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ROOTS OF PUBLIC-PRIVATE RELATIONSHIPS IN E-GOVERNMENT: ORGANIZATIONAL AGENCY IN PRIVATIZING DANISH STATE DATA MANAGEMENT

Abstract

This paper analyzes the process leading to the privatization in 1996 of *I/S Datacentralen af 1959* (DC), the Danish central government's bureau for data management and other IT services. It compares this development to salient features of similar changes in the UK and Sweden. The DC privatization established the current relationship between government and IT businesses in Denmark, and hence was a significant contribution to the present organization of e-government in that country. The paper proposes that the privatization of DC was the product of the organization's own decisions in the face of varying pressures from new technology, growing competition, labor disputes and infighting among governing parties. DC drove itself toward private ownership because that provided the greatest guarantee of organizational survival and continuity. Hence, changing technologies and powerful private actors were influential but not sufficient to determine the organizational outcome. The analysis thus follows a long tradition in public administration that identifies public bureaucracies' internally generated motives as significant drivers of organizational development. It also underscores that the present e-government order in many countries is likely to be structured by historically rooted processes and outcomes.

INTRODUCTION

Several scholars have noted that the relationship between government and private IT businesses is a crucial component of the current e-government order (Taylor, 1999; Dunleavy, Margetts, Bastow, & Tinkler, 2006). But little has been said about how or why such relationships emerged (Yildiz, 2007). This paper looks closely at a privatization of government data management at the dawn of the e-government era to explore the forces that shaped the outcome. In addition, where much work on e-government has focused on the US experience, this analysis explains the introduction of

private firms into state data management in Denmark and offers comparisons to corollaries in Sweden and the UK.

Investigating data management privatization is an opportunity to clarify the background to emerging relationships that undergird e-government's requirements for data transactions, and the "information polity" more generally (Taylor, 1999). Organization and relationships are intertwined: as organizations have changed to accommodate new information technological possibilities, relationships between involved actors can change. The new relationships can, in turn, characterize the novel system. Hence, to understand the dynamics that the present institutions of e-government set in motion, it is important to understand how they arose.

In particular, the paper analyzes the historical record culminating in the sale (privatization) in 1996 of the Danish government's central bureau for data management (*Datacentralen* – DC). The DC privatization had important consequences: key data of the Danish state, such as registries of residents, drivers' licences, tax data on individuals and businesses and various military data, remained publicly owned but became privately managed (with regular tenders for new contracts). That is, at the dawn of the e-government era the organization of the Danish state's data management was transformed from a hierarchy to a market (Williamson, 1975).

Other countries also re-organized their data management by engaging markets in place of hierarchies. As examples, Sweden was ahead of Denmark when it privatized its central state data management bureau in 1992. Government departments in the UK began to competitively tender their data management in 1991. But in each of these larger countries, data management was more fragmented at the outset, with different departments managing their own data centers and following their own paths toward (or away from) organizational transformation. These divergences suggest that features of the existing data management organizations play key roles in the re-organizations of data management. Denmark is useful as a case study because a single organization managed most state data prior to the 1996 privatization. This simplicity means that the paper length format is

adequate to explaining the background to the Danish state's contemporary use of private firms to manage its crucial data.

The paper supports that technological change was a necessary precursor of organizational change in data management. But the analysis also shows that a sufficient explanation of the Danish privatization involves what the organization itself did – and how it was able to act independently rather than being entirely bound by hostage to outside forces. The account thus differs from political explanations of e-government organization that mainly emphasize the importance of external actors such as businesses and consultants (Horrocks, 2009; Dunleavy, Margetts, Bastow, & Tinkler, 2006). By returning to what public organizations do for themselves this contribution to e-government studies echoes a long record of findings in public administration scholarship that show how and why government bureaucracies act by and for themselves (Niskanen, 1971; Dunleavy, 1991; Maor, 2011). It differs from many of these earlier works by showing that the driving force in DC's privatization was organizational survival rather than senior bureaucrats' self-aggrandizement.

The next section describes the extent of contracting-out of data management Danish central governments and contrasts it to developments in the UK and Sweden. The historical case analysis and discussion of the DC privatization are presented subsequently.

CONSTANTS AND VARIATIONS IN PRIVATIZATION AND CONTRACTING-OUT OF STATE DATA MANAGEMENT

Central governments in three closely located but administratively dissimilar countries – Denmark, Sweden and the UK – all altered their respective organizations of data management in the early to mid-1990s by moving operations from centrally directed bureaucratic organizations to contractual relations between purchasing agencies and departments on one side and private providers on the other. These developments varied in the details and scopes between the countries but shared the transformational direction away from hierarchies and toward markets. The data bases and related

systems that were thus re-organized are the systems that the governments still use to support a great range of e-government services.

Taking each case in turn, *Datacentralen* (DC), the Danish government's central agency for data management and IT services, was established in 1959 as a joint venture between the state and municipal governments. Legally it was an independent organization with its own managing director and board. In practice, DC operated for most of its existence like an agency of the Finance Ministry, which dominated the board. It even used civil service wage scales until the 1990s (Togsverd, 2005; Østergård, 2005). The formal status of the organization began to change in 1983 when a new, Conservative-led government abolished its formal "monopoly" on supplying state organizations with IT-related services. In several stages after 1988 the organization was transformed into a corporation and became partly owned by Maersk Data, a private company, in 1992. DC was finally sold in its entirety in 1996 to Computer Sciences Corporation (CSC), a US-based company. The privatization meant that DC's existing business relationships, principally as the data base manager for all Danish central government departments and agencies, were transformed into contracts between the government and CSC. That is, major portions of Danish state data management were effectively contracted-out due to the 1996 transaction.

In the UK, IT was seen into the 1980s as a means to greater operational economy (Public Accounts Committee, 1987; Bellamy & Taylor, 1998). Individual departments with extensive IT applications, notably the Inland Revenue (IR) and the Department of Health and Social Services (DHSS), built up in-house, specialized agencies for handling departmental IT needs. The departments often made extensive use of costly private consultants (National Audit Office, 1984; Horrocks, 2009), in part because they continually had difficulty hiring sufficient numbers of specialized IT personnel (Public Accounts Committee, 1984). Despite these shortages, the IT dependent departments maintained policies of employing IT staff directly rather than contracting-out IT-related services (National Audit Office, 1995).

