governance. Our findings identify a number of challenges with regards to the implementation of the e-accounting and e-procurement e-government pilots, which may be of relevance for the research and study of similar and related initiatives in the developing, but also in the developed world and for offering policy direction and

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guidance to practice in the context of the re-adjustment of the functions of government during its transition towards good governance a 'networked state' (UN 2003; Ciborra and Navarra 2005).

The public procurement of goods and services is widely recognised as one of the areas most vulnerable to poor governance, but it is an example in which private and public sectors interact more frequently. At the same time, electronic procurement relies on solid accounting information, which is perceived to be the first step in developing the large scale information infrastructure necessary for modern public sector finance and governance. In this context, Information and Communication Technology (ICT) in general and e-government applications in particular (such as ID Cards, e-taxation, e-procurement, e-health services, e-accounting, e-voting, justice information systems, land management systems, etc.) are seen as essential to increase transparency and accountability of government agencies and reduce transaction costs in service delivery. Better accountability and improved transparency are the identified characteristics of good governance, and the latter becomes the *conditio sine qua non* for the rich states and international agencies to supply aid to developing states (UN 2001; UNDP 2001; UN 2002; UNDPEPA 2002; UN 2003; UNDP 2003; UNESA 2003; UNPAN 2004; UN 2005).

We use a qualitative case study approach to study and analyze the e-accounting and e-procurement e-government pilots in Jordan based on empirical research conducted during the early phase of implementation of the projects between 2002 and 2005 and recently reviewed and updated. The case study presented here is of interest because of Jordan's advanced programs for the creation of an information society, including the launch of a world class software industry and the networking of the country. Jordan is also one of the rare countries in the Middle East with a history of commitment to good governance and Information and Communication Technology (ICT) related initiatives and for its projected desire to implement and deploy powerful coordination technologies in its state and public administration. And last but not least, this programme is the first in the Arab region. The research questions motivating this paper are: what challenges and what type of public/private networks emerge for the transfer, development and implementation of the e-government pilots for public financial management? What lessons can be learned from the experience of Jordan as it tries to move towards a networked state? And finally, what are the implications of this experience for future research and guidance to practice?

The first section provides a literature review. Then we outline the methodology used for this research and describe the case study. Discussion, implications for practice, future research and conclusions follow.

2. Literature review

According to Brignall and Modell (2000) during the 1990s, in what has become known as the 'new public sector', many government services in advanced economies have come under pressure to become more efficient and effective, so as to reduce their demands on

taxpayers, while maintaining the volume and quality of services supplied to the public. To achieve this, they have been subjected to the introduction of various ‘private sector’ management techniques and the frequent adoption of some form of neo-market system in which the purchasers and providers of public services have been split and are frequently required to contract with each other. In this context, computerised financial and accounting systems in government have historically been used to create markets in areas where market relationships were hitherto restricted by transactional limits (Bastow, Dunleavy, Margetts and Tinkler 2000).

At the same time, it is possible to appreciate a movement towards, or at least many make a claim for, the introduction of programmes that shift from *government* as a characteristic of the unitary state, to *governance* by and through networks of institutions and individuals that extend well beyond any geographical boundary and act in partnerships held together by relations of trust (Bevir and Rhodes 2004). According to Rhodes (1997)[†] government and governance are not synonymous and although there are several contending meanings for the term, the following differences can be mentioned in relation to governance:

- a) interdependence between organizations, meaning that governance is broader than government and includes also non-state actors;
- b) continuing interactions between members of inter-organizational networks;
- c) no sovereign authority as it can be seen in the case of government.

In this way, e-government can be considered in terms of government’s definition and re-definition of traditional forms of authority, deciding which services should be provided electronically and how but also involving the re-structuring of the relations defining the modes of provision of government’s services, likewise for e-accounting and e-procurement. The shift to the term ‘governance’ thus signifies that deep changes are taking place, and e-governance leads to “a changed condition of recorded rule, a new process of governing, or a new method by which society is governed” (Rhodes 2000).

The last few decades have also seen increasingly the transformation of the role of accountants from traditional control to active agents in the making of strategic decisions that can affect organizational factors and influence institutional outcomes (Joseph 2006). To be sure both management and ICT professionals are concerned with design, implementation and assessment of electronic government projects especially since ICT governance is perceived to play a prominent role in fostering project success and delivering business value (Bowen, Decca Cheung and Rodhe 2007). A well established area of research within the literature of accounting information systems, investigates the impact of ICT in the behavior of individuals and organizations using accounting information and communication technologies, the concept of business processes and enterprise resource planning systems, the relationship between accounting information systems and other inter- and intra- organizational information systems as well as challenges and opportunities for the accountants in information systems (Sutton and Arnold 2002; Sutton, Gelinas and Hunton 2005; Sutton 2006).

[†] In Kickert et. Al (1997) *Managing Complex Networks*, London, Sage.

However, it is commonly found in the accounting information systems literature that even enterprise resource planning systems are not known to automatically facilitate integration, centralisation or control in the context of the private sector (Dechow and Mouritsen 2005; Quattrone and Hopper 2005; Nicolaou 2008) and especially in governing the continuing interactions between members of inter-organizational networks. Nevertheless, it is still important to distinguish between the programmatic uses of accounting and its technologies (Broadbent 2002). For example, public-private sector interactions over ICT already in the year 2000 showed a very rapid pace of change and had already come to define a new socio-economically important interface between government and the private sector (Bastow, Dunleavy, Margetts and Tinkler 2000).

In this move it is possible to appreciate the role of accounting information, and heretofore accounting information and communication technologies like e-accounting and e-procurement, used as a steering device to achieve specific impacts as intended by the funders, who tend to see accounting as a tool and creator of modernity (Broadbent 2002); good governance (Ciborra and Navarra 2005) and as part of neo-liberal programme of government reform known as New Public Management (NPM). NPM influenced many programmes of privatization and marketisation reforms in western governments placing emphasis on the creation of more effective organizational arrangements to increase the state's ability to offer services using novel institutional arrangements, increasing the use of market oriented mechanisms, and introducing the concept of 'partnership' between the public and the private sector for instance to share the risks and expenses of experimentation and to develop the information infrastructure for service delivery (Navarra and Cornford 2007).

The development of the infrastructure for ICT programmes in government is often advised and presented through similar private sector models and methodologies such as the Control Objectives for Information and related Technology (or COBIT), which are recommended as useful touchstones for government organisations as they conceptualize their governance frameworks and create the governance structure balancing different organizational objectives (Lin, Guan and Fang 2010). Nevertheless although COBIT has been suggested in some cases to be of value for ICT and accounting auditors in the private sector (Lin, Guan and Fang 2010), several best practice frameworks exist (von Solms 2005), but are typically applied to private sector companies (Tuttle and Vandervelde 2007; Sahibudin, Sharifi and Ayat 2008).

