

The London School of Economics and Political Science

**ON PUBLIC VALUES AND INFORMATION TECHNOLOGY IN  
GOVERNMENT: A CRITICAL DISCOURSE ANALYSIS OF  
TRADE REGULATIONS IN MEXICO**

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# ON PUBLIC VALUES AND INFORMATION TECHNOLOGY IN GOVERNMENT: A CRITICAL DISCOURSE ANALYSIS OF TRADE REGULATIONS IN MEXICO

## ABSTRACT

The use of the internet and related information and communication technologies (ICT) in public administration (known as ‘e-government’) has gained notable space within processes of public sector reform. Arguably, ICT provide an attractive strategy to reorganize internal government tasks, routines and processes, and to make them more efficient, responsive as well as accountable to citizens. Yet, the linkages between public values and e-government programmes remain understudied or taken for granted. My research focuses on this particular aspect of public sector reforms and organising. It engages with the debates towards modernisation of central government services while contributing to discussions of the relation between technologically induced programmes and public values over time. Using critical discourse analysis, I trace the discourses on public values and technology within a longitudinal case of a technology-enabled platform to facilitate foreign trade regulations in Mexico—the Mexican Single Window for Foreign Trade. In my empirical analysis, I examine a combination of key government texts and extensive data from fieldwork to address two related questions: *what* public values are presented, enacted or marginalized during the trajectory of the case, and *how* these values are enacted and operationalised into technology over time.

The analysis reveals four distinctive discourses on public values and technology: ‘technical efficiency’, ‘legality and honesty’, ‘robustness’ and ‘(forced) cooperation’. The analysis shows that while the technical efficiency cluster—commonly associated to the new public management ethos—is dominating, it cohabits with and is reinforced by other values more broadly related to traditional public administration and the bureaucratic ethos—that is, legality and honesty. In addition, the analysis shows that these four distinctive discourses have been materialised in technology in different degrees, giving rise to tensions and contestation over time. In light of the findings, I draw implications for theorizing public values and technology innovation within public sector reforms in a given context.

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## ABBREVIATIONS

AMECAFE	<i>Asociación Mexicana de la Cadena Productiva del Café</i> (Mexican Coffee Association)
APEC	Asia-Pacific Economic Cooperation
CAAAREM	<i>Confederación de Agentes Aduanales de México</i> (Association of Custom Agents, Mexico)
CDA	Critical Discourse Analysis
CEPAL	The United Nations Economic Commission for Latin America and the Caribbean
CFC	<i>Comisión Federal de Competencia</i> (Mexican Competition Authority)
COCEX	<i>Comisión de Comercio Exterior</i> (Foreign Trade Commission)
DGCE	<i>Dirección General de Comercio Exterior</i> (General Direction of Foreign Trade, Ministry of Economy)
DOF	<i>Diario Oficial de la Federación</i> (Official Diary of the Federation)
FIEL	<i>Firma Electrónica Avanzada</i> (Advanced Electronic Signature)
GATT	General Agreement on Tariffs and Trade
IADB	Inter-American Development Bank
ICT	Information and communication technologies
INAH	<i>Instituto Nacional de Antropología e Historia</i> (National Institute of Anthropology and History)
INBAL	<i>Instituto Nacional de Bellas Artes</i> (Institute for Fine Arts)
INEGI	<i>Instituto Nacional de Estadística y Geografía</i> (National Institute for Statistics and Geography)
ISO	International Organization for Standardisation
NAFTA	North American Free Trade Agreement
NPM	New Public Management
OECD	Organisation for Economic Cooperation and Development
PAN	<i>Partido de Acción Nacional</i> (National Action Party)
PND	<i>Plan Nacional de Desarrollo</i> (National Development Plan)
PPP	Public–private partnership
PRD	<i>Partido de la Revolución Democrática</i> (Democratic Revolutionary Party)
PRI	<i>Partido Revolucionario Institucional</i> (Institutional Revolutionary Party)
PROMAP	<i>Programa de Modernización Administrativa</i> (Modernisation programme for the Public Administration)
SAGARPA	<i>Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación</i> (Ministry of Agriculture)
SALUD	<i>Secretaría de Salud</i> (Ministry of Health)
SAT	<i>Servicio de Administración Tributaria</i> (Tax Administration Authority)
SCHP	<i>Secretaría de Hacienda y Crédito Público</i> (Ministry of Finance and Public Credit)
SE/ME	<i>Secretaría de Economía</i> (Ministry of Economy)
SEDENA	<i>Secretaría de la Defensa Nacional</i> (Ministry of Defense)
SELA	Latin American and Caribbean Economic System
SEMARNAT	<i>Secretaría del Medio Ambiente y Recursos Naturales</i> (Ministry of the Environment)
SENER	<i>Secretaría de Energía</i> (Ministry of Energy)
SEP	<i>Secretaría de Educación Pública</i> (Ministry of Public Education)
SICEX	<i>Sistema Integral de Comercio Exterior</i> (Integral System of Foreign Trade)
SMEs	Small and medium enterprises
SRE	<i>Secretaría de Relaciones Exteriores</i> (Ministry of Foreign Affairs)

