

# Democracy, Ideology and Process Re-Engineering: Realising the Benefits of e-Government in Singapore

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## ABSTRACT

The re-engineering of governmental processes is a necessary condition for the realisation of the benefits of e-government. Several obstacles to such re-engineering exist. These include: (1) information processing thrives on transparency and amalgamation of data, whilst governments are constrained by principles of privacy and data separation; (2) top-down re-engineering may be resisted effectively from the bottom up. This paper analyses these obstacles in the way of re-engineering in Singapore – a democratic one-party state where legislative and executive power lies with the People's Action Party – and considers how that hegemony has aided the development of e-government.

## Keywords

E-government, democracy, ideology, pragmatism, Singapore, process re-engineering, interoperability, privacy, management.

## 1. INTRODUCTION

In the complex world of the 21<sup>st</sup> century, government is reliant upon accurate and timely information about its legislative and policy contexts. Whether that information is gathered by governments, or provided by citizens and businesses, the quality of management of that information is vital [14].

The idea of e-government is to manage information and deliver services using information technology (IT) where possible. Using IT should create a number of benefits for government, including the standardisation of processes, efficiency of information transfer and storage and effective search, not to mention the decrease in the costs of information management. There should also be visible benefits for the citizen, including the simplification of the interface with government, the ability to manage one's own case, and the lower taxes that should result from the reduction of the government's costs. These benefits are naturally balanced by the costs of creating giant computer systems, and of the re-engineering required.

The issues underlying re-engineering shouldn't be underestimated. It is very hard to turn staff-intensive and paper-based systems into automatic digital systems, especially when the

re-engineering might well be entrusted to the very staff whose jobs are under threat from the transformation, and whose incentives are at best mixed. It is also very hard to integrate systems across platforms to provide seamless service for the citizen. Furthermore, the chief driver of change is not pressure from without, but rather consciousness within government of the opportunity costs of not upgrading systems – a notoriously weak driver.

As a result 21<sup>st</sup> century e-government systems are often grafted onto 19<sup>th</sup> century bureaucracies. This locks in the high costs of integration, and tends to create islands of e-government rather than allowing an integrated approach across government.

Furthermore, in some polities, lack of trust in government, however well-founded, can lead to scepticism regarding the benefits of efficiency. Privacy issues loom large. Where a government possesses large quantities of information, the guarantor of privacy is often what we might term *practical obscurity*: the phenomenon that information, often paper-based and held in discrete repositories, though theoretically in the hands of governments is actually not useful because it cannot be found effectively in a timely way [14]. This is particularly true of information which does not exist explicitly in government archives, but rather could be deduced from information held in two or more other sources.

Recent work on e-government has shown that interoperability and re-engineering problems can interfere seriously with the effectiveness of putting government services online. In particular, studies have highlighted the need for standards to support interoperability, security and privacy requirements that stem from the amalgamation of databases and services, and process re-engineering to optimise the benefits of shifting governmental services online [1], [21], [22].

Because businesses have to perform such re-engineering of legacy systems, and because they face similar difficulties, it is tempting to treat government as a large business in the analysis of the problem. However, government has many drivers and difficulties of context that businesses do not face: in particular, whereas businesses have the (relatively) straightforward goal of creating value for shareholders within the law, governments need to meet a wide range of targets. Furthermore, different governments need (or want) to meet different targets.

This paper examines one key driver in a government's approach to the process of governing: *ideology*. Differing underlying ideologies create very different contexts for e-government systems. The form, and likelihood of success, of an e-government programme can depend quite dramatically on what ideological

assumptions underpin particular polities. We will examine the experiences of e-government in an unusual democracy, Singapore. Section 2 discusses the context for and experience of e-government in Singapore, while Section 3 looks at ideologies and party structures in Singapore to consider what effect these may have. Section 4 concludes.