By the early 1990s, however, the large UK state users of IT began to systematically contract-out parts or all of their data management operations in place of an earlier practice of hiring consultants to fill gaps in manpower. Mandatory competitive tendering entered data management in 1991 (following the publication of the government White Paper “Competing for Quality” in November of that year). For instance, by mid-1994, 1900 of IR’s 2250 technology staff had been transferred to EDS, the private contractor (National Audit Office, 1995). By mid-1995, the DHSS’ IT bureau had transferred 1600 employees (one third of its total) and four-fifths of its assets (by book value) to three different private companies (National Audit Office, 1996). The election of “New” Labour in 1997 brought further turns to market for state IT services, often in the guise of Private Finance Initiatives (PFIs). Departments including Transport, Works & Pensions, the Foreign Office, Defense and Education all made use PFIs to overhaul or purchase new IT services (admittedly, mostly not directly related to data management; (HM Treasury, 2012). Effectively, while each UK government department followed its own path rather than the unified state path followed in Denmark, they trended toward moves from hierarchies to markets in data management and other IT services during the 1990s.

In Sweden as in Denmark, much of the state began to rely in the 1960s on one central provider of data management and other IT services (*Datacentralen för Administrativ Databehandling* – DAFA). Unlike in Denmark, however, key data-intensive authorities established their own computing capacities, including the national statistics office (*Statistiska Centralbyrån* – SCB) and the tax authority (*Riksskatteverket* – RSV).

DAFA was an independent government agency in its first decades (a common organizational form in the Swedish state). DAFA’s formal status changed in 1986 when it was incorporated. Though fully state-owned, DAFA now had a board of directors and it was notionally divorced from the data collections it managed. DAFA formally became the ‘provider’ while database owners became ‘purchasers’. In 1992 the Swedish government initiated the sale of DAFA, which was finalized in 1993 when France-based SemaGroup took over. As would happen in 1996

in Denmark when DC was sold, the DAFA privatization meant that most Swedish state agencies came to depend on private suppliers to meet their systems development and data management needs. However, SCB and RSV followed their own paths, retaining their data bases and computing capacities in-house rather than contracting-out in the mold of DAFA or their Danish and UK counterparts.

The contours of the data management and IT services privatization and contracting-out in three national governments reveal that such changes were closely linked to individual organizations. The coincidence of Danish organizational and state IT transformation hinged on the fact that DC provided the key data management functions to the entire state when it was privatized. In contrast, individual UK departments and agencies each followed their own paths, and in Sweden the DAFA privatization did not mean that SCB or RSV followed suit.

This evidence shows that accounts of government-business relations in e-government are insufficient if they rely just on national or purely technological explanations. National dynamics alone, such as powerful business interests or institutions, have difficulty telling us why individual organizations have followed individual destinies, including some toward and some away from markets in Sweden. IT is similar everywhere and cannot explain why, for instance, UK authorities chose to contract-out parts of their functions while Danish and Swedish authorities were sold off, and why other alternatives, such as simply closing down the state shop, are not in evidence in data management. Powerful actors, institutions and technological change are not doubt important, but they evidently do not explain the various forms that government data management took in its moves to markets.

Understanding the current relationships between IT businesses and governments may require analyses of the transformations at the organizational levels that created them. The next section analyzes the Danish case, the DC privatization, to uncover its intra-organizational logic and to assess whether it explains parts of the outcome (i.e., privatization) that are not easily understood given changes in IT and the involved external actors and institutions.

ENGINES OF ORGANIZATIONAL CHANGE: TECHNOLOGY DEVELOPMENT AND ORGANIZATIONAL AGENCY

A simple narrative of change in data management organization can begin and end with technology. For instance, when e-government emerged in the mid-1990s, several governments had established the essential backbone of interlinked and networked databases. Large collections of data, such as those held by nation-states on their citizens and other units, must be gathered, updated, stored and distributed to users. Such data management tasks once relied on large and fragmented stores of paper files, manned by clerks (Bellamy & Taylor, 1998, pp. 33-63; Johansson, 2004). Electronic computing changed requirements. Files had to be converted, first to punchcards and then to magnetic and other digital storage media. Computers also made new governance options possible. For instance, information-based governance systems, such as tax withholding and resident registries, depended entirely on data management that used electronic files and computers. In the 1960s and 70s these tasks required physically large and expensive (mainframe) computer systems. As computing power became cheaper and more widely diffused in subsequent decades, digitized data management became increasingly feasible to contract-out to the private sector and to decentralize within government hierarchies.

Hence, governments' large data collections could be organized and run in a variety of ways that fundamentally depended on the existing computing technologies. As IT evolved, new options for housing, using and networking data collections became available. As new options became available, old organizations – the skills assembled and the hierarchies that ordered them – could be outmoded; simply, some organizations could not manage the new IT as well as others. Existing data management organizations then adapted or disappeared.

The link between technological and organizational change underscored by the simple narrative can be important to keep in mind when seeking to understand how and why data management, and thus e-government, is organized as it is. But technology is not alone –

organizational change is not frictionless nor easily determined. As other scholars have shown, external private actors can be important influences on what governments choose to do to receive IT services (Yildiz, 2007; Horrocks, 2009; Dunleavy, Margetts, Bastow, & Tinkler, 2006). The account in this paper takes a third tack by focusing on the autonomy of choices made by an existing data management organization in face of pressures from changing technologies, external actors and other factors. This follows the tradition in public administration scholarship that emphasizes what government organizations do for and to themselves. The presented analysis explores whether DC's agency itself played a decisive role in steering the entity toward privatization – and away from alternative re-organizational fates. It posits that such decision-making autonomy can be related to the institutional set-up – or the founding moment – of the organization.

Following Mete Yildiz' recommendation (Yildiz, 2007), the case analysis in the following section uses the historical record to explain existing government-business relations in e-government. The analytical strategy is to follow the approach developed in historically rooted analyses of politics (Thelen & Steinmo, 1992). It proceeds chronologically and pays particular attention critical moments that structured how DC itself would and could react to its environment, or which altered DC's organizational trajectory. The account pays particular attention to the enduring institutions of the DC organization and to powerful actors that could intervene in its operations and prospects.