TPA	Towards a paperless administration programme
TQM	Total Quality Management
UN	United Nations
US\$	US dollars
VUCEM	<i>Ventanilla Unica de Comercio Exterior Mexicana</i> (Mexican Single Window for Foreign Trade)
WB	World Bank
WEF	World Economic Forum
WTO	World Trade Organisation

## 1 Chapter One: Introduction

Questions of public values and their effects have gained greater scholarly and social prominence in recent years. With growing budget constraints for governments and increasing income inequalities, the search for mechanisms that can deliver greater value for society is more urgent than ever. The use of internet and related information and communication technologies (ICT) in government may be one of these mechanisms. This thesis broadly addresses these concerns and seeks to explore the connections between public values and ICT over time.

Government use of ICT has become of critical importance. Given the procedural nature of many government tasks and the central place that information storage, manipulation and communication occupy within the activities of public sector bureaucracies (Dunleavy *et al.* 2006, pp. 10–12), the use of the internet and related ICT provides an attractive strategy to reorganize tasks, routines and internal processes, as well as a low cost medium to reorganize interactions with citizens (Fountain 2001, Chadwick 2003, 2007, Chadwick and May 2003, Bhatnagar 2009, Cordella and Iannacci 2010, Cordella 2007). Arguably, ICT adoption in the public sector (known as ‘e-government’) offers new potential avenues for making government action more efficient and responsive as well as accountable to citizens. Yet, e-government is a complex undertaking; research in the field suggests there have been overly optimistic claims regarding the actual benefits that ICT have delivered in and for governments (Coursey and Norris 2008, Heeks and Bailur 2007, Yildiz 2007, Norris 2010).

My research examines the connections between technology innovation<sup>1</sup> in the remaking of public sector organisations. Early writings about e-government—from the 1990s to mid-2000s—have provided descriptive accounts of what is happening, while being less explicit in unpacking relations between processes, actors’ interactions and broader institutional contexts (Norris and Lloyd 2006, Heeks and Bailur 2007, Yildiz 2007,

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<sup>1</sup> I use the term ‘technology innovation’ and ‘e-government’ interchangeably throughout my dissertation to refer to the use of the internet and related ICT in government. I expand on this term later on the chapter.

Harris 2011). A considerable amount of empirical research has been conducted in e-government recently, but the drivers, causes and contingencies as well as a theorisation of the role of ICT in the reconstruction of public organisations remain poorly understood. In particular, despite its normative prescriptions, it is not empirically clear what sorts of public values are given priority in processes of e-government and how the linkages between public values and technology unfold over time.

This thesis contributes to this last area. It seeks to engage with the debates on the modernisation of central government services while contributing to understanding and explaining the relation between public values and technology innovation. It offers a detailed empirical case of ICT and institutional change that relates to broader public sector modernisation reforms in Mexico. More precisely, the case focuses on the processes of design and implementation of technology innovation in foreign trade regulations. The case looks at the developments towards building the Mexican Single Window for Foreign Trade (“*Ventanilla Digital de Comercio Exterior*”) that was officially initiated in 2008 based on previous efforts within government. The experience is grounded within a long process of economic liberalization that Mexico started during the early eighties, in which the fostering of the country’s international trade has been remarkably important for its economic model. Today, international trade represents almost 60% of the total GDP in Mexico, and giving its importance, any gains from trade, such as the facilitation of commerce, are considered crucial for improving the country’s overall welfare.