## 2. GOVERNMENT AND E-GOVERNMENT IN SINGAPORE

### 2.1 The Impact of Geography and the Vision of Lee Kuan Yew

Singapore is a tiny country, under 700km<sup>2</sup>, containing about four and a quarter million people in 2004, of whom all but a few tens of thousands live in the city of Singapore. It is sandwiched between two much larger countries: Malaysia and Indonesia, each of which at certain times in their histories have been hostile. Ethnically, Singapore is mixed, with 76.3% Chinese, 13.8% Malay and 8.3% Indian, mostly Tamil. Securing Singapore's borders against invasion from without, and racial tension within, has been the central policy focus since independence [12].

The original Singaporean tactic for securing national borders was to become part of the original Malaysian federation with Malaya and other small British territories, a tactic driven by Prime Minister Lee Kuan Yew and his People's Action Party (PAP), which had won a decisive victory in the election of 1959. Serious discussions were underway by 1961, and the Federation of Malaysia was created in 1963.

However, this tactic failed: Singapore, having a largely Chinese population, was ethnically very distinct from the rest of Malaysia, and thanks to its strategic position on various trade routes was somewhat richer. Attempts to establish a common market within Malaysia between Malaya and Singapore foundered, and in 1965 Lee pulled Singapore out of the federation, declaring independence.

Singapore was now in a difficult position, a minnow in shark-infested waters. The focus of Lee's PAP government became security, and the vehicle for this was economic growth, which would secure the legitimacy of the government, reduce racial tension, and provide the funds for effective defence. As a result, much was sacrificed to the goal of effective government, which, while pursuing an open economy and eschewing disastrous import substitution, still maintained significant levels of control through government-linked companies such as the giant Temasek. The PAP government has tried to keep Singaporean industry at the forefront of economic development, most recently by emphasising a 'Knowledge-Based Economy' [12].

Singapore remains democratic, and has frequent and fair elections. However, the PAP party machine has maintained a ruthless grip on the nation's politics through various legal barriers and sympathetic media [16], and opposition parties have never, since independence, achieved more than a handful of MPs (some appointed by the PAP precisely to create an opposition) [13]. The situation, inconceivable in the West, is accepted because of the PAP's perceived success in delivering security and prosperity (GNP per head in 2003 was US\$21,230, about the same as the UK, and several times that of its neighbours) [8].

### 2.2 Putting Government Online

Singapore, an island with virtually no natural resources, has long viewed IT as essential for leveraging value from its human resources. The PAP's grip on government and the economy has enabled it to coordinate a series of IT strategies for Singapore stretching back to the National Computerisation Plan (NCP) in 1980 [20].

The aim of the NCP was to prime a nascent IT industry, and therefore focused on the creation of a pool of IT professionals. One important decision with ramifications was the early computerisation of the civil service in a programme beginning in 1982. Various schemes and plans followed the NCP, all aiming to increase awareness of IT in government, industry and the citizenry. By the late 1980s, e-government functions were appearing frequently, with their characteristic ability to save citizens' time and provide standardised information for the government – for instance, the One Stop Change of Address Reporting Service (OSCARS) meant that citizens only had to report changes of residence once [20].

By the 1990s, Singapore had a thriving IT industry, and was putting in place a National Information Infrastructure (NII). This connected computers in virtually every school, home and office, and enabled access and assimilation of information from many sources. By 2002, One Network for Everyone (Singapore ONE), a broadband framework comprising a high capacity network, and a set of advanced multimedia applications and services to exploit broadband capabilities, had been in place for five years. 99% of the island had access via ADSL, cable, wireless and fibre.

Having prepared the ground for an IT-literate culture, e-government developed quickly, with a relatively high take-up rate. In 2003, approximately 68% of tax returns were filed with the Inland Revenue Authority of Singapore (IRAS) electronically. By 2005, 95% of services that could be delivered electronically were online. Some services, particularly G2B services such as BizFile (business registration) and GeBiz (procurement), were 100% online by 2005, i.e. there was no analogous paper process. Singapore has always been innovative in the e-government field, and an early adopter: in their 2004 report on worldwide e-government trends, Accenture ranked Singapore joint second with the USA (behind Canada) [1].