THE DC CASE: HISTORICAL PROGRESSION FROM GOVERNMENT FUNCTION TO VENDOR

The Foundational Roots: Independent Management, Owners' Conflicts of Interest, and Task Overreach

Datacentralen (DC) was established in 1959 to provide electronic computing for the Danish central and municipal governments (Olsen, 1984). Computers at the time were large, expensive and difficult to operate. In turn, the government budget was limited and there was little qualified IT

personnel available. Hence, feasibly using electronic computing in 1959 meant pooling the resources of the entire Danish public sector.

The first choice at DC's founding that proved critical to the organization's future re-organization was to create it as a partnership (*interessentselskab*) rather than as a traditional government agency. The organization's day to day operations were managed by an executive management that answered to its board rather than to the ministerial hierarchy. The leadership, with board approval, was empowered to steer how DC organized itself around its tasks. By the mid-1980s, DC management was also deciding which activities DC would involve itself in. The management's independence would also mean that it had significant influence on how the organization's ownership was restructured in the early 1990s.

A second consequence of DC's partnership structure was even co-ownership by the central government and the municipalities. The state was represented by the Finance Ministry, which also had the chairmanship. After 1970, municipalities were represented by their national association. Each partner had five board seats (the composition was changed in 1984, when the total seats were expanded to 11, and the state occupied the new seat and hence a permanent majority). When DC's first computer arrived from the supplier (IBM) in 1962, the municipalities had begun to establish their own electronic computing facilities, organized in a separate venture called *Kommunedata* (KMD). But DC remained a partnership until its incorporation in 1992. The state in practice governed DC because it was by far the dominant user and also held the chairmanship (and eventually a deciding vote). But the municipal members on the board had full access to DC's strategic considerations and plans. By the early 1980s, this made management difficult as KMD began to exert pressure for work that had traditionally belonged to DC; DC's management came to view its municipal board members as potential spies for the opposition. By the middle of the decade, real strategic meetings would be held within the Finance Ministry and away from the board's view, to protect sensitive management information and decisions (Togsverd, 2005). Hence,

the tension created by the partnership structure made a DC ownership overhaul increasingly pressing as the 1980s progressed.

Finally, the founding mission that had seemed rational in 1959, to provide all IT services to all of government, created a diverse set of tasks that the organization had increasing difficulty managing as IT developed in the subsequent decades. By the 1980s the organization was divided into two divisions. The data management division took care of the large data bases that DC had created in the 1960s and 70s and had since managed; good performance relied on stability and continuity of service rather than on keeping up with the latest IT. The systems development division provided other government organizations with new IT, by purchasing systems from manufacturers and servicing them. In contrast to data management, satisfying the new systems needs of ever more demanding ‘clients’ in departments and agencies became a continual source of problems for DC in the 1980s as it sought to compete against private vendors.

The most important projects completed by DC early on established the electronic storage and computing sides of several national data collections that still support critical functions of the Danish public sector. Beginning in 1965, DC provided the technological expertise for consolidating the registries of Danish residents from paper-based, municipal files to a single, electronic database (Nielsen H. , 1991, pp. 7-8). When the system went live in October 1968, each Danish resident was assigned a unique numerical identifier (CPR number). The CPR number and related data progressively enabled linkage of resident information across all public and many private institutions. The DC provided the electronic side of reporting, recording, storing, and distributing data in the CPR system.

From 1968 to 1970, DC developed the electronic side of the new withholding tax system. CPR provided an essential step toward enabling withholding taxation. But the conversion from mandatory tax payments by employees to withholding taxes through employers was itself a major undertaking for the authorities involved. The new system constituted a significant IT challenge. DC was tasked to provide the conduits and storage for the relevant information flows between

employers, employees and the state's tax offices. This included infrastructure for printing tax reports for tax payers, mainframes for processing calculations, and data entry facilities. By 1970, the Tax Department (*Skattedepartementet*) of the Finance Ministry had become the dominant user of DC's services. This would remain the case when the department became a separate ministry later on.

From the 1960s and onward, DC also played a significant role in aiding the police and the military in their respective uses of electronic resources. For the police, DC helped build and operate the national registries of automobiles and drivers' licenses, and national databases on criminals, criminal cases, and parking violations. DC subsequently housed and distributed this data electronically. There remains little openness about the work of the DC for the military, but that institution also figured as a core user of the DC throughout DC's existence.¹

In its first two decades, DC was a utility in the functional sense rather than a supplier in the market sense.² There was no sharp distinction between the departments that DC worked for and DC itself. Simply, state organizations used DC if they could apply electronic computing to their work. In turn, DC *acted* like a government agency, fulfilling the electronic computing function when called upon. DC employees were not civil servants. But in practice they were indistinguishable from the civil servants with whom they worked, both in terms of what they did and in terms of their pay scales.³ The tasks described above were all based on mainframe technologies. Once they were up and running, data users primarily wanted stable and reliable access and support for related functions. Hence, managing the data and related operations was a core part of DC's activities by the 1970s.

However, developing the systems themselves had meant that DC had built a separate capacity to create and implement new IT systems. This fit well with its mission. But it also meant that the staff assigned to systems development had to keep up with emerging IT if users would be

¹ (Østergård 2005), (Skovbjerg 2005).

² The DC head Jørn Ulrich Moos explicitly called for DC to abandon its tradition of behaving like a state agency. Jørn Ulrich Moos, in *I/S Datacentralen Af 1959 Igennem 25 År [DC through 25 Years]*, ed. Willy Olsen (Frederiksholm: Frederiksholms Bogtrykkeri, 1984).

³ (Jerlach 2004).

dissatisfied with less or could choose alternatives to DC's systems. In addition, as the scale, expense and difficulty of electronic computing decreased, many new applications became feasible. By the 1980s, this meant that more and more government departments and offices demanded IT that they themselves could house and operate. Delivering new systems development came to mean distributed PCs and PC-based solutions rather than just centralized mainframe computing. Since DC's systems development capacity had been built around mainframes, keeping up with PCs and the increasing demand for IT became a significant organizational challenge. The broad range of tasks that DC had been founded to accomplish had set it up to overreach.