Such a move towards the introduction of private sector methodologies and ways of organizing, however, is rarely without friction and it is important to highlight the different challenges to implementation that exist in a public as opposed to a private sector context. For instance, Monteiro and Hanseth (1995) looking specifically at the complex dynamics governing the development of an information infrastructure articulate the role of the pre-existing set of practices, systems, technologies and routines (what they call the 'installed base') to influence the development of the new information infrastructure. Braa et al. (2004) analyse the processes of local translations and alignment in the context of technology transfer in the developing world and with surrounding political institutions

and actors. They bridged the global and local dimensions of technology transfer in their study of the development of the standards required for the information infrastructure of health information systems in South Africa, India, Cuba and Mozambique.

Hardy and Williams (2007) have studied both theoretically and empirically some of the issues discussed above to explore how public e-procurement policies are translated into practice. Using Actor-Network Theory and drawing on three case studies of public e-procurement of central government agencies in Italy, Scotland and Western Australia and find that all three cases differed in how they represented public e-procurement activities and in what they viewed as important, notwithstanding a common objective of gaining efficiencies and effectiveness in government procurement. The authors mention that 'As the idea of public e-procurement moved from a single concept arising from policy initiatives, such as e-government or modernizing public administration, to local level implementations it became separated as a name, business design, and practice' with multiple stakeholders and representations that manifest differently in varying situations and contexts.

Accordingly, accounting techniques create particular patterns of organizational visibility, calculability and operational utility in terms of governance (Miller 1990). By attributing financial values and rationales to a wide range of social practices, accounting translates qualities into quantities (Porter 1994). These findings stress the highly political nature of the development of such accounting information systems infrastructures, which are also influenced by the institutional, economic and cultural setting of the countries in which they are implemented, suggesting that institutionalisation, understood as local appropriation, can be a major determinant of the costs of transacting (and therefore also in their accounting) incurred during the development of the information infrastructure they studied. Accounting translates diverse activities and processes to the end point of the single figure and at the same time it construes comparable entities – such as profit centers, cost centers or strategic business units. “The labor efficiency variance, the return on investment of a division, and the net present value of an investment opportunity all share the elegance of the single figure” (Miller 1994). This illustrates that “new techniques are invented, or transferred from one domain to another and new meanings and significance are attributed to existing techniques” (Miller and Napier 1993).

However, in an extensive case study of network coordination between Ericsson and Telia Mobile, Hakansson and Lind (Hakansson and Lind 2004) concluded that new technologies and accounting practices played a key role in the formation of the networks they observed in their case study. The authors found a systematic combining of accounting and new technologies with overlapping accountability and that they were considered a basic facilitating process for coordination, interconnection and to enhance the development of the relationship between the two companies of their case study. This 'accounting logic' (Laughlin 1992) suggests that (a) for every entity the use of finance needs to be evaluated in terms of some measurable outputs achieved and value added and (b) that it is possible to undertake this evaluation in and through the finance actually used and received (Laughlin 1992:4). Yet this may not be the case in all circumstances especially as we try to understand the interplay of the use of accounting technologies in

public sector contexts and hybrid arrangements for the transfer, development and implementation of e-accounting and e-procurement systems within the public sector and between the public and the private sector, often at a scale that goes beyond the boundaries of the nation state.

Already in the context of the public sector of a developed country city environment like in the state of New York, knowledge sharing in cross-boundary information systems development involving multi-organisational cooperation proved to be challenging because of the difficulty of sharing knowledge across agencies, revealing the influence of factors such as incentives, risks, barriers for sharing and trust, to the effectiveness of knowledge sharing (Pardo, Cresswell, Thompson and Zhang 2006). The former in practice means that accounting and information systems professionals working in public/private initiatives for the development of a large scale information infrastructure in government should attempt to critically evaluate conceptual models created by systems designers or other members of the design team and be aware of the limits of re-applicability of private sector systems development and evaluation methodologies like COBIT. This work is also done alongside ICT systems and accounting auditors, but yet little theoretical and practical guidance exists to advice system designers and auditors on how to conduct such conceptual model evaluation as a way to guide full scale implementation (Dunn, Gerard and Grabski 2005). And very few – if any – have researched a case study of the early phases of infrastructure development for e-accounting and e-procurement systems in the context of the public sector in the Arab region which, based on rigorous academic examination, can be used by both researchers and practitioners to develop a general conceptual model for the identification and analysis of different configurations of public/private networks affecting the administration and organisation of the state as it moves towards a networked state; the latter is identified as the key contribution of this paper.

3. Research Design and Methodology

This paper applies a qualitative case study research design and methodology. We present the case study findings based on the review of the interdisciplinary literature and research available in the accounting, information systems and public administration literatures to combine practical and theoretical challenges to study of the transfer, development and implementation of the large scale information infrastructures for financial management in Jordan.

The research of accredited scholars in the fields of accounting, information systems and public administration is analyzed together with the extensive set of case study data to answer the research questions motivating this paper. Methodological considerations for the case study of e-accounting and e-procurement included also assumptions and values which served as a rationale for research and the standards or criteria the research uses for interpreting ‘data’ and reaching a conclusion (Bailey 1982; Benbasat 1984) as it is the case for this research. We use an interpretative research methodology, since it does not consider only secondary sources of data (codified in books and research journals) as ‘the’ source of knowledge about the world. Rather, it implicitly accepts that the sources of

knowledge and the nature of scientific production and discovery are also influenced by their cultural and social contexts. The interpretive approach is thus used to understand phenomena through the meanings that people assign to them (Boland 1984; Orlikowski and Baroudi, 1991), and the process whereby information systems influence and are influenced by a specific context (Avgerou 1989; Walsham 1993).

Through interviews, participant observation, content analysis and an interpretive case study research method it is possible to study the reality of the object of analysis, which aims at understanding the meanings that were assigned to e-accounting and e-procurement by the different actors involved in the initiatives. Interpretative research methods are “aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context” (Walsham 2000). To be sure, a unique strength of the interpretative paradigm for exploratory case study research is that it searches for a much deeper understanding of the participant-based experiences of the phenomenon (Marshall and Rossman 1989). The philosophical base of interpretative research can be traced back to hermeneutics and phenomenology (Boland 1984; Schwandt 1997), and is grounded in human experience, characterised as a process of interpretation rather than a physical apprehension of the world. Thus, interpretivists do not believe in the validation of an objective single reality, because for them the social reality is constructed by each person according to the meanings or beliefs he/she holds (including culture and history). On the other hand, within the positivist paradigm, research validity is seen as based on conventional benchmarks of rigour, such as ‘value free’ data, reliability and objectivity. Within the interpretivist paradigm, Hammersley (1987) defines validity as “an account that is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise” (Hammersley 1987).