There are many examples of innovations in e-government in the interface between citizen and government [10]. The eCitizen portal, set up in 1999, provides government information and services, and combines a number of agencies' services into a single point access. Winner of the 2002 Stockholm Challenge award, the average monthly hit on the portal was 8.7 million by 2003 [20]. A later generation of eCitizen, My.eCitizen, allowed personalised features and customisation. For the citizen, unification of e-services was promoted with a common authentication system – SingPass. SingPass allows access to a range of services using a single password. All government policies are tested by an online consultation process via a special portal launched in 2003 by the government's Feedback Unit. As noted above, the lack of effective opposition in Singapore has been seen, even by the ruling PAP, as leading to poor policymaking and the development of a gap between citizenry and government [13], [12]. Public consultations via the Feedback Unit

are one of the methods used to prevent this happening without the necessity of tolerating a Western-style opposition.

Process re-engineering has also been boosted via the PSi (Public Service Infrastructure), launched in 2001. PSi is a scalable infrastructure for government ministries and agencies to develop e-services, consisting of the components required for e-government application development (such as payment gateways, authentication systems, data exchange standards and so on). PSi abstracts away from particular issues in the development of e-services, and instead facilitates the conceptualisation of e-service implementation (and integration) with a uniform standard [20].

The Singaporean e-government strategy, therefore, is central in a number of ways to the PAP government's long-term strategy as a whole. First, governmental efficiency is an end in itself – the PAP's legitimacy is premised on the effective delivery of services, prosperity and security. Second, e-government is the way in which the critical function of political opposition is provided. Third, the infrastructure assembled by the e-government programme provides a *de facto* standard for e-government, and therefore (given the targets for getting governmental services online) for government itself. Finally, the use of a small number of portals such as eCitizen facilitates the strong centralisation that allows top-down control of the economy and society. As has often been argued, e-government promotes transparent and accountable government; the PAP is more than prepared to accept this, the *quid pro quo* being the opportunity to gather more information about its citizens and economy, and to apply that information more effectively [16], [18].

### 3. THE ROLE OF IDEOLOGY IN RE-ENGINEERING

#### 3.1 The PAP's Democratic Politics

Singapore is a parliamentary democracy. It has regular clean elections. However, the PAP dominates politics through various illiberal methods. For instance, criticisms of PAP politicians can lead to punitive defamation suits [12]. An unusual first-past-the-post multi-member constituency system, wherein large constituencies elect five or six members and the party that gets most votes gets all the seats, penalises those opposition parties led by one or two prominent figureheads (i.e. all of them). And, with the government's firm control of many aspects of daily life (most notably housing – the Housing and Development Board, one of the PAP's most successful and legitimising ventures, provides homes for about 86% of Singaporeans [12]), pressure can be brought at election time. Those estates that vote for the opposition might find themselves at the bottom of the waiting list for maintenance [15].

Nevertheless, there is nothing stopping Singaporeans voting for the opposition. The harassment of opposition politicians is relatively common across the world, and such harassment is often the cause of greater support; Singaporeans are relatively uninterested in party politics, and do not seem impressed by martyrdom [13].

As noted earlier, the PAP's legitimacy stems from the security and prosperity to which its 46-year rule has led. Furthermore, the PAP has the ability to reinvent itself; a fluffed election in 1984 (it got a 'mere' 63% of the vote) led it to tolerate more opposition voices.

Indeed, the PAP has never, unlike most dictatorships, tried to avoid *accountability* for the effects of its policies. Opposition is co-opted and neutralised; those opposition leaders who choose to reside beyond the pale, such as Chee Soon Juan, leader of the Singapore Democratic Party, seem strident and out of touch in comparison (cf. [4]). Singapore is not a liberal democracy in a Western sense, but it is a recognisable democracy.