I claim that the significance of addressing public values and technology innovation needs to be understood in relation to the *discourses* of public sector reforms that have pervaded public sector organising in the last three decades. Thus, a concern with these points—technology innovation and public values—requires looking at different bodies of knowledge to bring them into conversation with one another. I refer particularly to theoretical insights on public values emerging from public administration research, the role of discourse in organising and the sociotechnical tradition within information systems research. I argue that, by bringing these seemingly disparate bodies of work together, the complex relation between public values and technology innovation can be unfolded and better understood.

To present the grounds for the research, the next sections introduce the main themes and key terms that I use in the dissertation. Section 1.1 focuses on the broad context and background that motivates my research questions. That is, pervasive modernisation reforms, a growing concern with public values and the ways these have been addressed—implicitly or explicitly—in e-government research. Then, section 1.2 offers the overarching details of my research approach and conceptual framework to provide grounding for the thesis. The goal of this section is to dive into the discursive lens that I build upon—critical discourse analysis—and its relation with the other dimensions of my study—public values and technology innovation in government. Finally, in section 1.3 I outline the structure of the thesis.

### 1.1 **On public values, modernisation reforms and e-government**

Public value as a research object is subject to different understandings, meanings and views across disciplines (Bozeman 2009, Williams and Shearer 2011, de Graaf *et al.* 2012). While I explore these issues in detail in Chapter Two, for the moment I want to clarify how I use the term *public values* in this dissertation. Based on the work of Barry Bozeman, *public values are understood as those providing normative consensus on the principles on which governments and policies should be based* (Bozeman 2007, p. 13). In this sense, efficiency, effectiveness, fairness and equality are common examples of public values that one can find in government.

In part, the reason why public values in government organising have received increasing academic attention is a response to concerns based on the spread of market fundamentalism in social life (Somers and Block 2005), and within governments in particular (Bozeman 2007, chap. 4). The latter can be best regarded as a consequence of the New Public Management (NPM) paradigm and related processes of reform in the public sector. As a means of bringing together the common grounds that this dissertation is based on, below I elaborate on the characteristics of NPM, its claimed associated values and the ways it relates to e-government research.

### 1.1.1 New Public Management and the rise of the economic individualism

E-government programmes flourished within an already complex phenomenon: a global wave of modernisation reforms in the public sector—New Public Management, as coined by Christopher Hood in 1991 (Hood 1991, Dunsire 1995, Gruening 2001, Pollitt and Bouchaert 2004, 2011, Diefenbach 2009). In response to the crisis of welfare state economies, NPM was initiated during the 1980s in leading reforming countries such as the UK and New Zealand, reaching a global scale during the 1990s (Aucoin 1995).

The advent of NPM resulted in ambitious targets: making governments more responsive, accountable, transparent and results-driven, as well as decentralized, disaggregated and efficient (Gruening 2001, Batley and Larbi 2004). Another characteristic of NPM has been the separation of politics and administration, an emphasis on business management practices and its reliance on individual rationalities and market-type mechanisms (such as outsourcing, privatization, customer orientation, incentivisation, competition and personnel management) in restructuring the operation of the public sector (Hood 1989, Gruening 2001, Batley and Larbi 2004). In a recent compilation, Christensen and Laegreid (2011, p. 4) summarize the above characteristics into four aspects of NPM: the efficiency drive; downsizing and decentralization; the search for excellence; and public service orientation.

“Reinventing government” has been another common phrase associated with these modernisation reforms. Coined by the famous work of Osborne and Gaebler (1992), “reinventing American government” meant making a more efficient, cheaper and effective government by means of *entrepreneurial government*. The way forward, the authors suggest, was a complete change in outmoded and inefficient bureaucratic processes. Among several normative prescriptions proposed by the authors, the most salient included a clear focus on results, a decentralized authority, and a notable reduction of bureaucracy with a promoted competition attitude in which citizens are redefined as *customers*.<sup>2</sup>The modernisation reforms have been germane to Mexico as well. In the

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<sup>2</sup> On the idea of citizen as customer, chapter 6 of their book proposes a clear message from its heading: “Customer-Driven Government: Meeting the Needs of Customer, Not the Bureaucracy”.

context of Latin American countries, the “Washington Consensus” remained a powerful reformist agenda broadly based in strong market-based approaches to economic and policy life.<sup>3</sup>

Despite the enumerated characteristics, NPM still means many things (Barzelay 1999, 2001, Bozeman 2007, pp. 76–8); it has appeared as a multifaceted concept that is difficult to define in non-ambiguous terms (Lodge and Gill 2011, pp. 142-3, Salskov-Iversen *et al* 2000). Yet, it is possible to discern a broad agenda: the “common point... is a deep respect for the use of market discipline in governance” (Bozeman 2007, p. 76).