The field work for this case study was conducted during the launch of the pilot projects between 2002 and 2005 and has been recently reviewed and updated. The first research trip in Jordan was carried out between June and July 2002. Primary sources of data came from interviews with key people responsible for major ongoing projects. A brief covering letter stating the intentions and objectives of the research project was sent to the Chief Information Officer of the Ministry of Information and Communication Technology (MoICT) to obtain access to study the e-government policy initiatives. During the first visit, the people interviewed were selected so as to encounter a diverse set of actors working in different institutions. The interviewees (20 on that occasion) included professionals and officials working in the government, the private sector, external consultants, non-governmental and both local and foreign donor organizations. Moreover, conferences attendance in loco made possible further high level meetings and participant observation.

Additional documentation, such as organisational policies and procedures, media and journal articles and information retrieved from the Internet, was also used as supplementary material. The above use of multiple-data collection methods allows for a more thorough examination of the perspective of each individual and to reflect it to the wider processes that the meetings with other relevant individuals were developing for the

researchers' to understand the overall institutional setting of the observation. This enabled the researchers to become deeply knowledgeable about each institution, thus allowing new insights about the topic to emerge. During the interviews, open-ended questions were asked aimed at gathering an understanding of visions, strategies, models and methods being used; expected and actual organisational impacts; the influence of cultural factors in adopting standard solutions; and the major risks and challenges facing ICT initiatives and specific projects. Various other qualitative materials were collected to describe both the vision and the plans of ICT programmes in Jordan and to gather elements of the current state of implementation.

Following the first fieldwork, the process of data collection was ongoing and structured via the means of voice and electronic communication. A second fieldwork was conducted in Amman between May and June 2004. Thanks to the hospitality of the delegation of the Italian Ministry of Innovation and Technology visiting Jordan, it was possible for the researcher to participate in the unfolding of the early phases of the e-accounting and e-procurement project planning and implementation in a 'real life' context. The opportunity for constant interaction with the delegation allowed intensive reflection during the process of research and was essential to gathering knowledge and insight about the processes, structures and networks involved in the deployment of the e-accounting and e-procurement initiatives, however taking an unobtrusive stance in their unfolding. Finally, after the field visit in Amman and during various visits at the Italian Ministry of Innovation and Technology in Rome, it was possible to continue the process of reflection and elaboration of the case study database accumulated over the years by engaging in a series of discussions with the key individuals responsible for Italian Government funded programmes in Jordan.

Thus the explanation of the phenomena studied and providing the empirical evidence for this research is embedded in the social sphere, and the relevance of this methodology rests in accounting for these multiple meanings (Keen 1991) and sources. These are addressed by accounting for the context of the phenomenon under study (Cavaye 1996), while aiming to contribute also to gaps evident in the existing literature. The chosen methodology also allows research to be conducted in areas in which few studies have been previously conducted (Benbasat, Goldstein and Mead 1987). Therefore, an interpretative case study allows the researcher to conduct a more thorough examination of the case study evidence than would otherwise have been possible with a purely quantitative research methodology. Multiple sources of evidence allow the researcher to address a broader range of historical, attitudinal and observational issues (Yin 1994). Therefore in qualitative interpretive research as opposed to quantitative research methods such as surveys, validity becomes a contingent construct which is grounded both in the processes and objectives of particular research contexts/projects, where the researcher interacts with the human subjects of its inquiry, sometimes also changing the perceptions of both parties (Walsham 1995).

Finally, it is important to point out that the events within the country of Jordan have been affected by the events in the surrounding region, making the research site at times a challenging location to conduct research. Interestingly, even in times of peace, Jordanian

politics and institutional configurations are a predominantly a closed world. This is not surprising considering that Jordan is the country which has the longest border with Israel and its involvement with the various developments related to the Middle-Eastern Question and the Palestinian *intifada*. As a result, it has been at times practically impossible to visit the country and conduct a study of the local administrative structures within and outside of Amman, let alone the role of the citizens within the e-government initiative.

4. The Case Study of E-Accounting and E-Procurement in Jordan

4.1 Background and Context

Contemporary Jordan presents a challenging object of analysis, open to many serious questions of interpretation. The historical origins and further development of the nation state are characterised by the stratification of a commingled set of administrative systems, which is a striking case of the politics of development and, today, late industrialisation. Behind these considerations reside a legacy of transition, first to develop internal legitimacy and consequently to maintain the survival of the regime in terms of the difficult situation in the region. Nevertheless, typically Jordan is ‘showcased’ as *the* best practice example on the implementation of reforms aimed at good governance and (more recently) also for e-governance and the information society.

E-governance initiatives are ranked high in Jordan’s agenda for the country’s ambition to become an active player in the global information economy and society and have given international visibility to Jordan’s efforts in such a direction. Among the most important steps made for the realisation of such a vision, in 1999 King Abdullah II launched the REACH initiative (Regulatory Framework; Estate; Advancement Programs; Capital; Human Resources Development), an all encompassing programme aimed at the creation of a knowledge economy based on an internationally competitive, Jordanian ICT industry. REACH also laid the basis for introducing reforms in relevant areas such as regulation and infrastructure development. Queen Rania is also supporting a number of initiatives sponsoring ‘e-villages’, working together with Cisco and UNIFEM, aiming to provide computer training and ICT awareness to women in rural villages.

4.2 ICT programs, partners, objectives and local institutions

The main ICT programmes are the creation of a shared vision about e-governance and a secure government wide network infrastructure to enable the government to introduce knowledge management, empower and connect government staff (MoICT 2000; MoICT 2001). Fast Track projects requiring immediate attention were launched in 2001 including motoring services (at the Department of Driving Licenses and Motor Vehicles), taxation (income and sales) services and land registry. At the end of 2006, the official web-site of the Jordanian e-government initiative (www.jordan.gov.jo) was launched as a unified gateway for citizens, business and the government sector. Various ministries are involved in supervising and monitoring the ongoing projects: the Ministry of Planning (MoP) oversees the initial selection phase, then the Ministry of Industry and Trade takes charge

of the review and implementation stages together with the Ministry of Information and Communication Technologies (MoICT), the former Ministry of Posts and Telecommunications.

