Leaders and Followers: E-government, Policy Innovation and Policy Transfer in the European Union

Helen Margetts, UCL

Patrick Dunleavy, LSE

Simon Bastow (LSE/UCL) and

Jane Tinkler (LSE/UCL)

This paper looks at the impact of electronic government - widespread government use of information and communication technologies (ICTs) - on the transaction costs of policy innovation. e-government has great potential to reduce the transaction costs of innovation for those organisations that use it creatively. Government agencies rely heavily on private sector computer services providers for ICT expertise. Over time, governments develop distinctive 'contracting regimes', where trends in public management reform, contracting styles and markets of computer services providers produce a variety of patterns of contract relationships. Certain contract configurations can introduce new transaction costs and agency costs which offset potential gains in terms of innovation. The paper compares the UK case with the Netherlands and other international examples to conclude that countries using a 'Rhineland' model of contracting – as used in the Netherlands - are more likely to experience a net reduction in transaction costs and develop more innovative styles of policy-making through e-government initiatives than those using an 'Anglo-Saxon' model – for example, the UK and various countries outside the EU such as the US, Australia and Japan.

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The conventional view of government agencies is that they make poor entrepreneurs; that 'the public sector will be less innovative than the private.... because individuals do not reap the reward of technical advance and so lack the incentive to improve methods. Productivity necessarily lags in the public service (Baumol, 1967; Walsh, 1995: 18). More simplistically, management enthusiasts argue that 'bureaucracy is too autocratic and rule-driven to motivate and manage the intelligence that is brought to innovation' (Pinchot and Pinchot, 1994: 32). This paper argues that moves towards e-government – the widespread use of information and communication technologies (ICTs) by governments across the EU over the last 50 years - increase the potential for these governments to innovate in terms of policy and service delivery initiatives. But to varying degrees, governments' ICT systems are developed, provided and managed by private sector computer services providers. So the extent to which this potential for innovation is realised will be shaped by individual countries' contract regimes. This paper explores the relationship between e-government and innovation in two countries, the Netherlands and the UK, examines the radically different contracting regimes of the two countries and investigates how varying transaction costs and agency costs in contract relationships might influence the potential for policy innovation through e-government initiatives.

e-government and innovation

Since the 1950s, governments across OECD countries have increasingly used computers across all the 'tools' of government policy (see Margetts, 1998; 1999; 2003). By 2003, most government agencies use ICT systems to process financial resources, to collect and analyse data on citizens and businesses, to transmit information across society and to wield authority. Web-based technologies and widespread societal use of the Internet mean that these systems provide governments with increasing potential to communicate with citizens and organisations of all kinds. Increasingly, policy innovations are reliant on the effective operation of these systems. Congestion charging in London, for example, could not have been introduced without complex information systems and databanks of information about drivers and vehicles with which to process payments and regulate access to the central zone.

This injection of technology into civilian bureaucracy can mean that innovation occurs as a by-product of technological development that may have been carried out for wholly other reasons. For example, the Police National Computer has long facilitated a move

towards more pre-emptive policing. In the UK, a database of DNA collected from all those suspected (wrongly or rightly) of serious crime means that policy-makers could decide to legalise a pro-active search for those more pre-disposed to commit future crimes and focus police activity on these individuals. Such a move is possible with the existence of a database – but would be impossible without it. Likewise, electronic tagging of prisoners, introduced for the purpose of allowing low-risk prisoners to lead more normal lives – force policy-makers to reevaluate the whole notion of punishment.

Web-based technologies have reinforced this trend: earlier information technologies were largely internal to government agencies, but use of the web by government combined with rapidly growing rates of Internet penetration in society mean that there are dramatic new possibilities for governments to communicate with citizens. Once government is communicating with citizens electronically, data on their behaviour (easily collected through web usage statistics) can give new insight into citizen preferences, opening up further policy options. A vignette from the private sector provides an example. EasyJet's successful move towards on-line provision involved working out which of the determining factors in customers' choice of flight could be conveyed more efficiently on a screen. This led to the realisation that many customers are not sure where they want to go – only that they want to go somewhere, for a long weekend at a good price, or whatever. For the first time, the company worked out that for this type of potential customers, ringing up an airline and saying 'Hello, I want to go somewhere please' felt ridiculous whereas exploring the range of possible destinations on a web site, given time and cost constraints, was acceptable (Lord, 2000). Likewise, once government ICT systems become more outward facing there are new possibilities for government agencies to communicate with businesses and other government agencies in so-called joined-up initiatives.

What is the mechanism for this development? Innovation requires various organisational interactions, which may be circumvented by the existence of appropriate technology. Introducing a national identity card in Britain for example, is complicated by the need to develop a technological solution. Personal electronic records in health and social care in the UK have been described as a 'key plank' of policy in health and social care. But before such records can facilitate any change in policy-making, a technical solution has to exist. In Belgium, a 'Crossroads bank' for social security handles the exchange of data between social security institutions . In practice each ensure person holds a smart card with a unique access key for the processing of his/her rights and obligations in the social security field. The identification key quoted on the card is used as a reference for the processing of files listed in the computer databases of social security institutions. Through this scheme, over 200 million electronic messages are exchanged every year between the hundreds of social security institutions. Once such a database exists, it makes future policy innovations –

such as payment mechanisms based on detailed benefit histories of individual claimants – possible, just by its existence.

In this way, existing ICT systems may reduce transaction costs in the development of policy innovations based on technological innovation. Transaction costs are the costs involved in making exchanges (Walsh, 1995), for example the effort to negotiate, execute and monitor contracts. Williamson (1975) argued that the most advantageous institutional form will depend on the level of transaction costs. Market relationships will be affected by a number of factors: uncertainty and bounded rationality, complexity, opportunism and asset specificity. Transaction costs differ from production costs in that they are not strictly measurable, making it impossible 'to specify empirically the exact nature of the trade-off between transaction costs and production costs (Lane, 2000). In the case of policy innovation, the trade off becomes all the more difficult as the production costs of innovation are difficult to quantify.

e-government not only facilitates innovation. It can also 'force' innovation on government, for two key reasons. First, because just by their very existence, some kinds of data provoke a policy response. Genetic data provides an example. Once such information is produced about citizens –either by public or private sector organisations, new policy dilemmas arise. Governments must decide how to regulate collection of the data and decide which organisations should be able to access and use it.