In subsequent decades, and during the 1980s in particular, these three structural issues – independent management, conflicts of interest among some DC owners and task overreach – would become decisive in shaping DC's path toward privatization and away from alternative re-organizations. The path was shaped by interactions of these structuring factors and a series of interventions in the form of statutory changes and actions by particular, external stakeholders in Danish state IT. Each of these pivotal turns adjusted how DC acted – and how it did not act. Hence, the different pivotal moments can give indications of the motivation that drove DC's path to privatization – whether it was meant to optimize managers' positions (self-aggrandizement), to help the organization continue (bureau survival) or to do something altogether different such as save public funds (economization).

First Pivot: Competition from KMD and the End of Monopoly, 1979-1983

DC's status as a *de facto* functional agency was first challenged by KMD. In the 1970s, municipalities began to demand for KMD a share of the tax and residency data work that DC had handled exclusively. Municipal governments supplied and used much of the residency data that went into DC, and the tax centers that DC supported were regional. The argument ran that since much of the residence and tax data work was derived from local records, the municipal computing

organization should manage it.⁴ The confrontation led the Finance Ministry to create a “coordination committee” (*samordningsudvalg*) for public sector computing related work in 1976. Among its accomplishments was to settle what public sector IT work DC and KMD would do, respectively (EDB-Samordningsudvalget, 1979).

The imposed ‘coordination’ with KMD was DC’s first experience with a rival. Its management and the board members from the Finance Ministry also became focused on the possibility that KMD could ‘read their minds’. Five of the ten members of DC’s board of directors were municipal representatives, and two observers from KMD could attend board meetings. The suspicion was that these board members and observers would pass on anything they learned to ‘their’ IT organization; one interviewee reports that municipal board members were “careless” with information (Togsverd, 2005). KMD’s challenge meant that municipal board members became viewed as spies for the other side. Hence, for the first time in its existence, DC’s viability seemed to be jeopardized, partly due to its ownership structure. Managers and the Finance Ministry increasingly agreed that a new structure was needed. The board composition changed in 1984 when the voting membership was increased to 11 and the additional seat given to the state (De af Folketinget Valgte Statsrevisor, 1991). But this did not solve the conflict-of-interest issues related to information revealed at board meetings.

The force of competitive pressure was turned up significantly the Conservative coalition government led by Poul Schlüter came to power in 1982. As part of its 1983 “Modernization Program” introduced in 1983, the government formally abolished DC’s monopoly on providing (or mediating) IT and related services to state organizations. Gone were the days of ‘coordination’ where the world could be divided and overlaps removed between rival public organizations. Now DC’s department and agency interlocutors became ‘customers’ that could themselves choose between alternative vendors of new information systems or data management services. In a situation where IT was rapidly changing (as described previously, scale, cost and user skill

⁴ (Togsverd 2005).

requirements were declining), DC faced the serious prospect that it would lose its 'business' if it proved unable to deliver at the cutting edge, which in turn would be unattractive on price and technical quality.

Departments and agencies faced their own pressures to embrace and adopt IT, which in turn translated into demand for as well as new demands on DC's system development capacities. Renewal of technology, and particularly staying on the cutting edge of information technology in the Danish state, was a pillar of the Danish strategy for economic development beginning in the early 1980s (Nielsen N. C., 2009). Erik Bonnerup, a former Permanent Secretary of the Administration Department who was heavily involved in state IT-related issues during the late 1970s and 1980s, reports that the new government also engaged in "raising consciousness" of customer service and service quality in departments and among individual civil servants (Bonnerup, 2005). For DC in particular, Bonnerup notes that government analyses showed that it was expensive compared to analyzed private alternatives, suggesting that DC was taking monopoly rents – and that agencies and departments could gain from competitions for their IT work.

As the 1980s progressed, the competitive challenge to DC turned out to be most acute for the new systems development division. As described previously, this work was particularly vulnerable to the effects IT changes. Given DC's roots, it was strong in delivering mainframe solutions. But it could not retrain its staff or gain the skilled workers needed to compete on PC-based solutions. The growing demand for new PC systems added to the opportunities for private IT system vendors. In the course of the 1980s, Danish departments and agencies increasingly purchased from private firms rather than relying on DC for new IT.

In contrast, DC retained most of its data management customers. The many users of state data bases were satisfied with the reliability and stability that DC could deliver on its mainframe platforms and had little interest in taking disruption risks by shifting to a new provider. Principal clients, including the Tax Ministry, the police and military and the agency responsible for CPR, went nowhere though they had the same rights as every other state body to use competition in IT

services to their advantage. This meant that DC's data management division was far less affected by the pace and character of technological change.

Hence, open competition for DC combined with DC's ownership structure to create growing conflicts of interest on DC's board. DC's management and their Finance Ministry interlocutors saw these as an increasing problem during the 1980s, and concluded that a change in the ownership structure was important. This effectively opened the door to privatization (though the option could not be pursued during the decade because of national security concerns and political bargains discussed below as the 'fourth pivot').

In addition, open competition interacted with DC's broad set of tasks to create an increasing management strategic split between struggling for systems development work and contently relying on stable, bread-and-butter data management activities. Each managing director of DC during the 1980s had to choose how to make DC an effective competitor in the hot systems development markets while also maintaining the reliability and stability demanded by data management clients. These management choices would repeatedly expose DC to existential threats.

Second Pivot: Threats to DC's Viability from Finance Ministry Reaction to DC Loss and Client Reactions to IT Worker Strike, 1987

Willy Olsen, DC's chief executive since its founding in 1959, stepped down in 1982. This change was timely, coinciding with the change to the Conservative government that abolished DC's monopoly on state IT in 1983. The new leadership under Jørn Ulrich Moos articulated a new, commercially oriented direction as the pressure from rivals began to intensify.