ICT Program	Partners	Objectives	Local Institutions	Status
Infrastructure Development (Secure Government Network)	Cisco, Oracle	develop a secure government wide infrastructure for government-to-government operations	Ministries of: Finance, Industry and Trade, Planning; Municipality of Amman, Prime Minister's Office, National Information Technology Centre	Started in 2001: 6 ministries connected by 2003, 12 more connected by 2005, by 2010: 56 between ministries and other government agencies were connected in total
E-services	Deloitte	simplification of bureaucratic procedures, improve citizen convenience, decrease costs of providing services	Local Ministries, esp. Department for Motor Vehicles, Land Registry, Borders & Residency, Income Tax	Ongoing
Legal change	various IDAs	promote a legal framework that is conducive to investment, taxation friendly, accessible to global markets and with an attractive environment for corporate investors	Int@j, REACH	Started in 2001 and ongoing
Education: Connecting Jordanians	Cisco, UNDP	promote collaborative learning programmes, provide access, stimulating the development of a knowledge economy	Ministry of Education	Started 1999 and ongoing

Table 1: ICT Programs in government institutions, partners, goals and local institutions involved.

The MoICT has been designated as the focal point for co-ordinating the implementation of the ICT programmes. The MoICT's mission is to provide support and the capability to coordinate the management, implementation, interoperability and benefits of the national e-government initiative. The MoICT is also in charge of monitoring e-government

initiatives at the local level, manages network security and conducts quality checks and auditing as well as provides technical expertise to the other Ministries and government departments. Finally, the MoICT involvement with both local and international stakeholders can be seen into three main areas of activity: a) for the development and maintenance of the networking infrastructure; b) for the creation of e-services and shared services; and c) for liaison with the private sector. These include the creation of a single point of access for citizens, businesses and other government agencies. Table 1 summarises the partners, objectives and local institutions of the Jordanian ICT programmes.

5. Findings: Governing Public/Private Networks in Public Finance and Procurement

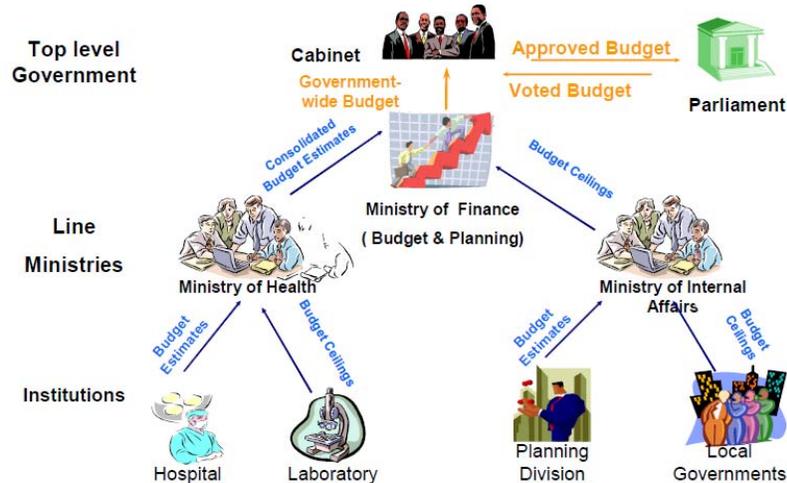
5.1 The Budget Preparation Process, E-Accounting and E-Procurement

Public financial management in Jordan can be exemplified by the budget preparation process, which is also related to budget execution and control. Figure 1, provides a simple graphical display of the budget preparation process in Jordan including top level government interactions with line ministries (for example health and internal affairs) and local government institutions. The primary source of data for financial expenditure decisions and budget policy and other policy making activities resides with the Statistics Department at the Ministry of Planning. The Budget Department within the Ministry of Finance is in charge of monitoring Budget Law. It also manages the relevant database and prepares, executes and monitors the Budget, reporting back to the Ministry of Finance. The Audit Bureau then controls the consistency of revenues and expenditures and provides expert advice on accounting issues. The main task of the Budget Department is to prepare the Annual General Report for the Parliament and Prime Minister. Any regulatory change in the government's budgeting and procurement activities will be enforced by the High Court of Justice, which in turn works with the Civil Courts and the GSD[‡].

The main objectives of the e-accounting and e-procurement initiatives centers around the development of the human and technical capacities of the Jordanian ministries involved in their implementation, including transferring the systems and training for government accountants and auditors. Following the establishment of the financial management system, staff is trained in budgeting, cash management, debt management, overall financial management and reporting, as well as internal accounting controls.

[‡] The Government Supplies Department (GSD) is a central department (composed of about 120 employees) of the Ministry of Finance, which handles any tenders with a value above 20,000 JD and no threshold limit is applicable for the value of the tenders awarded. Overall, it manages a cashflow of over 1 million Jordanian Dinars (around €1 million or £ 890,000) and it operates strictly following the "Supplies Act". Within the department there are many technical committees and one central tender committee.

Figure 1: The budget preparation process



The Chief Technical Officer of the Italian e-Government for Development Technical Unit suggests four steps for the successful realization of this initiative:

- a) Analysis, which involves gaining a clear and complete picture of current spending for each category, as well as identifying opportunities for improvement based on both internal and external information.
- b) Sourcing, which comprises all the activities required to plan and execute agreements with suppliers who can provide the goods and services companies must utilize.
- c) Contracting, which includes negotiating terms and creating the contract, making the contract available to users across the enterprise, and managing contract activity and compliance.
- d) Settlement, which entails ensuring that invoices match received goods and services and agreed-on delivery terms and discounts before submitting payment.

The package selected for the e-accounting initiative is the Oracle Corporation financial analyser, offering: General Ledger, Accounts Payable, Accounts Receivable, Cash Management, Purchasing and Fixed Assets. The driver of the system's development is to have a single data entry point, where information is entered only once and then flows automatically between all the relevant government organizations accounting spreadsheets, making it easy to track purchase orders, vendor's invoices and receipts, etc. across the workflow necessary to complete financial transactions, minimising the number of times the information has to be entered by the user, with the expectation in turn of minimising the possibility of errors or abuses inherent in manual based systems. One

interesting feature of such a package is that it has gateways that allow it to be easily interfaced and accessed by external systems running on the same software, providing standard reports about any relevant financial information that may be required in order to make certain budget expenditures (or allocation decisions) easily exported in other formats such as Excel or HTML. Similarly, it can also use third party reporting tools to develop more specific or complex reports.