Second, electronic developments outside government can also mean that governments must respond. Pressure groups and protesters have been particularly innovative in their use of web-based technologies (Margetts, 1999). Likewise, when citizens become accustomed to dealing with banks and department stores on-line, via tailored web sites and email communication, they are less likely to accept dealing with government via telephone and post alone. These kind of pressures mean that by 2003, almost all EU governments have some kind of target regime in place, whereby they have committed to deliver all services on-line by a certain date. In the UK for example, the Blair government is committed to make all services available electronically by 2005. The Commission has recently approved an 18-point plan aimed at closing the information technology jobs gap with the US which will ensure that all teachers are computer literate by 2003 and create an EU wide network of public access points (*Financial Times*, 7th February 2000), for example.

This relationship between e-government and innovation is hypothetical, however, in that the beneficial effects for innovation are potential. There is nothing inevitable about the capacity of governments to innovate using e-government initiatives. Finland has become 'almost a byword for technological innovation', with higher levels of Internet penetration than the US, and spending more per head on IT than any other country in the EU. But in general, implementation of e-government across the EU has been described as 'colourful rather than

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co-ordinated' and in the UK, France, Germany and Italy as 'fragmented', in desperate need of initiatives which link governments to citizens, institutions and other government organisations *(Financial Times*, 5th November 1998). Similar revelations of citizens' preferences as in the Easyjet example above may be possible in the governmental context – but unless government agencies have direct experience of citizen behaviour when using government sites, the Internet's potential for overcoming lack of understanding of citizens' preferences may not be realised. Research (Dunleavy and Margetts, 1999, 2002) has shown that UK government agencies in particular have a poor record for analysing web statistics for usage of their web sites. The worst example was the central government portal UKOnline, where a contract provider provided no usage statistics of any kind for two years and the Office of the e-Envoy was unable to collect them itself. And although governments increasingly compete with all kinds of other organisations to develop nodality, they do not always win the race. Government computer systems themselves over a time have a tendency to develop into complex webs which further challenge the comprehension of policy-makers. As Peled (2001) put it, 'Inside the electronic mound, humans and nonhumans gradually co-evolve and inscribe their properties onto each other. The mutual transactions between human and non-human actors are so numerous, intimate and complex that some of them must be 'black-boxed'.

The trend has been for governments to outsource or contract out their ICT systems to private sector computer services providers. A huge range of different contract relationships have developed, from spot contracting to facilities management to outsourcing to public-private partnerships to full scale privatisation (for example, the UK Driver and Vehicle Licensing Agency's IT division). This trend has been reinforced by technological developments, as web-based developments increase potential for government ICT systems to face outwards, the range of technological tasks required by government increases. As the executive director for public sector at Cap Gemini UK put it 'We are seeing a lot of change around in what government bodies are wanting government to do. We are moving from the back office to the front office – and people are changing from saying "well here is my IT department and can you run it?" to saying "I need help, I need people with vision and innovators to help achieve joined up government agendas"' *(Financial Times*, 4th August 1999). The extent to which governments have used contracting out as a management tool to develop ICT systems relies on a number of factors; institutional patterns; the government's historical approach to contracting as a management tool' and the extent to which governments implemented 'NPM' style reforms during the 1980s and 1990s (Dunleavy et al, 2001); and general cultural approaches to technology (Margetts and Dunleavy, 2002).

Given the relationship between e-government and innovation and the important role that private sector companies play in developing government ICT systems, e-government

can involve a transfer of innovations developed outside government into the public sector. Where innovations are transferred from one government to another, these organisations will act as important intermediaries in any transfer that takes place. So for example, if Company (A) holds a contract with both Government (1) and Government (2), there are a greater variety of ways in which policy learning might occur. Government (1) could develop a policy innovation based on joint technological learning surrounding the contract – which they pass to Government (2). Alternatively, Company (A) might develop the innovation in conjunction with Government (1) and then sell the same innovation to Government (2). The way in which such innovations occur – and the extent to which any of the actors have incentives to innovate – will depend on the type of contract relationships that exist. Asymmetries of expertise across contract providers and public officials mean that policy-makers may struggle to know what is technically possible and what is not – and companies may not have the incentives to clarify. So, these contract relationships might increase the likelihood that innovations will spread across governments – but likewise could make it less likely that the two governments will possess the technological expertise to innovate. Contract relationships may introduce new transaction costs – new organisational barriers for example – that affect innovation.

Thus the varying contract arrangements for the production of government ICT systems will reshape the environment in which innovation might or might not occur. Previous research has shown how different countries have developed distinct 'contracting regimes' (Dunleavy et al, 2001). Differences in these regimes shape the pattern of transaction costs and incentives for the transfer of innovations between companies and governments. In the next section we investigate the distinctive contracting regimes of the UK and the Netherlands.

Comparing Contracting Regimes

Here we compare the UK and Netherlands contracting regimes along four parameters: public management reform and extent of contracting; contracting style; contract size; and shape of computer services market.

Public Management Reform and Extent of Contracting

Contracting and the resulting competition was a key theme of New Public Management Reform of the 1980s and 1990s. But European countries outside the UK have been slow to develop this element of NPM reform, so large differences are observable.

United Kingdom: The UK has been the home ground of government-wide 'new public management' (NPM) initiatives for over twenty years, in which contracting out has played a central role. Conservative governments strongly promoted successively compulsory

competitive tendering, strategic review and market-testing and then the Private Finance Initiative (PFI) from the middle 1980s through to the change of government to Labour in 1997, all aimed at increasing private sector involvement in public sector activities. These policies were applied with particular intensity and in a state-residualizing way to IT by the Conservatives. In 1994, William Waldegrave, then minister with responsibility for public service, said that information technology development was an area 'from which it was best for the Government to withdraw' (Treasury and Civil Service Select Committee, 1994: xvii). The Blair government after 1997 removed some of the emphasis upon outsourcing at all costs and stressed a case-by-case approach, greater staff involvement and a more humanized NPM approach. But ministers largely shared the Tory presumption that the private sector was more specialized and competitive in managing large IT facilities and development projects than government could be. And for public sector projects in general, PFI – a device to increase private sector investment in public sector projects - was continued and extended, so that capital funding for large-scale projects was not available through any other route.