#### 3.2 The PAP's Pragmatic Ideology

The PAP's ideological aim of covering as much available space as possible is not unlike Clinton's 'big tent' strategy. The idea is not to define one's ideological enemies and enrage one's supporters as a result (strategies favoured by, e.g. George Bush and Jacques Chirac), but rather to attract uncommitted centrists.

The PAP's aim was to naturalise its ideology, to make its contestable ideological assumptions appear to be common sense. This has been called the achievement of *ideological hegemony/consensus* [5]; the hegemony of the dominant ideology is achieved via creation of a consensus of citizens.

The PAP's ideology reflects its dominance in four ways [5].

1. Because it is so widespread – taken as 'common sense' – it is not systematic, in the way that, say Marxism or green theory are. Instead it works by contextual rationality; policies are designed for particular contexts, rather than based on governing principles.
2. There is a perceived unity of interests between government and governed. Policing is perceived by the governed as necessary for the continuation of their own welfare.
3. Because of the focus on contextual rationality, a number of different interpretations of the dominant ideology are available.
4. Because the ideology is dominating, it cannot be restricted to certain areas of life (e.g. politics). It must have a thoroughgoing influence.

Given that the aim of the PAP ideology is survival, only activities that contribute to economic development are legitimate. Compare this to, say, the United Kingdom, another pragmatic nation, which has no serious threat to its survival; its pragmatism can afford to express itself in allowing non-standard behaviour to flourish. Only recently did the British government begin to crack down on anti-social behaviour or Islamic extremism, and even then only since the ascent to power of Mr Blair, whose New Labour also aims for ideological hegemony/consensus.

This picture of the Singaporean national ideology, it should be said, is not explicitly endorsed by the PAP, but equally the focus on national survival and identity is recognisable to both government and citizen alike. Explicit statements of the PAP's distance from the classical liberalism espoused by the West, for example, can be found in [11] and, canonically, [24].

#### 3.3 Re-engineering Government

How do the PAP's political strategy and pragmatic ideology affect the implementation of e-government in Singapore, and in particular re-engineering? We will begin by providing a sketch of structural aspects of the Singaporean civil service, and then look

at some actual cases of the implementation of e-government programmes.

### 3.3.1 *The Singaporean Civil Service*

Singapore's civil service was initially trained by the British colonial rulers; though Singapore was not especially well-governed by Britain (descriptions of pre-independence Singapore are almost impossible to reconcile with the reality of today [5]), the legacy of a neutral, competent, incorruptible civil service is one that Singapore has in common with other former British territories. The PAP upon achieving power focused on retaining that legacy. A Political Study Centre, attended by civil servants at all levels of the hierarchy, instilled the PAP's pragmatism while exposing the remnants of Singapore's once widespread communism.

The civil service became imbued with the PAP's philosophy. First, selection by ability replaced selection by seniority, as part of the PAP's meritocratic philosophy of maximising the ability of its leaders. Second, as the distinction between the PAP and the government blurred, civil servants became increasingly loyal to both. Third, distinctions between public and private sectors were broken down. Power in Singapore is highly distributed between the party, parliament, the state bureaucracy, various statutory boards and government-linked companies. A top civil servant might reasonably expect a career that veered between any or all of these loci. And fourth, after the post-2000 focus on the knowledge-based economy, inflexibility and 'playing safe' were increasingly frowned upon [12].

In this context, the British-style civil service neutrality gradually evaporated; the value of that neutrality in a two-party system was always unlikely to be fully preserved in a *de facto* one-party state such as Singapore. Civil servants increasingly became tools of the ruling elite, and the interests of the two began to converge. Top civil servants would be identified very strongly with the PAP government [3], [23]. In such a situation, the chances of the civil service being a point of resistance to top-down institutional change are relatively slim.

### 3.3.2 *Re-engineering Government and Implementing E-Government in Singapore*

As a result, we could hypothesise that the implementation of e-government systems in Singapore would tend not to display the problems of re-engineering, typically caused by inertia, that we often see. The lack of incentive that civil servants can have to implement an e-government programme successfully is less obvious in the Singaporean system. A civil servant's loyalty is not to the department, or to his or her boss, but rather to a complex congeries of boss, department, minister, government, party and nation.