The committee overseeing the development of the e-accounting and e-procurement pilots[§] is chaired by the Ministry of Finance (MoF) which coordinates the actions of the Ministry of Planning (MoP), the General Supplies Department (GSD), the Ministry of Public Works (MoPW) through the Government Tenders Directorate (GTD), the General Budget Department (GBD), the MoICT, the Italian e-Government for Development Technical Unit (TUGoI) and UNDP. The public procurement of goods and services in Jordan is regulated by Act No. 32 of 1993 (also named the “Supplies Act”), which was issued according to Article 114 of the Constitution. Open tenders constitute the majority of procurement operations^{**} and the public expenditure is managed mostly within 26 key ministries, each having a specialised accounts and purchasing department. Yet, there are not too many government entities which can raise their own revenue and manage their purchasing activities independently. These are the Ministry of Planning, the Customs Department and the Ministry of Finance.

Four different bodies are entrusted with public procurement and the management of open tenders depending on the value and type of goods to be purchased and there are 5 phases in the procurement process. Preparation and definition of project requirements sets the evaluation criteria and the parameters necessary for the Request for Proposal (RFP). Then the tender for the RFP is advertised and proposals are received. The third phase oversees the technical evaluation of the proposal and gives a first response to the vendors that have applied based on strict technical evaluation criteria. This stage is of great importance since only technically qualified vendors will be considered for their products or services before the financial proposal is opened. After the financial evaluation, the last stage involves the official award decision and the negotiation and stipulation of the contract between the PMO and the winning bidder.

The Ministry of Finance sets rules on expenditure controls, revenue raising and procurement (through the GSD) and audits all other Ministries’ financial activities. The Ministry of Finance receives income and expenditure reports on a monthly basis from all other ministries, which are obliged to transfer their revenues to specific bank accounts (all these are managed by the Central Government Account, managed in turn by the Central Bank), which then reports all the transactions of the Government Account back to the Ministry of Finance. Then the Ministry of Finance is bound to retype all this

[§] The e-accounting and e-procurement e-government pilots were initiated by the Government of Jordan in partnership with the Italian Ministry of Innovation and Technologies (MIT) and the Division of Public Administration and Development Management (DPADM) of the United Nations Development Programme (UNDP) within the framework of ‘Capacity Building Initiative on ICT for Development’.

^{**} Open tenders constitute 92% of total operations of GSD, request for proposal 6% and direct purchase (2%)

information into its information system to take control of the national financial situation and to be able to report it at the end of each month to the Government Finance Bulletin for the Prime Minister.

As part of the broader public sector reform effort, the government of Jordan has also embarked on a financial management reform process, which aims to establish a) a Medium Term Fiscal Framework (MTFF, a system encompassing macro-economic planning, revenue forecasting and a medium-term expenditure framework); b) the development of a database on public investment programmes; c) strengthening financial control capacity; d) result-oriented budgeting. Specifically, the expectation of the e-accounting and e-procurement initiatives is to create a fully integrated financial system that will lead towards a complete and integrated accounting and financial planning framework that will include in addition to the Budget Department, also the Income Tax Department; Customs; the Land and Survey Department; the General Supplies Department; the General Sales Tax Department and the Ministry of Planning and Human Resources for Jordanian Civil Servants under the Minister of Administration Development.

Nevertheless our findings suggest that local authorities participate with a limited degree of independence, are considered mostly as cost centres within the overall public financial expenditure architecture and that the control of budget and reporting activities is scattered among a number of governmental bodies and the process is even more fragmented and complicated because of the nature of the e-government reform activities (Ciborra 2005; Ciborra and Navarra 2005). These are often associated with acts of foreign policy and diplomacy at one level, but also aim to deeply transform the current way of working of the bureaucratic structure and the procedures of the government at the local level. Therefore, they necessarily involve regulatory, enforcement and monitoring institutions alongside those that are being re-engineered sometimes at a scale that goes beyond the boundaries of the nation state.

5.3 The Public/Private Networks

There are four relevant public/private networks (in alphabetic order), these are AMIR, Int@j, the PMO and REACH. See table 2 below for a detailed graphical presentation of their mission, programmes and activities. Between 2002 and 2006 AMIR^{††} has been an important public/private network providing support to improve business management, private sector policy, the development of financial markets and the development of the private sector locally via technical assistance, training related activities. AMIR is currently being replicated and continues to share best practices throughout the region (USAID 2011). Supported by USAID, the focus of its programmes is on microenterprise, business management, information and communication technology, and private sector policy reforms with linkages in support of a number of local initiatives and non-government organisations, which include REACH.

^{††} For further details please visit: http://jordan.usaid.gov/project_disp.cfm?id=88

The REACH initiative (Regulatory Framework; Estate; Advancement Programs; Capital; Human Resources Development) is supported by the USAID funded AMIR programme and was launched by King Abdullah himself in 1999. REACH's main task is to mobilise private sector resources and define bottlenecks and challenges to the creation of a world-class IT industry in Jordan. According to Issa Gammoh, a manager working at the Jordan Investment Board, REACH is a consortium of 138 core companies involved in services and software development supporting the goals of the e-government initiatives at two levels; for the localisation of software applications and to develop an export market for software and ICT services in the region. REACH resides under the patronage of the Ministry of Information and Communication Technology (MoICT) and is linked with Int@J and AMIR.

The e-government Programme Management Office (PMO) of the MoICT is the major entity responsible for the government's use of ICT including policy, planning, budgeting, as well as for the e-accounting and e-procurement pilot project coordination and implementation. The PMO, which has been established within the MoICT to manage the programme, sets the policies and standards and supervises the implementation of infrastructure projects and their interoperability framework. The PMO enforces the yearly e-government specific budget allocations for all other department and assesses also the business viability of e-government initiatives. However, the structuring and implementation of an e-government initiative is the responsibility of single owner departments and ministries, which are expected to comply to the standards set by the PMO, which in turn coordinates with the Ministries of Planning and Administrative Reform. The Ministry of Administrative Reforms is responsible for the policy formulation and coordination of all reform processes.

The PMO develops plans for initiatives whose time frame ranges within and beyond 3 years, enforces a standard procurement process and tools and uses a common project management methodology to monitor the status of the initiatives reporting directly to the MoICT (MoICT 2003). At the same time, the MoICT manages all of the e-government projects assigned by the PMO^{‡‡} and is in the process of determining the standards to be used for products and services to be integrated with the national e-government infrastructure for the fast-track projects, the development of a portal and the secure government network. Interestingly, as far as the initiatives within the patronage of the MoICT are concerned, great emphasis is given to the private sector to conduct the implementation of the initiatives. For instance, not only have the management of the operations centre and the call centres been outsourced to two local providers, but it

^{‡‡} During the design stage early in 2002, various ministries were involved in supervising and monitoring the projects for e-Jordan: the Ministry of Planning for the initial selection phase, then the Ministry of Industry and Trade for the review and implementation stages together with the MoICT. The situation has changed since the creation of a single office, whose main function is to provide support and capacity to coordinate, manage and implement the national e-government Initiative: the Project Management Office (PMO), which is in charge of the procurement process, as well as the initiation and implementation of the general e-government initiatives.

expected that the role of the government will just be to set up the framework of monitoring and approval of the requests for proposals (RFPs). According to a senior official involved in the national e-government programme, after these are agreed, then the private sector takes over.