Senior civil service backing for this stance was readily given because of the perceived risks and difficulties of directly managing in-house information systems development. Several high-profile IT disasters in the 1980s and early '90s in the National Health Service more or less induced a stasis in information technology in the hospitals sector during the 1990s, with few senior managers there ready to stick their necks out by launching in any way innovative projects. In Whitehall more generally departments and agencies found it progressively harder to recruit and pay qualified IT development or even maintenance programming staff compared with consultancies and specialist IT firms. This trend intensified as the outsourcing market grew in both the public and private sectors. Senior officials responsible for existing IT systems were only too ready to consider contracting out in the early 1990s and PFI or public-private partnership (PPP) deals in the later 1990s, as methods for freeing them from direct responsibility for these 'poisoned chalice' tasks. 'Public sector comparators' were supposed to be used to evaluate savings from replacing in house staff with company provision. But these speculative internal estimates were almost always constructed conservatively, projecting forward existing cost patterns and making little allowance for technology advance or new working methods, so that they that almost always produced large nominal cost-savings from introducing outsourcing. All these pressures meant that the spending contracted-out to companies rose from 23 per cent of all civil service IT budgets in 1993, to 30 per cent in 1995, and a projected 54 per cent in 2000 (Computer Weekly, 25 February 1999). Thus the outsourcing ratio doubled in less than a decade.

Netherlands: In common with other western European countries but in contrast with our other case studies, the Netherlands has had few New Public Management influences, NPM being regarded as an experiment that was tried at local government level in the 1980s (known as 'the Tilburg model' because of the locality where it was introduced) but is 'all over now', as one official put it. Some NPM type arrangements have long been used in Dutch government – for example, quasi-governmental organisations are a strong feature of public service delivery in the Netherlands - but there has been no concerted drive towards privatisation or contracting out. Thus ministries and agencies have used IT contracting as a tool for bringing expertise into the government as it becomes necessary, with no ideological 'push' factors.

Also in contrast to the UK, the Dutch government has seen little need for regulation from the centre. In the 1990s, the Audit Office set up a framework for preferred supplier arrangements, but ministries showed little enthusiasm for the idea, preferring to deal with contracts on a case-by-case basis. However, since a European directive mandated that all contracts over 240,000 Euro must be tendered the Dutch government has had to take the notion more seriously, especially after new European Tendering Procedures for Contracting ICT services took effect on July 1, 2000. Many ministries have preferred supplier agreements, but they maintain these with several suppliers (the tax authority have nine) to maintain some sort of competition. The tax authority, for example, work out every half year the percentage of business that each one of their 'preferred suppliers' has – and then award them more or less business next time to adjust any discrepancies.

Contracting Style

The 'style' and approach to contracting is clearly different in the two countries, although they are subject to some of the same pressures. In general, public sector contracts tend to be distinct from those held by the private sector, with large asymmetries of expertise opening up between government officials and their private sector counterparts and companies and government officials responding by running them to the tightest of profit margins, wary of allegations of sleaze or business-linked corruption (see Turpin, 1972; Dunleavy, 1994; Margetts, 1999). Both countries are also subject to the EU tendering rules noted above.

United Kingdom: In the UK (along with various other countries outside Europe such Australia, New Zealand and to some extent the UK) an 'anglo-saxon' model of contracting has emerged, which epitomises the distinctive characteristics of public sector contracts noted above. Asymmetries of expertise evoke insecurity in government officials who respond with 'control tendency' characteristics (Margetts, 2003). Under this model, contracts are adversarily managed, with all efforts geared towards price reductions. Tenders are tightly negotiated and as one observer noted after the disastrous Pathway project, the 'Post Office

has a history of over defining requirements'. Research from private sector outsourcing experience indicates that relationship management is a crucial factor in the overall success or failure of an outsourcing arrangement (Goles and Chin, 2002: 223; Willcocks, Lacity and Kern, 2000) and innovation occurs on the border of the customer supplier relationship (Quinn, 1992). But the UK government's obsessional 'control tendency' approach to contract management works against such an arrangements – although always called partnerships, these are clearly contracts rather than relationships. As the head of UK contracts for one firm put it to us in an interview, 'there is far more emphasis on culture and relationships......in the private sector than there is in the public and that I think is fundamentally the problem of why government contracts don't work' (Interview, 4th September 2002).

The Netherlands: Across Europe, another contracting model is observable – the Rhineland model. The Rhineland model is the contracting equivalent of the 'Rhineland' economic model where a regulated market economy relies heavily on consultation between government, employers' organisations and labour unions – where stakeholders or interested parties try to achieve harmony, a balance between market forces and social and environmental responsibility. In the poldermodel, developed to overcome some of the inefficiencies of the Rhineland model, labour market flexibility in terms of an increase in part-time work, decentralisation of wage bargaining and reforms to the benefit system play a key role – although some commentators have cast doubts on Dutch success or ascribed it to moves towards the Anglo Saxon model rather than a re-emphasising of characteristics of the Rhineland model (speech by EU commissioner Fritz Bolkestein, Brussels, 5th December 2000).

In contracting terms, participants view the Rhineland model as one based on consensus between parties, with the minimal possible confrontation and conflict. In the Netherlands, such an extreme version is visible that some officials described it as the 'poldermodel – Dutch exceptionalism, but it serves well to illustrate a distinction that is present but less observable in other EU countries. Again, the poldermodel is the contracting equivalent of the Dutch economic model but we observed that it was a reinforcement rather than a mitigation of the Rhineland model, unlike in the economic case. While in the Anglo Saxon model financial control is more important than a good relationship, the Rhineland model involves consensus, discussion and mutual support (what we would call a relational model). This model of contracting was seen by our interviewees as typical of Germany, Scandinavia, the Netherlands and France – although Dutch commentators suggested that the Netherlands is an extreme version of this model.