In sum, these broader discourses—and the accompanying changes in government action—provide a basis to sustain that NPM has shifted value priorities in the following way: a departure from universalism, equity, fairness and resilience toward efficiency and individualism (Hood 1991, p. 15, Pollitt 2003, p. 28, Bozeman 2007, p. 78). Its influence on global modernisation reform agendas has been argued to have effects on e-government as well, as I shall review in the next section.

### **1.1.2 E-government and the values of reform**

These global reforms spread in parallel with another important social phenomenon: the diffusion of increasingly affordable networked technologies in the modern world (Castells 2001, 2004). The common NPM *motto* of a government that “works better and costs less” sat easily with the rise of e-government (Mayer-Schonberger and Lazer 2007, chap. 1). The Organisation for Economic Cooperation and Development (OECD) crystallised these ideas in its first book on e-government in 2003:

Reform of the public administration has been on the agendas of most OECD governments well before the advent of the term “e-government”. But e-government is an important component of today’s reform agendas because it: 1) serves as a tool for reform; 2) renews interest in public management reform; 3)

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<sup>3</sup> The “Washington Consensus” was a series of policy reforms promoted for crisis-racked developing countries by international bodies based in Washington (the International Monetary Fund (IMF), the World Bank, and the USA Treasury Department). The policies were based on the idea that “less government is better”, and it is in this sense that the programme can be broadly linked to the NPM spirit of market fundamentalism or neoliberalism. The Washington consensus was particularly powerful in the region and is perhaps less known in the European context.



highlights internal inconsistencies; 4) underscores commitment to good governance objectives. (OECD 2003, p. 41)

E-government can help administrations do their job better by reinforcing good governance objectives and administrative reforms are necessary if e-government is to be successful. E-government and reform are therefore mutually reinforcing. (OECD 2003, p. 25)

Arguably, most research on e-government is understood as a tool to reinforce the objectives of public administration reforms in many countries (OECD 2003, 2005), although the connection between broader institutional reforms and e-government is less explicit. E-government has been studied from many perspectives and viewpoints, from means to achieve something else (i.e. administrative reforms) or as an end in itself (Yildiz 2007). That is why e-government has been described as a *catchall tag* for the practice of using ICT in the public sector (Mayer-Schonberger and Lazer 2007, p. 5). The most common view of e-government is the generalized use of new ICT to provide better public services, to improve public administration performance and to broaden citizen participation and democratic processes (Fountain 2001, Heeks 2002, Gil-Garcia and Pardo 2005, Cordella 2007, Yildiz 2007, Bhatnagar 2009).

Thus, from a normative perspective, there have been many claims that e-government will make citizen-government transactions easier, cheaper and faster. Implicitly, the e-government vision embodies public values that are claimed to be similar to those of NPM: a business-like approach, the push for productivity and timeliness, responsiveness and a customer focus based on citizen's individual choices (Fountain 2001, Curthoys and Crabtree 2003, OECD 2003, p. 25, West 2005a, Cordella 2007).

However, claims about the universality of these public values are difficult to sustain. First, empirical research in e-government has shown many shapes, forms and evolutions: national and local appropriations of e-government programmes exhibit an important degree of variance that suggest (if not demonstrate) that context matters (see for example Fountain 2007, Madon *et al.* 2007, Ahn and Bretschneider 2011, Lee *et al.* 2011). The definition of public values itself suggests that they should be assessed in their social context. Second, findings from longitudinal case studies suggest that models are not simply linear and that political, institutional and organisational forces mediate the enactment of goals, values and political agendas (Fountain 2001, 2007, Dunleavy *et al.* 2006, Bloomfield and Hayes 2009). Third, while we have gained important insights on

the relation between certain public values and e-government (i.e. on discretion, accountability, productivity), there is a dearth of empirical research that broadly study the types of public values associated with e-government programmes over time.