Public/Private Networks	Description	Mission	Programmes
AMIR	Improving business management, private sector policy, microenterprise, ICT, financial markets development	Creating a globally recognised Jordanian economic success story	ICT initiatives (Policy, E-government, Industry), ICT Forum, Open Source Workshop, REACH, Women in ICT
REACH	Defining the bottlenecks and challenges to advancing the development of a world class ICT industry	Bolstering Jordan's IT sector and maximising its ability to compete locally, regionally and globally	Regulatory Framework, Estate, Advancement Programmes, Capital, Human Resources Development
PMO (Part of MoICT)	Setting up a framework of monitoring and approval for Requests of Proposal (RfPs)	Creating sound management and organisational design to guide projects	Initiating and implementing general e-government initiatives
Int@j	First resort to access government's RfPs for local and foreign companies	Facilitating regulatory framework for the creation of a Jordanian world class ICT industry	Promoting legal change, minimising challenges and bottlenecks for the creation of a Jordanian world class ICT industry

Table 2: Public/private networks, description, mission and programs.

Finally, Int@j is the trait d'union between the local private sector, the multinational companies involved at various levels in the e-government initiatives and the MoICT. According to Int@j's CEO (Abdelrahman 2004) they share the same goals and objectives as the MoICT, coordination and cooperation between them is ongoing, working together

to avoid duplication and to bridge the advancements is done via the MoICT with the private sector. Int@j emerges as the first resort of local and foreign companies to access the government's request for proposals, acting as a gateway to qualify their bids for approval. It also keeps a record of all the companies registered in Jordan in the ICT sector, encourages their coordination for the promotion of technology standards and informs them of/asks amendments to existing legislation to ease the approval of international standards and technology authentication (such as electronic signatures, and digital certificates).

6. Analysis: Challenges and Lessons Learned of E-Accounting and E-Procurement

At the time of our study the e-accounting and e-procurement projects had just been introduced as key e-government pilot projects before full scale implementation. However, according to a senior foreign consultant working at the MoICT, it has not been an easy task to move to the implementation phase in a number of e-government projects. The goal of creating these systems was not only to reduce the redundancies in the way in which the current (mostly paper-based) system works, but also to re-engineer and rationalise the process of public procurement and financial management making public financial management more accountable and transparent by joining up government ministries, agencies and departments while increasing access to and competition between suppliers to the government, similarly for the introduction of private sector management techniques and the adoption of an electronic system which allows purchasers and suppliers to contract with each other.

Yet, despite the punctual procedure for awarding and tendering of the projects linked to the e-accounting and e-procurement initiatives, in the words of the head of e-government operations at the MoICT:

“nothing is binding between the parties except verbal commitments and it is difficult to sign contracts on service level agreement”.

And the most common answer when we asked if a cost/benefit analysis was conducted to evaluate the feasibility of the various projects and initiatives related to the development of the large scale information infrastructure for public financial management:

Cost/benefit analysis... of what?

Also, the major spending clusters within the Jordanian government were still to be identified at the time of our study. When this is done a review of the current financial management and accounting techniques would follow to re-define the roles and responsibilities of the institutions involved in the process, their data exchange processes and the legal, procedural and administrative frameworks. And he continues that despite the formalization of the rules of good governance and the consequent development of public/private networks and other inter-organisational networks, the greatest challenge is still to:

“Define ownership of information and remove redundancies, update the information provided and the widespread habit of using alternative channels to gather the information required.”

Interestingly, although there is a considerable overlapping in the development of the infrastructure necessary for the e-government pilots, as well as for the intended regulatory and legal reforms, according to a senior figure of the United Nations Development Program greater impact could have been achieved if the efforts had been linked more consistently to each other, for instance, within the framework of a common programme approach.

Security is an important issue to understand both the relevance and the challenges associated with the introduction of e-accounting and e-procurement not only to ensure that protection against unwanted information disclosure, but also to ensure that processes, policies and the security management of the information stored in the systems are as robust as possible (Backhouse, Hsu and Silva 2006) also against breaches, loss or corruption whether caused by human error, hardware or software failure or other external causes. On a different level, any downgrading in the level of security of the region, may provoke the sudden evacuation of key experts and maintenance personnel (as happened recently with the Iraq war).

According to the last available data (Nakhle 2006) the e-accounting system was fully implemented only in the Ministry of Water and irrigation, at the Jordan Valley Authority and at King Abdullah University Hospital. On the other hand, the implementation of the e-procurement system has been more successful, although it has moved forward building on the completion of previous initiatives. Nevertheless, even if a fully fledged e-procurement system was planned to be established in 2010, to our knowledge neither the e-procurement portal, document management systems, workflow system and e-tendering system have been established.

This suggests that the gains from privatisation may be limited. For example, in Jordan a ‘simple’ product like the driving licence is in reality a security document, the issuing of which requires several authorities from various Ministries. For this reason, efficiency gains will result only if the Jordanian state reforms its inner workings and political purpose. And the possibility to fully digitise accounting and procurement to improve governance and resource control appears difficult because of the way in which these profoundly affect the political nature of this type of information exchange (between the individuals holding and controlling such information).

Control is defined here broadly to encompass both control derived from formal ownership of the privileges of the mechanisms of hierarchy and control stemming from authority relations embedded in inter-organisational structures that define those mechanisms. An exchange strategy refers here to managing resource interdependence existing between inter-organizational networks and encompasses (a) the design of technology which integrates security into business processes, which allows transacting with as many exchange partners as possible within the same organizations forming the

inter-organisational network, thereby distributing dependencies across the partners while minimising registry information and related functions; and (b) relationship strengthening within the same organizations forming the inter-organisational network, which implies continuously transacting with prior exchange partners, thereby forfeiting greater independence for the security inherent in a sustained, trustful relationship for either markets, hierarchies or network like organizational attributes.