Under the Dutch model, companies looking for contracts need to 'work their way up from the work floor' and work with smaller contracts than they might in other countries, as

Cap Gemini claims to have done. Thus while Cap Gemini in the UK goes for big outsourcing deals, Cap Gemini in the Netherlands has started with small IT assignments tendered by personnel faced with specific problems. Government ministries in general are very scared of the idea of becoming too reliant on one supplier. There is some change in the market – as companies raised on the Anglo-Saxon model become more global - but the most aggressive of these companies, unwilling to go through the painful process of gaining experience of the Dutch culture, find it hard to gain a foothold in the market. As one CEO of a Dutch company put it, in this environment 'client knowledge is as important as professional knowledge'.

Contract Size

These contrasting approaches to public management reform in general and contracting in particular have led to radically different types of contracts in the two countries, particularly in relation to contract size.

United Kingdom: In the UK, a combination of radical NPM trends, the Private Finance Initiative and the contracting style noted above have meant that the size and length of contracts increased dramatically through the 1990s. The previous 5-year average contracts were replaced by deals lasting 7, 10 or even 15 years (see table below). The scale of the deals also moved from the separate contracting out of particular data centres of facilities to the wholesale privatization of departments or agencies biggest and most fundamental systems. The scope and depth of corporations' involvement changed from conventional procurement deals for limited facilities operation to strategic partnership contracts vesting almost sole responsibility for developing and managing departmental or agency systems with the contractor. Civil service IT staffs dwindled in most cases into small advisory or contract management groupings. Public sector agencies embarked on radically new types of relationships with private sector companies, including set-ups where contractors obtain a share of extra revenues generated or savings achieved under an entire systems integration strategy. In the newest PFI and PPP contracts businesses compete to buy central government IT facilities and take over most of their accompanying staff (and liabilities) in return for a future stream of micro-payments triggered by each government use of the system (for instance to process a payment, look up an index number or handle an interaction with a citizen). Because contractors' payments thus depend on the system being available and in use, their interests are hence supposed to be 'aligned' with the agency rather than against it. The PFI and PPP processes are claimed to 'transfer risk' to private-sector providers, especially in the design and implementation of new systems. Previous cost over-runs and delays in the public sector are supposed to be avoided by more incentivized companies with a direct financial stake in timely delivery on cost. But companies themselves

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have successfully argued that such benefits are only possible when contracts are run over a long period: As the head of one major provider's UK government services put it to us, 'If we would be expected to invest, then you need the length to get the return on investment. We would prefer 10 plus years and then you can get serious about investing money'. All these influences produced a pattern of government-industry relations very distinctive in terms of the financial size, wide scope and lengths of contracts.

These new forms of contracting have not clearly proved any easier to manage or less prone to major setbacks than the conventional procurement which preceded them. A contract by Anderson Consulting for a new National Insurance number ran into immediate problems after the government accepted a bid from the company almost half that of other tender and a quarter of the public sector comparator case. Despite being almost immediately renegotiated the PFI deal involved was initially seen by an audit office report as offering good value for money (NAO, 1997) only for the contractor to stop operating the old index system as planned, but then not bring the new system into place for almost a year. During this long gap benefits and pensions were being assigned by the department to citizens without full information on their contributions, at a cost yet to be assessed. Another deal between the Passport Office and Siemens was mismanaged, producing a crisis of public confidence and an almost complete breakdown in the agency after huge and escalating delays in issuing passports (NAO, 1999b). An ill-conceived smart card scheme for issuing benefits involving the social security department, the Post Office and ICL collapsed in 2000, with public sector losses running into tens of millions (NAO, 2000b). And in 2002, a long awaited simplification of the system for calculating child maintenance - based on 15 per cent of a parent's income for one child, 20 per cent for two and 25 per cent for three – was delayed by the non-readiness of a PFI-based computer system developed under contract to EDS, already £50 million over the original £200 million costed for the project.

Even where deals stayed in being and delivered on time there have been huge extensions of government's financial exposure, produced by renegotiation of additional elements for deals, or changes of the original contract specification in response to new policy initiatives. In late 2000 a leaked memo from a company awarded a £100 million defence contract after competition showed that its executives expected to gain a further £400 million of negotiated business. And an NAO investigation of an Inland Revenue outsourcing deal with EDS, initially hailed as offering very substantial cost savings compared with a public sector comparator (NAO, 1995) showed that the initial £250 deal over ten years had already swelled to a total commitment of £1 billion, produced by policy and legislation changes, such as the introduction of income tax self-assessment and the requirement to develop internet filing of tax forms (NAO, 2000a).

By the end of 2000 there was mounting evidence that cost savings were proving far lower than had expected, that IT project management remained inherently risky under the new arrangements and that the risk of catastrophic failure was inherently incapable of being transferred away from government by PFI or PPP arrangements. The government introduced new and strengthened e-government procedures, mainly to encourage agencies to go online (see section 3 below) but also to prevent obsolescence. A new agency the Office of Government Commerce (OGC) was set up to vet all IT deals (and also PFI and PPP contracts more widely). OGC essentially requires projects to be externally assessed at three critical 'gates', which build in exit ramps allowing non-functioning or overly risky projects to be cancelled. The new procedures have been ruthlessly applied to some politically sensitive projects, and new IT contract procedures have been developed by the Cabinet Office acting jointly with Treasury and the audit agency NAO. These stress the importance of modularizing contracts, avoiding 'big bang' schemes and reducing dependence upon proprietary systems in favour of more incremental changes and more open standards which can sustain future competition. These arrangements are still in their infancy but they have had little impact upon the market for government IT

This table shows the top 10 IT contracts held by UK central government (in terms of total contract value) in 2002 with a total value of £7 billion.