Thus, if e-government is assumed to be part of broader plans of reform, what is the connection between technology innovation and the values of reform? Despite the importance of discourses on modernisation reform and concerns with their effects and value shifts, very few authors have provided detailed empirical accounts of technology innovation in the public sector and its linkages with broader political and ideological agendas (but see McNulty and Ferlie 2004, Bloomfield and Hayes 2009, and Harris 2011 for notable exceptions). Moreover, the particular case of mapping public values and unfolding their relation with technology innovation has not been empirically assessed. In other words, given a context of reforms that privileges certain clusters of public values, the evidence on which ones are *actually* followed in different contexts remains elusive as well as the implications on different aspects of government design and action. This is precisely what I attempt to explore in my research.

## 1.2 **A discursive lens to study public values and e-government**

In line with the above observations, this thesis is concerned with understanding and explaining two related issues, comprised in the main research questions: *What sorts of public values underlie a central e-government initiative in Mexico? How does the relation between public values and e-government unfold over time? What can we learn from Mexico?*

My study begins with the premise that there is a relational link between public values and technology innovation; that is, public values shape, and are shaped by, technology. As mentioned, I work with a narrow definition of public values provided in the work of Bozeman (2007). However, the definition does not eliminate the complexity of studying public values empirically (see for example Rutgers 2008). Public values—as values in general—are elusive and intangible and researchers need to find ways to sort them out empirically. To deal with these issues, I adopt a discursive lens—in particular, *critical discourse analysis*—to address my research questions, which I apply to the longitudinal case in Mexico. I deal with these issues in depth in Chapter Three, although I briefly outline them here to provide the groundwork for my theoretical lens.

Critical discourse analysis (hereafter CDA) is a theoretical approach to study how discourse figures within processes of social change (Fairclough 2003, p. 205, 2010). My elaboration of CDA draws on a particular stream developed by the work of the sociolinguist Norman Fairclough and colleagues (Chouliaraki and Fairclough 1999, Fairclough 2003, 2010). CDA has become a well-established framework to examine the use of language in the text and talk that underlie the dynamics of organising. This, in part, has been a consequence of a more general linguistic turn in social science research (Van Dijk 1997, Alvesson and Kärreman 2000a, Vaara 2010). Despite its popularity in organisation and management studies, this version of CDA remains largely unknown within IS research (but see Thompson 2004). I claim that CDA can offer useful insights in addressing my research questions and conducting my empirical work.

CDA emphasises the importance of a close and detailed analysis of texts and at the same time, the integration of the analysis into broader social processes (Fairclough 2005, p. 924). From this perspective, my approach to studying discourse in organising is therefore three-dimensional: it links key government texts to broader discourses on public values, locating them within a particular *historical* and *social context*. Discourse analysis is, then, suitable to consider context seriously, and to elaborate on the necessary contextual features of public values, as provided in the definition that I use in my dissertation. In addition, a consistent theorisation of technology is provided, based on a sociotechnical perspective within e-government studies and organisation studies in general (Fountain 2001, Kallinikos 2006a, Cordella and Iannacci 2010, Bloomfield and Hayes 2009, Danziger *et al.* 1982, Avgerou 2002), which is compatible with my overall premise: that technology shapes and is shaped by public values. On this basis, my work aims at extending the sociotechnical tradition within information systems in the public sector while accounting for public values. A summary of the three different research streams that I bring together in my dissertation is provided in table 1.

<b>Object of research</b>	<b>Conceptual concerns</b>	<b>Theoretical underpinnings and main authors</b>
Public values	What are public values? How are they defined? Where does one find them?	<b>Normative public values</b> Bozeman 2007, Beck Jørgensen and Bozeman 2007, Hood 1991
E-government (technology innovation in the public sector)	What changes do ICT bring in public sector organising?	<b>Sociotechnical perspectives in e-government</b> Fountain 2001, Danziger et al 1982, Bloomfield and Hayes 2009
Discourse in organising	How does language influence organising? How are discourses produced, interpreted and materialised in organisations? What power struggles emerge from dominating discourses?	<b>Critical Discourse Analysis</b> Fairclough 2003, 2005, 2010, Chouliaraki and Fairclough 1999, Vaara 2010, Phillips <i>et al</i> 2004

**Table 1: Objects of research and main theoretical underpinnings used**

I argue that bringing together such wide range of theoretical sources is possible given the flexible and open character of CDA, which advocates for a *transdisciplinary* approach; that is, to work in dialogue with different disciplines to theorise particular objects of research (Fairclough 2010, chap. 9). I argue that CDA is a valuable aid to study how claims about public values and technology innovation draw from broader institutional discourses and national priorities, and how they are made to work at specific organisational levels and micro productions of discourses (texts and talk).