Public/Private Networks			
Challenges	REACH	<u>It@j</u> & PMO	AMIR
<i>Security</i>	Protection against unwanted information disclosure, ensuring that processes, policies systems should be as robust as possible	Formal definition of mechanisms of hierarchy and authority	Design of technology which integrates security into business processes
<i>Coordination and Compatibility</i>	Prove rights for entitlement to services	Enrollment/record identity	Minimise registry information and related functions
<i>Organisational Attributes (i.e. the 'installed base')</i>	Negotiation & participation	Effectiveness and efficiency in meeting explicit goals	Markets, hierarchies and networks
<i>Structural Characteristics</i>	Competitive Structures	Control Structures	Exchange Structures
<i>Public/Private Network Interdependencies</i>	Federated	Concentric	Platform

Table 3: Public/Private networks and challenges of e-accounting and e-procurement

As it is possible to see from table 3 summarising public/private networks and challenges of e-accounting and e-procurement, the practical challenges for the implementation of e-accounting and e-procurement systems are therefore radically different from the level and type of impact of similar initiatives in the private sector since these key e-government pilots potentially affect (and area also affected by) the creation of institutions in support of an enabling policy environment, the support for social inclusion, institutional transparency and regimes for foreign investment and free trade at the supra-national level while at the same time facing the need to coordinate multiple integration points, different

pre-existing technologies, platforms and other legacy systems at the national and local levels.

Our findings so far thus reveal that the move towards the re-adjustment of the functions of the government and its transition towards good governance and a networked state face a number of challenges that do not arise from hardware and software engineering for the e-accounting and e-procurement initiatives, but from the features of existing cultural and administrative regimes of Jordan's public sector. Especially when these are perceived to uphold the public interest, for instance in the eventuality of sensitive information about the state and its citizens being shared in a database with non-state actors, in turn invoking burning questions of legitimacy. In such a context, national interests coincide with the needs of the various state and non-state actors involved, which are a loose congregation of tribes and de facto constitute a parallel form of government where the institutions of the nation state that have not modernised still exert a large degree of political influence (Navarra 2006; Navarra 2010).

In the words of a senior member of a consulting firm at the National Information Centre of Amman:

“Corruption (‘wasta’) is not going to be defeated by e-government, e-accounting or e-procurement the traditional organisation behind the web-page has not changed.”

While, another executive consultant's comment was that:

“In terms of culture, not machines, it is difficult to skip the last 20-25 years of development.”

Besides, it is not possible to talk about e-government initiatives in Jordan without also addressing the country's necessity of development finance and how the involvement of the international institutions influences the social, political and economic institutions of the state of Jordan. The structure linking the networks of the many state and non-state actors implicated in e-government initiatives offers for analysis a wide landscape of global and local interdependencies, what in table 3 we have called as federated, concentric and platform public/private networks, which will be addressed in the following section.

In Jordan such networks are the crystallisation of a social stratification resulting from a historical process of mediation. Today this constitutes the sphere of interaction of different communities pooled together, consisting of identifiably sovereign parts, which thus become the basis of power for the legitimacy of the state and thus to its capacity to promote social and economic progress. Some e-government services thus may not be fully privatisable nor fully marketable as it is found in a study done by Ciborra (2005) of the computerization of driving licences (and hitherto the risks of failure of implementation) in Jordan, whose findings are highly relevant also for the present case study. Ciborra's (2005) study shows that e-government innovations stumble upon the complex network of state government controlling mechanisms pointing out that the

ordering character of information technology extended to global programmes such as e-government (e-accounting and e-procurement) does not concern only the Jordanian government, but it is a paradigmatic example of the world order at large.

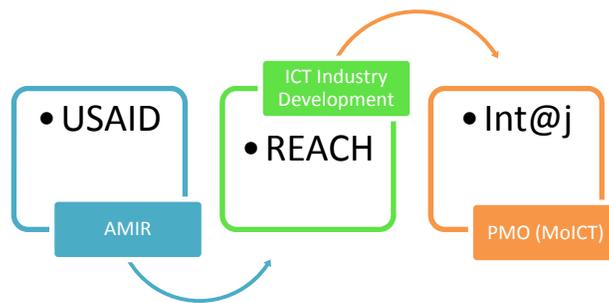
7. Discussion and Implications for Policy and Practice

Our findings suggest that whereas the sense of break down or crisis in the welfare state seen in many developed countries might be seen as one consequence of the fundamental shift in the contract between capital, labour and the state implied in the transition from government to governance, for the developing world this presents a formidable challenge in responding to a new reality especially as the government may be (as in the case of Jordan) the largest producer and consumer of goods and services.

The main design and integration challenges which are identified from our empirical findings are: a) the re-definition of organisational boundaries to allow for greater cross-organisational interaction and interoperability while balancing also the need of border security; b) the extent of (organizational, technical and financial) coordination and compatibility between the members of the network; and finally c) the influence of pre-existing organisational and environmental characteristics; and d) global/local interdependencies. The above issues lead us to discuss the following implications for research and practice communities. In table 3 we present our findings regarding public/private networks based on the Jordanian e-government initiative and the e-accounting and e-procurement pilots.

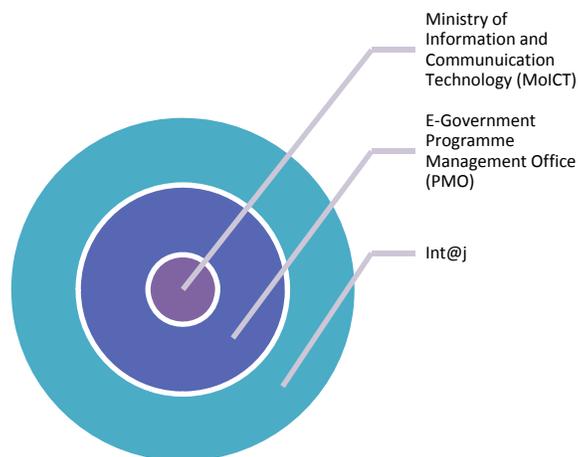
Organisational attributes and structural characteristics such as the installed based can be explained by either competitive, control or exchange structures. Abstracting our findings from the case study to the wider role of state governance it is possible to identify the following public/private network configurations. REACH operates as a federated public/private network for a number of initiatives related to the development of the IT industry in Jordan, including Int@ and AMIR. The former being a Jordanian whereas the latter is a project of the United States Agency for International Development. Federated public/private networks may be described as distributed structures where negotiation among and participation of its constituents are the essential underlying characteristics. The state here is implicated in the construction of competitive boundaries, both at the national and local levels. Yet the autonomy of each of the participant organizations is respected while recognizing their interdependencies, which as previously mentioned transcend national boundaries (see figure 2).