Largest 10 UK Central Government IT Contracts, 2002

| Supplier	Department/Agency	Start date	Length (Years)	Total Value (£m)
EDS	Inland Revenue	1994	10	2,500
EDS	Work & Pensions	2000	10	2,000
EDS	Employment Service	1998	10	550
ICL	Customs & Excise	2000	10	500
Capita	Criminal Records Bureau	2000	10	400
ICL	Home Office	2000	10	350
ICL	Trade & Industry	1998	10+	150+
SBS	Passport Agency	1998	10	230
EDS	Child Support Agency	2000	10	200
EDS	Prison Service	2000	12	200

Source: Kable, Imran

The Netherlands: In the Netherlands, deals are much smaller. The CEO of Cap Gemini – one foreign company that has made inroads into the Dutch company - noted a big difference in his approach and that of his UK counterpart – he is under pressure from his boss to go out and look for larger deals but for him, a deal of £1 million would be reasonable and '25 million Euros is a very, very big deal'.

Thus no comparable data exists on contracts in the Netherlands but it is clear that the table shown above would look very different. Contracts tend to be project or problem based, involving 'people' consultancy or architecture/systems integration, but all ministries retain big IT divisions and a lot of in-house knowledge and expertise. This drastically different pattern of contract relationships appears to have a beneficial effect on government's ability to develop ICT systems: when asked for evidence of 'disasters' of the kind outlined above, a gathering of the Netherlands policy community could think of only one (Dunleavy, 1995).

Market of Companies Providing Computer Services to Government
The type of contracts that emerge have a distinctive effect on the market that emerges. In European countries, these are relatively new markets. The British outsourcing market grew from a level of virtually zero in 1984 to around £650 million by 1992, around seven times smaller than the US market at the time. The British market accounted for more than a third of the European outsourcing market at the time, which had reached a total of £1.7 billion for software and services by 1996, growing by around 25 per cent over the next three years (Margetts, 1999: 133). By 2003, ICT expenditure for public administration in EU countries is over 30 billion euros, 24 per cent of which is at central government level. International agencies can put further pressures on national governments to increase the extent they outsource their IT: in 2002 the OECD told the Italian government to adopt more outsourcing for IT services (*Government Computing*, November 2002). The type of contracts which governments enter into affects the shape of these markets - which in turn affects future contracts.

United Kingdom: The consequence of the contracting pattern outlined above is that in the UK every government department, every agency is now involved in at least one major partnerships with global computer services providers. The larger contracts get, the larger the companies that can bid for them have to be – and the less choice government has. On many occasions the National Audit Office have had to refer politely or obliquely to a 'lack of competitive tension' in the bidding process. Our ESRC research shows that the UK market for government IT is one of the most concentrated in the western world, with the top five or six firms controlling about nine tenths of the market, and Electronic Data Systems alone over three fifths, as this chart shows.
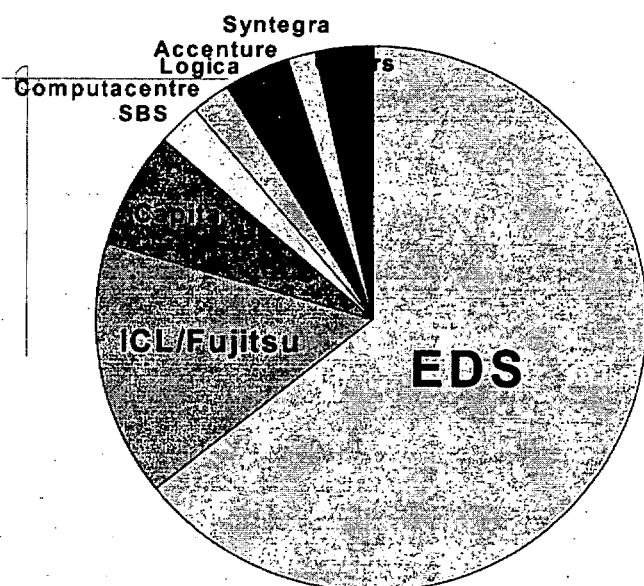
Companies' Share of UK Central Government IT Contracts, annual expenditure 2002 (= £1 billion)

Source: Kable, IMRAN

Only huge companies can tender for the contracts shown in the table above - and these are huge. EDS for example, supports 2.5 million desktops across the world, with annual business of $33 billion and 126,000 staff across 55 countries. It is a lead player in many other countries, particularly Australia and New Zealand where it holds four-fifths of the market. And their role is set to increase to a wider range of functions, based around but not restricted to information systems. In October 1996 the magazine *Wired* asked a senior EDS director if he saw any role for government in the future. His reply was 'To be honest, I really struggle to come up with a clear definition of ultimately what role government has'. And then he laughed.

The Netherlands: the government IT outsourcing market in the Netherlands is almost the opposite of the UK, with European companies playing a far greater role and US and global players a much smaller one. While the market as a whole is set to grow – the early twenty first century was designated as a period of high investment in government IT services and infrastructure (Digital Delta, 1999) - the market of computer services providers remains distinctive, with the big global players finding it hard to gain a foothold. The Dutch approach to contracting and regulation has led to a clearly distinctive ICT contractor market made up of the following types of service provider:

- Large providers of European origin such as Ordina, CapGemini, and Getronics
- US providers looking to establish a wider market base in Europe, such as EDS and CSC

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- Partially privatised IT organisations originating from the public sector, such as Pink Roccade, formerly the national government computer centre
- Internationally networked consulting firms, such Accenture, KPMG and Price Waterhouse Coopers
- Smaller software and systems integration companies with direct contractual arrangements with public sector, or with sub-contracting arrangements with prime contractors, such as Computacenter and Synstar.

There is no market data for the public sector of the kind shown for the UK above – such information is collected by ministries, but they take care to keep it secret. According to interviews and discussion with leading players in the field the leading providers in the Netherlands seem to be Cap Gemini (no. 1), Pink Roccade (no. 2) and Ordina (no. 3); although opinions of ranking varied among interviewees, there is consensus on the key players. The big US players have a tiny market share. There is a tail of around 10,000 smaller companies with less than 10 staff. 25 members of the IT trade association do 80 per cent of IT business and the big 4 do 80 per cent of the IT consultancy market.