The growing exposure of DC's activities to rivals coincided with a weakening hold of the organization on the cutting edge of information technology. The *raison d'être* of the organization could not remain the inconvenience, expense and complexity of using computers. As Moos explained in a strategic statement in 1984:

“Hardware prices have fallen dramatically through the years [of DC’s existence]. E.g., DC’s computing power has risen 5-fold in the period 1979-1984, whereas the cost of computers has fallen from 22% to 13% of the total expenses. That is why there is good reason to consider whether the economic and other advantages of a highly centralized machine pool continue to exceed the attending disadvantages such as lower operational stability and a lack of flexibility with respect to the customers” (Olsen, 1984, p. 67; author's translation).

In Moos’ vision, DC’s mission had become to compete with other providers of information systems. He foresaw the wide adoption of PCs, and extensive networking among them. He was keenly aware that computers were becoming smaller, cheaper and easier to use. He believed that DC would have to be able to handle demands for new technologies. In his words, DC should change “from a state authority to a service enterprise” (Olsen, 1984, p. 72; author's translation).

The option that Moos did not describe was to surrender DC’s systems development to rivals. Even though Moos recognized the technological shift away from the organization’s core strength in mainframe solutions, his management opted for a commercial strategy in a bid to preserve DC’s traditional role as both a developer of state IT and the manager of state data. The accounts were encouraging: new system development had grown from 20 percent of revenue in 1979 to 40 percent in 1984 (Olsen, 1984, p. 39). It would grow at a much slower pace in subsequent years, to about 50 percent of revenue in 1992 (Østergård, 2005). But the choice to compete with KMD and private providers of IT in new systems development kept DC heavily exposed to pressures from changes in technology.

The first key consequence of this exposure was in its labor relations. During the 1980s, market demand rose significantly for skills related to emerging PC technologies. Though IT workers at DC were primarily skilled in mainframe-related work (Nielsen N. C., 2009), they went on strike in the summer of 1987 to gain wage increases to match those in the market for PC skills (Togsverd, 2005). For a full month, Prosa (the IT workers’ union) and DC’s management could not agree on terms, despite aid from the national labor relations dispute broker (*Forligsinstitutionen*).

Finally, Parliament intervened on August 20 with legislation that imposed a settlement and ended the strike. In the month that the Prosa strike had lasted, operations of every major user of DC-managed data had been severely hampered. This included municipal governments administering social benefits, tax authorities, police and judicial authorities. The long and paralyzing strike meant that users could no longer take for granted that DC was a stable and reliable data manager.

The second key consequence of DC's continued exposure to pressures from changing IT was that DC in 1987 registered its first-ever financial loss. As part of its effort to compete in systems development, it co-founded a systems export company, Daisy, in 1983. Seeking to leverage DC's experience as the Danish state's information systems developer, Daisy contracted with some foreign governments to deliver user-ready solutions. For instance, Daisy used the CPR mold that DC had developed for the Danish government in the late 1960s to deliver a complete resident registry system to Thailand and Kuwait in the mid-1980s. But Daisy lost money on its contracts with the foreign governments, and these losses had to be covered by DC (Togsverd, 2005). In addition, DC's system development division had lost money on offering "distributed solutions" including "systems that could be performed on a customer's own machines" (De af Folketinget Valgte Statsrevisorer, 1991, p. 15; author's translation). By 1987, on total revenues of DKK 874 million, it had a net loss of DKK 38.5 million (Datacentralen I/S, 1987). An eventual review by the state auditors concluded that the loss was due to massive write-offs accumulated from earlier years and costs of the long labor conflict in the same year (De af Folketinget Valgte Statsrevisorer, 1991). More immediately, the loss created severe consternation in the Finance Ministry, which was obliged to cover it. Through the board, DC's management was directed to return the organization to profitability (Østergård, 2005).

The events of 1987 put a temporary end to the commercial orientation of DC. After the failures during his tenure, Moos was relieved of duty as DC chief executive in late 1987. He was replaced by a Finance Ministry career civil servant, Hans Henrik Østergård. Østergård eyed two critical challenges (Østergård, 2005). The first was to move DC beyond the crises of 1987. The

second challenge was to finally resolve the conflict of interest within the board of directors because DC's failures meant that the competitive threat from KMD loomed larger than ever.

Initially it seemed to the new management that re-integration with the state would offer solutions to both challenges (Østergård, 2005; Nielsen G. , 1996, p. 18). DC had historically acted as an agency. Management believed that making DC a real government agency would place it once more as the functional IT-services go-to for departments and agencies. In addition, it would eliminate the existing partnership structure that included municipalities, and hence remove the threat that KMD would gain inside information on DC. But the push for agencification was blocked by the board members from the Finance Ministry. The government was preparing to renew its push for NPM-style reforms, particularly within central government (it eventually published an "Action plan for de-bureaucratization" on December 13 1988). The Finance Minister spoke publicly of privatizing several state-owned organizations, including DC. Østergård and his management colleagues were forced to shelve ideas for further integration with the state.

DC now had to incentivize its clients to remain (Østergård, 2005). New ventures, such as the push for exports, were abandoned in favor of an exclusive focus on the Danish public sector. The immediate concern was the fallout from the 1987 service collapse. DC's core clients had to be reassured. Management focused on reducing the risk of future service interruptions. By reestablishing its reputation for reliability, DC would give its core data management clients no cause to seek other providers. This would shore up DC's functional and financial viability. However, DC was blindsided by a new existential threat originating from infighting among government ministers. This new threat persuaded DC's management that privatization would be the best course of action, for the sake of preserving the organization.

Third Pivot: Intra-Coalitional Rivalries Put Pressure on DC Viability through Pricing, 1989-1990

In 1989, a new round of general government spending cuts was putting pressure on the finances of DC's largest client, the Tax Ministry. As described previously, Tax was also DC's long-standing partner in several data management projects (it was the direct source of 43% of DC revenues in 1988 (De af Folketinget Valgte Statsrevisor, 1991, p. 13). To meet its new savings targets, Tax demanded significant price reductions from DC in 1989 and 1990. As a consequence, DC's net earnings dropped from DKK 78.5 million in 1989 to DKK 23.0 million in 1991 (Nielsen G. , 1996, pp. 22-23). Given the fallout from DC's net earnings loss in 1987, its management viewed a significant drop in prices as another existential threat to the organization (Østergård, 2005).