Take, for example, the response of the government in combating the spread of the SARS virus during the 2003 outbreak [7]. The rapid spread of SARS through Southeast Asia, and the disastrous effect this had on the economies of affected nations, demanded an effective and speedy response. However, the scale of the problem threatened to overwhelm existing systems. In the first place, one infected person worked at a widely-used wholesale market; furthermore, the first port of call of many patients was their local doctor of traditional Chinese medicine, not the hospital. The

efforts to combat SARS, including the tracing and quarantine of those who had been in contact with infected persons, required a level of information processing that could not be carried out by those originally charged to undertake them, the hospital staff (who of course had increasingly many other duties as well as the number of infections rose).

Very quickly – 43 days after the WHO's initial global alert and 4 days after the market incident – the Ministry of Health (MOH) had contacted the Ministry of Defence (MINDEF) about setting up a system for monitoring the health crisis. The Defence Science and Technology Agency (DSTA), a specialist agency for delivering IT solutions for command and control problems, was a statutory board under MINDEF. An initial infrastructure was set up by DSTA within hours.

There are a number of interesting factors from the point of view of process re-engineering. For example, the DSTA pointed out that MOH's information processing operations wouldn't scale up even with the technology injection as they were not streamlined enough; much of the information was either in hard copy or unstructured. In the event, the DSTA built a case management system in two weeks, with a complex architecture covering contact tracing, epidemiology, disease control, frontline operations, and even the provision of leave of absence from work for those in quarantine. Nearly 200 different data formats needed to be resolved to do this [7]. What is extraordinary is that MOH cooperated fully with the DSTA's re-engineering of its information management; surely the experience that one would expect in most ministries in most countries would be inertial resistance to "outside interference" from "people who think they know better" (cf. [9], [17]). The structural properties of the Singaporean civil service are a crucial variable for explaining this lack of territorial behaviour; the internal ethos of, in this case, the MOH is quite sacrificeable in this context to the 'national' requirement of combating SARS.

In a wider sense, cyclical models of software development can be unrealistic, in that in effect it is often the case that one side (either the developers or the users) dictates to the other. For example, in the UK, a number of large-scale government automation initiatives have floundered because the treasury has insisted on micromanaging the process, which has prevented flexible software development. But in the Singaporean context, genuinely cyclical interactions between developers and users are ideologically sanctioned [6].

Another important variable relating to the success or otherwise of process re-engineering is the interface with the public. MOH's response to SARS clearly has an aspect of this, but the main focus of the effort was in more efficient information processing. Any dealings with the public, particularly in e-government, need to be flexible and adaptable in very dynamic and complex environments. A portal needs to be usable by novices and experts alike, and needs to be responsive to unanticipated demands. The model – a very typical model – implicit in this account is an agency distributing services to many clients. And on such an account, re-engineering behind the scenes may well be painful and slow, especially if the workers in the agency itself see little of value emerging from them.

However, the unifying and context-sensitive ideology of the PAP can aid process re-engineering even here, as we see in a study of

the development of the IRAS electronic tax return filing system [19]. The move from a bureaucratic structure, via increased communication with clients, to genuine electronically-mediated dialogue also facilitated a shift from an information-processing organization to one that could anticipate and respond to new requirements. Eventually, IRAS's processes were able to take advantage of the network communication structures that electronic systems make possible. Instead of all communication being one-to-one, wider networks could be exploited.

The effect of reciprocity shifting from a two-way to an n-way model is quite dramatic. For instance, in a two-way workplace tax relationship, employees are contacted by IRAS, and then contact their employer for documentation and details of the past year's work. On a network model, there can be an immediate transfer of information from the employer to IRAS, overseen by the employee. The efficiency gains for all are large; whereas the efficiency gains from a purely reactive system can also be impressive, they come from increased operational efficiency (and therefore largely internal). Proactive systems can create value not only for themselves but with other stakeholders with which they are networked. Ultimately, IRAS hopes to establish a paperless tax filing paradigm where tax information is channeled automatically into the relevant part of the e-filing system [19].