One big player which has made inroads into the Dutch market is Cap Gemini which has around 8,000 staff in the Netherlands out of 9,000 in Benelux countries altogether and 40,000 in Europe. The company has a revenue of about 12 billion euros for the Netherlands. In spite of the huge difference in size of deal noted above, the CEO observed proudly that profitability in the Netherlands is 'sky high' compared with the UK. The merger of CapGemini and Ernst & Young in March 2000 seemed to aid the process; net profits in the Netherlands rose in 2000 to around 50 per cent, almost 25 per cent more than the combined net profits of both organisations in 1999.

One of the distinctively Dutch players is Ordina, founded in 1973 through the Dutch takeover of a French company. Ordina was floated on the Stock Exchange in 1985 and is now around half the size of CMG. The company claims to 'understand the Dutch way of thinking', to realise that 'you can't copy success from other countries' and that you have to 'value client and market knowledge as much as professional knowledge', (interview with CEO, June 2001). The company works in about 25 countries and has some global clients but 90 per cent of its business is in the Netherlands and in fact, the CEO believes it would not have the local knowledge to tackle (for example) the British market. The company currently does 26 per cent of its business with the public sector, with another quarter in finance, a quarter in telecommunications and a quarter in industry. Ordina was particularly strong in terms of recent growth rate, strategic acquisitions, and partnership deals in core government areas over 2000, with growth rate in turnover and profit predicted respectively as 36 per cent and 26 per cent. In 2000 Ordina took over the specialist social welfare systems integrator, Relan ICT (with a workforce of 575, 375 in permanent employment), the IT daughter

company of the Relan Group and one of the largest providers of IT services to the Dutch social security market. This deal helped to establish Ordina's position in IT provision in social services, especially as the Relan Group itself owned two large UVI organisations, GUO and CADANS, responsible for social security and employment insurance payment. The new organisation will brand itself specifically for social welfare provision, Ordina Sociale Zekerheid (Social Security) BV, at a time when the Ministry for Social Affairs is developing plans to automate all regional and local benefit payment offices. During 2000 Ordina's workforce grew by 732 people to 3,701, a 25 per cent increase. In 2001, the company was planning to be twice as big in three years time – it considers that only a third of that growth should be 'bought' through acquisition; at least two-thirds must be made.

After reluctantly conforming with the EU mandate to tender, rather than its preferred method of negotiation, Ordina has established preferred supplier partnerships in 11 out of 13 central ministries (all except Economic Affairs and Foreign Affairs). For example, in November 1998, it agreed a 3-year deal (with 3 year follow on) with the Ministry for Culture, Education, and Science covering consultancy, systems development, support, implementation of new technologies and the development of an intranet system covering the entire department. Large contracts held by Ordina include the development of an internal information exchange structure in the Ministry of Internal Affairs, photo scanning devices and data warehousing work for the Immigration and Naturalisation Service, and joint work with EDS for the National Railway Infrastructure Control Authority developing a large scale financial and administrative information system (FAIS). In April 2000, Ordina signed another preferred supplier arrangement with the Tax Authorities/Computer Centre. Ordina has also recently signed a strategic partnership with IBM Software Group that will combine expertise in software development and consultancy and implementation services. The deal will involve collaborations in Belgium, Germany and the UK as well as the Netherlands – but the Dutch CEO of Ordina stressed that it was an informal deal, under which both companies would 'help each other out' when convenient to both.

Another landmark of the distinctive Dutch outsourcing market is Pink Roccade, originally the national computer centre (RCC), whose speciality was a citizen data centre with almost unique levels of security: walls a metre thick and its own electricity supply in case of power failure. In the early 1990s Roccade was set up as a company by the government, although all shares were held by the state. At the time, the data centre model was thought to be outdated and worthless and it was planned that eventually the company would be sold to Getronics. However, with its reputation for security and an innovative director, the company started to grow. . In 1993, RCC purchased Bouwfonds Informatica, the IT section of Bouwfonds Netherlands, with expertise in public sector IT service provision, and Pink Elephant, a group of bright young Delft students working on data centres and public sector IT

who had built up a company of 400 staff with a reputation for innovation. Pink Elephant brought a welcome shift to Roccade's bureaucratic culture and the company prospered by running data centres across government and in the private sector. Having ridden out the IT market slump in the mid-late 1990s, the company emerged from the market as Pink Roccade, newly equipped for provision of web-enabled solutions and one-step ahead of other public sector IT providers. Pink Roccade's growth caused industry complaints that Getronics should no longer have a clear field in buying the company - it was obviously viewed by the private sector as a prime route into core government areas, notably welfare. Around 1997 the government changed the approach and offered the company for sale by auction. Getronics and IBM had the best bids – EDS were evidently going to make a lot of money charging for alterations after the contract was signed and were thrown out of the race– and were invited to submit sealed bids. Getronics submitted a bid two times the value of that of IBM, so IBM was rejected. But once the CEO of Getronics tried to explain the disparity in size of its submitted bid to banks and shareholders, he was pressurised to return to the Minister for the Interior and attempt to renegotiate a few hundred million from the price, in a manner which one commentator suggested was redolent of the 'used car market'. Thus the Getronics bid was also disallowed, and the government turned to the Stock Exchange, floating the company at 30 per cent of its stock per year with the government retaining the remainder.

Pink Roccade has shown rapid growth ever since, from 1,000 staff after buying Pink Elephant to 4,000 in 1996 to 6,000 in 2000 and 7,500 in 2001. The company is now accredited as the 'No 1 data centre in Europe' and its position in the wider Dutch IT market is illustration of its success. Its turnover per employee in 2000 increased by 21per cent (f.247500), higher than many of the large international companies, for example, Cap Gemini at 6 per cent. Pink Roccade won one of the largest Dutch government IT contracts in recent years, the Ministry of Defence's £25 million contract to run its data centre. The company's position has been further strengthened by its successful f400m purchase of ASZ (Automatisierung Sociale Zekerheid), the IT division of one of the largest social security and employment insurance providers (UVIs) in the Netherlands, GAK Group. This takeover gives Pink Roccade control over all IT provision of GAK's payments and services in the same way that Ordina's takeover of Relan ICT has provided access to GUO and CALANS.