Crucially, Østergård and his management team interpreted the Tax demand for lower prices as a result of cabinet infighting rather than of real economic need (Østergård, 2005). As he retold the events, the new Tax Minister, Anders Fogh Rasmussen, had lambasted the Finance Minister, Palle Simonsen, for doing too little to reduce state spending in the late 1980s. The Prime Minister, backing Fogh Rasmussen, called on Simonsen and the Finance Ministry to work for greater savings within the state. In retaliation, Østergård believed, Simonsen had concentrated spending cuts at Fogh Rasmussen's Tax Ministry. Infuriated by the targeted attack, Fogh Rasmussen then prodded his planners to target the fees paid to DC because its board was controlled by the Finance Ministry. Østergård believed that had DC been independent of the Finance Ministry, Tax would not have demanded reduced prices.

Hence, DC's viability had been threatened once again due to its ownership structure. But where the problem in the past had been competitive disadvantage because KMD could gain inside information, the problem now was the state's stake. This led Østergård and his team to conclude that public ownership in general was the problem they had to overcome rather than just the municipal partnership – in order for their organization to survive (Østergård, 2005). Management's goal by 1990 had become to look for chances to remove DC from public ownership altogether – that is, to seek privatization.

Fourth Pivot: The End of the Cold War and Liberalization of Privatization Restrictions, 1990-1993

For many years, DC's commercialization was attenuated by national security concerns and political compromises. In particular, politics bargains in the 1980s placed strict limits on privatization and security concerns constrained any decentralization (including outsourcing) of data management. However, with the end of the Cold War in 1989-90 and the election of a '3rd Way' Social Democratic government in 1993, the strict constraints were removed.

In organizing state data, security has continuously been a salient parameter. Niels Christian Nielsen, an IT consultant who took part in several discussions within state committees in the 1980s and 1990s on how to manage various databases, reports that security concerns remained critically important (Nielsen N. C., 2009) throughout. To keep DC-managed data secure, properly controlled storage and access were critical. The question was always how this had to be done in order to maintain sufficient security.

The threat of foreign invasion was a major security variable since much state data could be exploited to trace potential resistance leaders and other national defense resources. Hence it was no coincidence that the end of the Cold War preceded the privatization of the data center management organizations by few years in Denmark as well as in Sweden and the UK. As an example, Torben Jerlach, Head of CPR, the national data base of residents, reports how CPR was treated as a national security risk because it could be used by invaders to identify and find key individuals (Jerlach, 2004). Prior to 1990, all computers housing the database were located in a single, locked room in a DC facility. The room also contained several actual sledge hammers. In the event of a war between NATO and the Warsaw Pact, specific individuals were assigned to physically destroy the computers with the aid of the sledge hammers. When the Cold War ended in 1989-1990, the central, physical location for state data ceased to be critical. Sledge hammers and duty rosters were removed and CPR copies were then permitted in other locations, including KMD data centers.

The state's data still had to be stored where it could be regulated and policed, that is, within the Danish national jurisdiction. Security concerns thus meant that contracting-out was still restricted. But once the end of the Cold War made the perceived risk significantly smaller, the location limit became the national border rather than the walls of a particular room (Olle Höglund, a former head of the Swedish resident data base SPAR, reports similar post-Cold War relaxations of security precautions; (Höglund, 2005). Transfers of public data to privately controlled locations had become possible.

The national level of politics in Denmark also constrained privatization of DC. When the Conservative-led government introduced its Modernization Program in 1983, the parliamentary opposition resisted the drives for liberalization and increased uses of markets that the program's language called for to reform the public sector. The government eventually accepted a compromise with the opposition: that no more and no less than 25 percent of a state-owned entity could be sold (the '25-percent-rule'). This position was strengthened by a Ministry of Justice opinion that the state could be sued by former state employees if more than 25 percent of a state enterprise were sold off (Togsverd, 2005).

This political obstacle to privatization was cleared in 1993, however. In a seeming paradox, this was accomplished by a Social Democratic-led coalition government that gained power in 1992. The explanation was that the coalition government was headed by the newly empowered '3rd Way' wing of the ruling party. The Prime Minister, Poul Nyrup Rasmussen, and his Finance Minister, Mogens Lykketoft, had few of the reservations about privatization that their party had displayed while the Conservatives led the government. The 3rd Way they subscribed to entailed exploiting liberalization and markets to make cherished welfare programs more efficient (Lykketoft was a co-author a few years before of the key document introducing 3rd Way policies to Scandinavian Social Democrats; (SAMAK, 1989).

The new government kicked off a wide-ranging privatization program with a 1993 White Paper authored by a Member of Parliament and former Environment Minister Lone Dybkjær, who

also chaired DC's board at the time (Finansministeriet, 1993). Between 1993 and 2001, the government completed several unprecedented and full sales of large, publicly owned corporations, including the telecom monopoly (TeleDanmark), the post office bank (GiroBank) and several others (Finansministeriet, 2004). Under the new 3rd Way Social Democrats, the 25 percent limit that the old government had settled for became irrelevant – the new government did not have to compromise with the opposition, having won the battle within their own ranks. Hence, by 1993, the security and national political hindrances to DC privatization had largely been removed. This gradual removal of obstacles meant that the DC management's post-1990 drive to survive through privatization could meet with success.

The Management Drive to Make DC Survive: Navigation to Privatization

The first opportunity for DC to leave state ownership appeared as a merger with the newly formed national telephone company, TeleDanmark (TDC), in early 1991 (Østergård, 2005). TDC's CEO, Hans Würzen, made a speech in which he announced his intention to acquire DC. DC had not solicited any offers, but its management quickly embraced Würzen's proposal and opened negotiations. Opposition from within the TDC organization meant that no agreement was reached between TDC and DC.⁵ In the process of negotiating with TDC, however, the DC owners in the Finance Ministry and the organization of municipalities had approved in principle to the sale of DC. The leadership took this as approval for a general privatization strategy.