Figure 2: REACH: a federated public/private network



Concentric public/private networks, such as Inta@j and the PMO for example, are involved in the coordination of existing and new hierarchies and markets, combining in different ways service coordination mechanisms based on the degree of formalisation and the inclusion and exclusion of their members. Concentric networks are based on the effectiveness and efficiency in meeting explicit program goals and therefore typically present for analysis a control structure. In figure 3, It@j and the PMO are represented as concentric circles of the MoICT since they both @j represent public/private networks sharing the same set of objectives therefore providing a solid base for concentric information exchange and security. In this configuration, although a central actor is recognized within the MoICT, it is possible to appreciate the existence of an informational space which crosses organizational boundaries, allowing the focal organisation to exert control over the behavior of the organizations within and outside it.

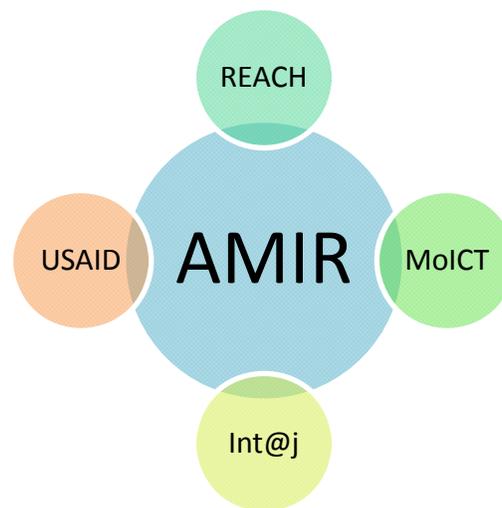
Figure 3: Int@j and PMO: a concentric public/private network



Finally platform public/private networks, such as AMIR, can be explained with the concept of platform organisation developed by Ciborra (1996). Platform public/private

networks exist around a ‘meta-organization that moulds structures, and routines shaping them into well-known forms, such as the hierarchy, the matrix and even the network, but on a highly volatile basis’. AMIR is one such example because as explained by a consultant involved in the program, it had changed both name and focus since when it was launched in 1997 and it has now been discontinued. We should stress that the notion of what constitutes a network within platform organisations is different from the notion of network as understood by transaction costs economists. In transaction cost economics, networks can be described as intermediate or hybrid forms of governance (Thorelli 1986; Powell 1987; Podolny and Page 1998); or as networks of organizations which act as a group of business units coordinated through a system of market mechanisms (Snow, Miles and Coleman 1992); or as an alternative form of coordination with respect to a hierarchical organizational structure (Coase 1937; Williamson 1975; Malone, Yates and Benjamin 1987; Powell 1987).

Figure 4: AMIR: a platform public/private network



However, in platform public/private networks formal interactions and transactions and routines are present together with an higher order context where the re-architecturing of structures is frequently carried out in a way that is ‘structured yet chaotic’ based on the continuous recombination, interlinking and re-deployment of organisational resources, tasks, activities and processes constantly creating new creative interdependencies. Thus, within the networks created over platform organisations the aim is to seek the intrinsic dispositions of resources so that they can be recombined when needed more quickly and effectively. The state here is implicated in the construction of competitive boundaries, both on the national level (e.g. through international policies) and on the regional and global level too.

In sum, governing public/private networks for public financial management looking especially at the case study of e-accounting and e-procurement, reveals a challenging object of study. To be sure, introducing e-accounting and e-procurement also means re-defining the role and responsibilities of the nation state at 'a distance', not only across different legacy systems, but crucially also institutional domains and territorial jurisdictions. Based on our findings we have illustrated three configurations of public/private networks that have taken form in preparation of the full scale transfer, development and implementation of the e-accounting and e-procurement e-government pilots.

We have also discussed various challenges that the above entail, which should be considered while designing and evaluating large scale information infrastructures and innovation in the context of the public sector of an Arab country like Jordan before full scale implementation, something that we believe is not typically addressed neither by private sector development methodologies and evolution frameworks nor by traditional accounting and information systems evaluation methodologies of the like of COBIT. The transition towards e-accounting and e-procurement for public finance and management in Jordan is highly indicative of the transformations taking place in public sector governance as it move towards a 'network state' and characterises the situation that a number of developing countries face today as they struggle with similar initiatives of modernisation. Crucially, very little has been written on this subject to shed light for both future research as well as to guide the policy and practice based on rigorous empirical research.

8. Conclusions

Our research questions were: what challenges and what type of public/private networks emerge for the transfer, development and implementation of the e-government pilots for public financial management? What lessons can be learned from the experience of Jordan as it tries to move towards a networked state? And finally, what are the implications of this experience for future research and guidance to practice?

We find that the e-accounting and e-procurement e-government pilts are implicated in processes of transforming relationships previously politically negotiated within the state and bureaucracy into transnational public-private networks changing not only the boundaries between public and private and, but also the geographical boundaries of the state. This may involve, for example, the marketisation of various functions of the state and a move towards a new regime based on contractual agreements, outsourcing of government services and a more overt role for the private sector (not just in terms of models or best practices) for service delivery. Three possible configurations of public/private networks emerging from the case study were identified as federated, concentric and platform.

As a consequence, such programmes can be seen as introducing new distinct processes of technologically enhanced activities affecting established regimes for the accounting, measurement and recording of transactions, but beyond influencing equally traditional organisational principles, norms, rules and procedures. The present study thus reveals that nation states are a useful construct for analytical purposes, but in reality understanding

their capacity for action takes us beyond their national boundaries. From the evidence presented in the case study, the state is fleshed out as a rather elaborate network of controlling institutions upon which the modernisation processes introduced by initiatives like e-accounting and e-procurement stumble upon as they promote real change in existing forms of authority, governance and power.

Therefore, we should stress as learning from this study that an overemphasis on private sector methodologies of evaluation and auditing of ICT and accounting systems alone underestimates the political, cultural and social aspects involved, failing to grasp the linkages that such new phenomena have within the evolving technical, institutional and political realms of governance transcending the boundaries of the nation state. This draws our attention to the subtle dynamics which (as we have seen in the case of e-accounting and e-procurement) link together institutions and organisations *across* different contexts and domains, including state and non state actors coordinating their activities in a *glocal* institutional context where their responsibility is configured within a much wider (and yet ultimately uncontrollable) network of institutional activity, which presents a number of challenges to govern public/private networks. Thus the case study of e-accounting and e-procurement initiatives (traditionally a crucial area of government's resource management), shows that the capacity of the government to retain control within the changing boundaries and governance of the state should not to be addressed just by looking at how the government can control and regulate directly its development, rather public policies for the administration and organisation of the state should steer and enable of networks that can achieve the goals of state governance.

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