In contrast to the 'home team', the dominant player in the UK market - EDS - has been tackling the Dutch market (private sector as well as public) for the last 20 years and frequently approaches academics for information on how to penetrate the local market. In the early days, EDS took over a 5-years systems integration contract with Unilever in the Netherlands – but at the end of the term the business units moved back to Unilever 'at the speed of lightening'. EDS Netherlands's presence on the European continent is still nothing

like as established as it is in the UK, in spite of concerted acquisitions made in the European service provider market and recent attempts to re-profile its services. In April 2001, EDS bought the German systems integrator Systematics AG for f1.4bn, with a view to achieving the specific goal announced by EDS Netherlands' communications manager, 'striving for half of EDS worldwide turnover originating from Europe'. Although EDS seeks primarily to capture largely untouched government markets in Germany with this purchase, it is clearly a good illustration of the way in which EDS envisages its way into European markets. In January 2001 EDS Netherlands made another attempt to open up new Dutch markets by agreeing a partnership with the procurement software specialist Emeritor. EDS Netherlands does have some important government contracts, notably in the area of transport systems. For example, EDS provides systems integration, hardware, web-hosting services, and consultancy to the Railways Infrastructure Control Authority (RIB) and related bodies (Holland Railconsult, Strukton en dergelijke). It also headed a consortium with Ordina to run the National Railways computing centre (CVI) under which all 234 employees in service became employees of EDS Netherlands – but EDS subsequently lost this contract to Getronics, illustrating again EDS's inability to establish a captured market in the transport sector.

Most commentators pointed to major flaws in EDS's approach, in particular its inability to work with rather than against the 'Rhineland' model of contracting, in which 'ICT experts mustn't come in too far' as one CEO put it. EDS approached the Dutch tax office five years ago, but discussions broke down almost immediately – according to the CEO of a rival company EDS talked only of economy and efficiency and could not satisfy the tax authority that they could provide the necessary robustness of systems support – that is, guarantee against system failure. Computer Sciences Corporation (CSC), the leading contractor in the US civil government IT market, has also made little headway in the Netherlands. In terms of net profit, the company suffered a drop from $149m in 1999 to $109m in 2000. Getronics, another influential provider in the wider Dutch IT market, also had a difficult 2000 with net profits at around 4 per cent growth.

Contracting Regimes, Transaction Costs and Incentivization

These two case study countries illustrate some of the transaction costs and agency costs that can arise from different contracting regimes. The complexity of contracts, contract length and the shape of the computer services market are all affecting the potential transfer of innovation.

Transaction Costs in Contract Relationships

Transaction costs in writing and monitoring relationships will clearly be high in any ICT contracts: uncertainty and bounded rationality, complexity, opportunism and asset specificity are all likely to make it difficult to predict future circumstances and deal with contingencies. Our concern here is to identify the transaction costs that might be minimised through certain types of contract relationships. First, clearly the market for computer services provision in the UK illustrated above is creating and reinforcing a 'small numbers' problem, which transaction cost economists argue will lead to imperfect competition. It is difficult for UK government agencies to drop those who have behaved opportunistically in the past, as the choice is increasingly small. Where companies have already held a contract for ten years – as in the case of EDS's contract with the UK Inland Revenue, it will be difficult to incentivise other companies to enter the contest, Indeed, the UK government is having to pay other companies to compete the award.

Is the Dutch model more competitive? Overall it seems, a small number of companies compete among themselves for small contracts; but government agencies and companies themselves undertake a number of strategies to reduce oligopolistic behaviour on the part of any one provider. Competition is carefully fostered by ministries, as they carve up preferred supplier agreements. Pink Roccade might seem to have a monopoly on data centre activity, but one commentator suggested that B.A.C, the data centre of the Tax Authority might enter the competition in the future, particularly if Pink Roccade became over-confident. B.A.C already deal with all citizens regarding their tax affairs, now on a monthly basis and all employers have to communicate with them. It would be a small step to go to the agency that deals with student loans, or the Housing ministry, and offer services to them. One evidence of current competition, but potential monopolisation in the future is strategic manoeuvring between Pink Roccade and Ordina to secure predominance in the process of automating payment of social security, by winning outsourcing contracts from large social security payment bodies (UVIs – Uitvoeringsinstantie) affiliated to the Ministry for Social Affairs. Plans have developed recently to combine all UVIs under one umbrella organisation (UWV), and Pink Roccade's position as prime IT contractor to the GAK Group will certainly increase its chances of market capture in provision of social welfare payments. The territory is set for a battle between Ordina and Pink Roccade for control of IT services in social welfare. Most key players seemed to think that the Dutch model of contracting will survive, owing to the premium set on local knowledge and the strategies of companies to resist takeover. One CEO suggested that as outsourcing markets grow, local managers will reassert the plurality of contracting. A possibility must be that EDS, in its anxiety to penetrate the Dutch market will take over Ordina or Pink Roccade. But both companies are alive to this possibility and

Ordina, after many approaches by EDS, takes care not to release too many shares to the market at once.

Second, complexity of large contracts can proliferate transaction costs, as policy-makers have to cross more and more organisational boundaries before interacting with those with understanding of systems development and how to establish citizen preferences. As noted above, as contracts have got larger and cover more functions, companies must team up with others to tender for them. In general, the largest computer services providers were slow to realise the potential of the Internet for government and poor at developing capability in this field, which relies on design and marketing as well as technological expertise. Likewise, mergers and acquisitions have been a distinctive feature of the computer services provision market since the 1990s when it became clear that government contracts required telecommunications expertise and larger vendors tried to buy their way into the Internet services market. So by 2003, most contract relationships in fact mask a whole network of smaller contract arrangements, overseen by a 'prime' contractor. In the UK, the largest of contracts are in fact a framework for a myriad of other relationships, as many contracts are bid for and won by consortia and 'prime' contractors sub-let parts of contracts to other contractors. Computer services providers are frequently undergoing mergers and acquisitions – which is how Cap Gemini swallowed up Hoskyns, Sogeti, Ernst and Young while partnering Cisco, Hewlett Packard, IBM, Microsoft, Oracle and Sun Microsystems. Thus each partnership is in itself a whole network of large and small providers orchestrated by the biggest companies.