Once the sale to TDC had failed, the Østergård management team suggested to the board that DC should be incorporated and operated as an independent, for-profit enterprise. This would resolve the ownership problem that had been a growing problem in the preceding decade. But the Finance Ministry was skeptical. It believed, with state auditor support (De af Folketinget Valgte

⁵ Interviewees disagree on the source of the resistance. Østergård claims that the resistance originated within the IT department, which was struggling to consolidate the IT departments of several regional telecos and did not want added burdens (Østergård 2005). Togsverd claims that the resistance originated with the TDC CFO, who did not believe DC was priced correctly, and did not agree that it would add value to the TDC operations (Togsverd 2005).

Statsrevisorer, 1991), that DC would be hard pressed to survive alone in the systems development markets. The Ministry (through the board of directors) established two conditions to be fulfilled before DC could become a corporation. First, a stake had to be sold to a major private company rather than being floated in capital markets. This would mean a strong partner for DC in the private sector that could help DC overcome its shortcomings in landing new customers and expert employees. Second, the previously mentioned '25-percent-rule' had to be followed: just a quarter of the incorporated entity could be sold to the partnering private company. This condition complied with a Justice Ministry rule in place at the time which set an upper limit of 25 percent on sales of shares in publicly owned enterprises.

The process to achieve incorporation on these terms was difficult. With board approval, DC was incorporated in 1991. Given the '25-percent-rule', this triggered a requirement that 25 percent – no more and no less – be sold to a private company. However, no private company solicited by DC representatives was interested in acquiring less than 50 percent of the shares in the organization: private companies wanted board control in return for their investment. The solution was to formalize the long-existing split between data management and systems development. The data management part became the "Operations Division" (*driftsdivisionen*) with roughly half of the organization in terms of sales. One half of the Operations Division was then offered to private partners. The private partner would thus receive 50 percent control of the purchased entity. The split would also satisfy the '25-percent-rule' since just half of one half of the organization would be privatized.

By early 1993, DC's Operations Division had merged with similar operations at Maersk Data, a private firm. The merged entity, Dan Computer Management (DCM), was now an independently managed, co-owned subsidiary of DC. DC itself had become a fully state-owned corporation with no municipal shareholders. While still mostly staffed by Finance Ministry appointees, the board was now more at arms-length from the government. The large state users of

data now received most of their data management services from DCM, an entity that was 50 percent privately owned. Privatization had begun.

As a business, DC in the 1990s was an odd mix of success and failure (Togsverd, 2005; Østergård, 2005). The data management Operations Division was doing well. Running data systems for organizations like Tax, CPR, the police and the military was ongoing work, as it had been since the databases had been created. The core data management clients emphasized stability and reliability over cost. They made no attempts to find new suppliers (no actual competitive tender for data management services would occur before 2000 – after DC had become a part of CSC; for instance, CPR held its first tender in 2002 (Jerlach, 2004). This meant that DCM, the division that DC owned jointly with Maersk Data, remained predictably profitable.

Problems plagued the fully owned systems development division, however. As previously described, DC's fundamental disadvantage was know-how on emerging technologies. Though DC continued to win development business, it had trouble remaining price competitive and profitable (Østergård reports that server solutions from Dansk Data Elektronik were particularly formidable competition; (Østergård, 2005). The specialists needed for developing and implementing the new systems were still hard for DC to recruit. To make matters worse, it could no longer gain the full advantages from its stable and reliable performance in state data management since that was now shared with Maersk.

DC's trouble opened the door to new privatization opportunities, however. Observing the situation, IBM, the multinational IT corporation, made an unsolicited offer in June 1995 to buy DC outright from the Finance Ministry. In the Spring of 1995, the DC board of directors had reacted to DC's faltering performance by asking Østergård to step down as chief executive. In fact, the organization had trouble finding a replacement (Østergård explained that “no one wanted the job” (Østergård, 2005), and the management team remained in place when IBM made its bid.

When IBM acted on DC's troubles by making its offer, the Finance Ministry delegated the sale decision to the DC board. As described above, the Nyrup government had removed the

political obstacles to privatization of state enterprises more generally. Lone Dybkjær, the board Chairman, was married to the Prime Minister Poul Nyrup Rasmussen. Some informants speculate that her private influence and her established parliamentary career gave the DC board unusual autonomy.

In turn, Dybkjær handed the process of deciding how to deal with IBM to Østergård. Østergård reports that Dybkjær called him by phone on the evening of the IBM offer. She asked him what should be done, and he gave his unreserved opinion in favor of a sale. But he also advocated a proper competitive tender rather than a quick hand-off to IBM. The board subsequently approved this exact course of action (Østergård 2005). Østergård opted for a full sale, consistent with the privatization strategy that his management team had followed since the previously described fateful conflict between the ministers for Tax and Finance in 1989-90. In face of mounting competition and difficulties in accessing up-to-date technical talent, DC was failing once more. As in the earlier crisis, the management believed that private ownership was the way to secure the organization's survival.

The final steps to privatization were a procedural formality. DC was now for sale. IBM had made its offer. But this merely kicked off a process of formal bidding. The DC management invited suitable candidates to bid. These included several major international computer companies and data processors. By 1996, now with new management, DC was sold to the highest bidder, CSC (technically, CSC in 1996 purchased Maersk's 25% stake in DC and a further 50% from the state, and in 1999 the final 25% from the state). With this single transaction, state organizations were converted *en masse* to purchasers in open markets for data management (i.e., contracted-out). In addition, the privatization had ensured the DC organization's survival: CSC located its European headquarters in Copenhagen, with the former DC as its core.

The following section compares the case presented above to similar records in the UK and Sweden in order to gauge whether the apparent impact of organizational agency is unique to the DC

case or is likely to also exist in other settings. This comparison is leveraged to synthesize the findings on the key shapers of DC's privatization.

CASE DISCUSSION: DOES ORGANIZATIONAL AGENCY MATTER?

As described, state data management organizations in the UK, Sweden and Denmark went through re-organizations that moved several of them from hierarchically controlled functionalities to market-based, contracted services. The transformations also shared similar timing: privatizations and contracting-out began in earnest in 1991, after the end of the Cold War had reduced national security risks from distributing state data stores more widely. National politics in the three countries had also turned favorable in the early 1990s. The UK Conservatives remained in power until 1996 and was replaced by “New” (3rd Way) Labour. Swedish Conservatives gained power in 1991 and were replaced by 3rd Way Social Democrats in 1994. Danish Conservatives were in power until 1992 and were also replaced by 3rd Way Social Democrats. Hence, the pivotal changes in security and political environments that finally made full privatization possible for DC in the early 1990s had corollaries in Sweden and the UK, with similar subsequent developments toward placing data management into markets.