IRAS achieved these benefits in a number of ways, for example by inviting feedback. But its context also changed; it found itself out of governmental hierarchy and into a network. As Tan and Pan point out, 'e-transformation is an essential step in altering the ... uncompromising and uncompetitive nature of bureaucratic institutions by revolutionizing the relationships between the organization and its stakeholders. Moreover, the competitive edge to be obtained from any e-transformation strategy is intricately tied to the degree of connectivity between the organization and its stakeholders' [19]. Once again, the structural properties of IRAS, driven by the PAP's pragmatic ideology, diminishes the likelihood of territorial behaviour, and increases the probability of such connectivity flourishing. The senior officials in IRAS are as likely to come from, or go back to, politics or business as up through the civil service hierarchy. But the PAP's focus on the importance of the nation as a whole also helps stop such a network simply becoming a ruling cadre; the political dimension is never absent. The civil service in Singapore is overtly political, and thereby more responsive to citizens' needs than a hands-off bureaucracy [12].

Note also that in both cases discussed here, privacy issues would loom large in any liberal democracy. The networks that IRAS wishes to set up would be offset by the need, in a polity where privacy was valued and suspicion of public institutions was endemic, to ensure that information flow was restricted. Indeed, the efficiency gains from data-sharing in e-government are often unavailable in countries where the government is not trusted to invade privacy (the UK's latest plans, for example, make it clear that data-sharing is an important issue [21], [14]).

#### 4. CONCLUSIONS

The purpose of this paper has been expository rather than normative. We do not suggest the adoption of a PAP-style pragmatism as a first step to effective e-government. Rather, we have argued that some of the most common hurdles to the re-engineering of the processes of government necessary for

implementing e-government have proven less problematic in the case of Singapore. This has been, in part, because of the strong pragmatic and nationalistic ideology that values efficiency, grafted on top of an uncorrupt civil service. The effectiveness of the PAP government is a key legitimizing factor for its illiberal policies – were it not effective it would be at risk of rejection at the ballot box (unlike governments in many single-party states). Such legitimization also sanctions the government's greater use of information, despite the invasion of privacy this entails.

Via the examination of case studies we have seen how this ideological framework provides a number of advantages for the development of e-government. First, the reach of re-engineering is less limited in the Singaporean context because the inter-departmental and agency barriers are extremely porous, thus allowing seamless collaboration across agencies (rather than the replication of governmental structures behind the scenes [7]). Second, efficiency is at the core of the process. Structures are capable of being easily remodeled without fear of creating territorial resentment within agencies. Finally, the porous nature of the system of government and the pragmatic approach that drives it makes it very malleable. It can be adapted and adopted to changing circumstances very quickly, as the SARS example illustrates.

The desirability of such a system depends, of course, upon the willingness to trade off the benefits against the virtues of a more liberal form of democracy. How that trade off should be calculated is not something we have considered herein. What we have shown, however, is that ideology plays a surprisingly important role in the understanding of the cost structure of e-government processes. In that case, one might expect that hegemonic, centrist ideologies would support e-government rather more effectively than antagonistic ones.

#### 5. ACKNOWLEDGMENTS

The work reported here was supported by an Economic and Social Research Council Award for the project 'Justice On-line: Distributing Cyberspace Fairly' (Award no. RES-000-22-0563). Kieron O'Hara is supported by the Advanced Knowledge Technologies (AKT) Interdisciplinary Research Collaboration (IRC), sponsored by the UK Engineering and Physical Sciences Research Council under grant number GR/N15764/01.

Our thanks are due to the Singaporean Ministry of Finance, and the Feedback Unit for their great help in our research. Thanks also to Prof. Shan L. Pan and his group, whose work in chronicling the development of various e-government initiatives in Singapore has been particularly helpful. Of course, neither the government nor Prof. Pan has any responsibility for the use we have made of their work.

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