In the Netherlands however, although preferred supplier arrangements mean that departments hold contracts with many companies – these tend to be bilateral arrangements and layers of contracts of this type do not form to anything like the same extent. Although preferred supplier arrangements can mean that one ministry has a relationship with many providers, each provider will be involved in a relationship directly with the ministry, rather than using a prime contractor as an intermediary.

Conversely, cross-cutting networks can reduce transaction costs of dealing across organisational boundaries. In the UK there is little movement of personnel between contracting partners. TUPE regulations meant that large numbers of staff were transferred to contract providers with the original privatisation of government IT agencies, meaning that any 'IT community' across the UK government was 'decimated' as one interviewee put it. These transferred staff are not usually kept working on the same systems but are diffused throughout the company, meaning that new networks did not reform around contract relationships.

In general, government in the Netherlands is a far more 'networked' affair than in Britain (or other countries studied through this research, the US or Japan for example).

During the 1980s network theories and open systems approaches provided alternative perspectives to business management approaches (Pollitt and Boukhaert, 2001). This characteristic is particular evident in the ICT community. Networks of IT professionals exist across ministries and private sector companies, with frequent transfers of high profile personnel and these networks reduce transaction costs of interaction. This process is aided by the fact that the market for computer services provision in the Netherlands is largely 'homegrown', so that personnel moving to companies are likely to stay within reach and expertise is not lost. Academics play a key role in these activities – the Netherlands has the highest number of professors of public administration relative to its size in Western Europe (Pollitt and Boukhaert, 2001: 245) and alone in Europe large teams of professors and researchers have studied the phenomenon of 'informatization' over a sustained time period. Many of these professors also work for government, sit on cabinet committees and carry out consultancy tasks for private sector computer services providers.

Agency Costs in Long-term Contracts

Agency problems arise when the contracting organisation (the 'principal') cannot be sure that the providing 'agent' will provide the services in the manner intended (Horn, 1995). Agents do not necessarily share the incentives of principals and monitoring them necessitates a system of ex post rewards and sanctions which, in the case of long-term contracts, stretches far into the future. The longer the contract period, the less incentives companies have to allow policy-makers access to the most up to date innovations in technology during the earlier stages of the contract. At contract tendering stage, clearly the incentives are there for companies to offer leading edge technologies at a competitive price. But over the contract periods, companies have few incentives to provide cutting edge technology (see figure below). Thus in the UK Customs and Excise department, the contract provider (ICL/Fujitsu) was still installing computer terminals without internet access under a contract signed in the late 1990s.
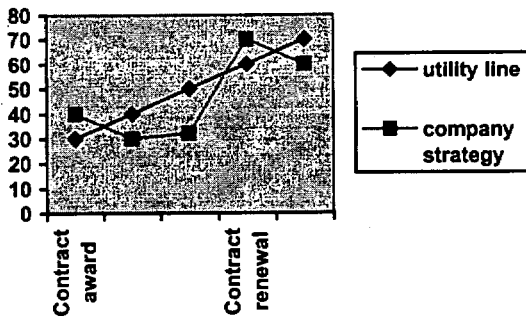
These types of agency costs are less likely to occur in the Dutch model. Contract relationships are small and shorter-term and represent multiple bi-lateral agreements between ministries or agencies and computer services providers which reduces spiralling agency costs. In-house expertise minimises asymmetries. Long-term relationships are sustained beyond the contract itself, with personal relationships developing over years and strengthened as officials move from public to private sector and even back again. These contracts are not big enough to be described as the so-called 'relational model'. But clearly companies have long-term relationships with government departments. Discussion takes place on a frequent basis, with interchange of personnel between public and private companies both on a short term basis and a longer term employment basis.

Evidently the Rhineland contracting model of the Netherlands or the Anglo Saxon model of the UK are not the only ones available and in all regimes, there will be variations on both transaction and agency costs. In Japan for example, another model exists where extremely long term contracts arise from a competitive tendering at the outset followed by many years of routinely re-let maintenance contracts. As Japanese departments have always, since computers first entered government, bought in computer systems in this way, they do not possess the expertise to write detailed specifications of contracts and companies are given a relatively free rein. Transaction costs are reduced through the length of contract, so that with respect to an individual system departments have very long-term relationships with companies based on trust. Systems tend to be standalone and stable over time, so that although they are huge and complex they are relatively reliable. Companies value the reputation they gain through holding contracts with the government, and therefore when problems arise they will spend huge amounts of resources on fixing the problem. Such arrangements are clearly more successful in addressing agency problems, in that incentives of contractors and providers are better aligned. However, opinions among transaction cost economists vary as to whether trust can be used as a basis for governance (Williamson, 1993 rejected the notion but see Nooteboom, 2001) - while trust may reduce transaction

costs, it may also create rigidities of loyalty and reciprocity (Nooteboom, 1999), which may explain why the Japanese government's systems are not particularly innovative.

The research reported here aims to make a modest start in increasing the scope of political economy literature to countries outside the US, such as Horn (1995). Such an endeavour should also incorporate the wide literature on innovation in private companies, particularly in the pharmaceutical sector, on which public administration largely fails to draw. The case of ICT contracting clearly highlights how important the field of innovation studies is going to be in the future. In Germany for example, economists have observed that firms are oriented towards more or less enduring network relations, which favour diffusion and incremental innovation, specific investments for quality and differentiated products which yield opportunities for a variety of (incremental) innovation (Nooteboom, 1999b: 794). Such an analysis could extend to their contract arrangements and could provide insights useful for institutional design in the future.

At first glance, such an enterprise would suggest that a move towards smaller contracts and the 'Rhineland' model of contracting would work in favour of innovation. Extrapolating from private sector analysis which suggests that there are 'reasons to favour relatively disintegrated structures, such as 'industrial districts' of mostly smaller firms, over integrated, large firms: to maintain variety and cognitive distance' (Nooteboom, 1999a: 795), it might be argued that huge contracts with huge firms will not lead to policy innovation.

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Contact Details:
Professor Helen Margetts
Director,
School of Public Policy
University College London
29/30 Tavistock Square
London WC1H 9QU
www.ucl.ac.uk/spp
h.margetts@ucl.ac.uk
tel. 0207 679 4980