However, the previous descriptive comparisons also showed that full privatization was not the only option for state data management organizations. Given the Swedish and UK records it would have been possible for individual Danish departments to handle their IT needs from the outset rather than having one central agency to work for them all. Counterfactually, DC could also have been consolidated with the municipal IT provider KMD, re-integrated with the state as an agency or dissolved altogether. There were thus several paths toward markets – and government-business relations – for state data management to follow.

Founding and later pivotal moments were likely to affect the choice of re-organizational paths. Sweden's independent central IT agency, DAFA, carved a path to eventual incorporation and privatization (in 1986 and 1992, respectively). DAFA shared the independence of management that

DC had also been endowed with. In contrast, while the Danish tax authorities had been DC's largest user for most of its existence, electronic tax data management in Sweden was created as and remained an integrated functionality of the tax bureau throughout the 1980s and beyond. Sweden's tax and statistics bureau IT systems and related data management were thus neither privatized nor contracted-out. In addition, UK departments with heavy data usages had built their individual capacities. These began to be contracted-out extensively in the 1990s, but each department also retained sizable IT-related and data management staff and capacities. Again, a different organizational starting point could be related to a different re-organizational path. Varying starting points meant varying options for turning from hierarchies to markets.

DC's privatization was also the result of reactions to a series of pressures that were specifically directed at the organization in the 1980s. These ranged from KMD's challenge and opening of competition across business failures and labor disputes to the fallout from conflicts within the government between the finance and tax ministers. As described previously, the founding moment in 1959 set up a series of weaknesses that placed the organization in jeopardy when it was exposed to these pressures, primarily related to the state's partnership with municipalities and to the breadth of DC's mission.

But the founding moment also created an independent management that could act in concert with the board to preserve the organization. Where bureaucratic leaders have often been accused of serving their own positions first and foremost (Niskanen, 1971; Dunleavy, 1991), the three managements in place during the 1980s – under chief executives Willy Olsen, Jørn Ulrich Moos and Hans Henrik Østergård – acted in ways that were more consistent with organizational survival than with optimizing their own positions. Olsen stepped down in 1982 as DC's environment began to shift away from the one he had known in previous decades. Moos took risks by searching out new and uncertain markets for the organization between 1984 and 1988 in order to make it a viable commercial business. Østergård doggedly pursued privatization once he was persuaded, against his initial instincts and civil service career background, that state control was a threat to the

organization's survival. In all three cases, the failures in DC performance during their tenure led to the replacement of the individual leader.

Hence, the three men did not achieve greater status from their efforts. Rather, the quest for organizational survival remained the constant driving force in DC management. This agency – in the form of a survival drive – meant that DC reacted to the varying environmental pressure by becoming private rather than by resigning itself to fading away in the face of competition and a failing grasp of new technologies, by seeking re-integration with the state or consolidation with KMD, or any other plausible alternative. DC management's successful survival drive in the 1980s and 1990s means that most critical Danish state data management today is handled through relationships between the government and IT firms, with CSC first among them, rather than within government bureaucracies.

CONCLUSION

The analysis in this paper has focused on state data management, the service that takes care of the great data collections of central governments. The service depends heavily on information technology, and the work involved in data management is a subset of IT-related services. Contracting-out data management involves transferring the collection, storage, processing and dispersal of critical state data from data centers operated by state agencies to centers operated by private firms. Privatization, such as the one finalized at DC in the late 1990s, accomplishes the transformation by changing the ownership of existing datacenters and related processing capacities. This has given modern states access to scarce IT skills and cutting edge technologies through private, multinational IT services firms that act as talent pools and can operate great economies of scale. Without such pooling, states could be more constrained due to higher costs of or less access to IT resources. In the 1980s and 90s, state IT bureaus such as DC in Denmark and DAFA in Sweden certainly experienced that they had less and less capacity to keep up with private IT

services vendors as technology changed (Østergård, 2005; Togsverd, 2005; Jerlach, 2004; Höglund, 2005; Helsing, 2005).

DC's privatization was the culmination of a long process rather than a one-time transformation. It occurred in the context of rapid and obvious technological development. DC was bound by its founding mission to a broad role as the comprehensive IT services provider to the Danish state; technological change made this mission less and less viable. DC also faced several externally generated threats, including increasing competition, labor disputes and politically generated pressures. These presented the organization with a varied set of other existential threats. At each turn, the organization itself made choices that could have propelled it toward extinction or melding into other state organizations, but actually directed it down the path to privatization. This section argues that the key to deciding among these alternatives was organizational agency, and in particular its management's drive to secure the organization's survival in the face of the various pressures. The organizational drive to survive ended in privatization, and one consequence is that the Danish government today receives all of its major data management services from private vendors.

Given the details of DC case and the differentiation within the UK and Sweden between state organizations for data management, however, it is unlikely that IT development is a sufficient explanation of why governments have engaged private firms to take care of their data management and wider IT needs. Instead, individual organizations of state data management in the 1990s carved their own paths with respect to whether and how businesses would become involved in their tasks. Put more broadly, the organizational-institutional legacy is likely to have had a deciding influence on the kind of market-oriented re-organization that state data management underwent at the dawn of the e-government era. Hence, the contemporary data management relationships between IT businesses and governments that undergird e-government today are likely to be differentiated by these organizational legacies and the agency exerted by the changing government organizations themselves.

In particular, the ability of an organization to act as its own agent may well be salient in differentiating such paths. DC's independent management team (and its corollary in Sweden's DAFA) suggests that if permitted to govern their fates, data management organizations will steer their own fates. Privatization is then a likely outcome if it appears preferable when choices are made to a series of other fates that could essentially obliterate the organization, even if these would mean that functionalities or employees would remain public. It is speculation at this point to generalize to other settings, but future studies seeking to explain government-business relationships in e-government are likely to benefit from further analyses of the agency of past state data management and wider IT services organizations.

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