There are further terms that need clarification. In my thesis, I talk about *organising* to emphasise the dynamic nature of the processes underlying public values and e-government as well as discursive practices. This builds not only on the dynamic and emergent nature of ICT that I use in my theorisation of technology (Orlikowski and Iacono 2001, pp. 131-132) but also on the dynamic nature of discourse in organisational processes (Fairclough 2005).<sup>4</sup> In addition, I use the term ‘*technology innovation*’ and ‘*e-government*’ interchangeably throughout my dissertation to refer to the use of the internet and related ICT in government. In turn, I define ICT as those technologies for the

<sup>4</sup> Some scholars tend to associate the idea of organizing to Karl Weick’s work and a particular lens to study organising processes. This is not the way I understand it here.

processing, storage, and transmission of digital material, which consist of ensembles of hardware and software with distinctive feature sets, that allow physical storage and logical representations of different forms of data (Mutch 2010, p. 507).

### 1.3 Conclusion and Structure of the Thesis

Building on public values concerns and the questions that I state in this thesis, the goal of my research is to bring different bodies of knowledge into conversation in order to analyse and explain a set of related issues: which public values are dominant in a particular technologically enabled programme in Mexico, how this happens and what implications can be addressed from the case.

The remainder of the dissertation is organised across seven additional chapters. **Chapter Two**, as anticipated, elaborates on the issues that I outlined briefly in this introduction. That is, it provides the theoretical underpinnings of public values research, its different streams and ways to study them empirically. The second part of the chapter develops a focused literature review on the types of public values that can be found in e-government research. Overall, Chapter Two focuses on the key areas of literature that provide the background for the research inquiry—public values and the current state of the art in e-government research.

**Chapter Three** presents the research framework. The aim of this chapter is not only to provide the theoretical foundations of the version of critical discourse analysis that I use in my dissertation, but also to elaborate on the ways it accounts for technology and public values. To do so, the chapter develops an understanding of the relation of technology innovation in public sector administration that, in conjunction with public values research, is incorporated in the CDA framework in a *transdisciplinary* manner. I place emphasis on theory that can help to describe, analyse and explain the content of the relation between public values and technology innovation as well as its dynamics over time and in a given context.

The particular choice of a discursive lens to study the relation between public values and technology implicates a series of methodological decisions as well. In **Chapter Four** I provide details on the strategy of inquiry that I followed to conduct the

longitudinal case of a technology-enabled platform for the administration of foreign trade regulations in Mexico. In particular, the chapter elaborates on the philosophical assumptions underlying my theoretical choices, the data sources and data collection as well as the specific CDA tools that I applied to analyse the case. I also place emphasis on explaining the reflexive character of the research methodology that I follow. Taken together, Chapters Three and Four lay the foundations to study the longitudinal case that I present later on.

**Chapter Five** elaborates on the research site and the case and is divided in two parts. Part One offers a detailed account of the economic, political and administrative reforms that Mexico has carried out in the last 25 years. I pay particular attention to economic reforms on trade and other salient contextual factors that are helpful to pin down the implications of global discourses of reform. The significance of the case relies on the fact that is congruently framed within the neo-liberal spirit of modernisation reforms that I briefly commented on at the beginning of this introduction.<sup>5</sup>Part Two of Chapter Five documents the process of constructing the Single Window for Foreign Trade (2008-2012), building on the previous technological developments that the government had conducted since 1995. The story is presented in three different phases, and it provides technical details as well as important surrounding factors in light of what I elaborated in Part One. On June 2012, the Single Window started operating, making digital transactions mandatory. To account for these latest developments, the chapter includes a postscript written in September 2012.

In **Chapter Six**, the case study is analysed using critical discourse analysis. Focusing on the trajectory of key texts of the Single Window, the chapter unveils a series of clusters of public values and technology, and elaborates on their structural characteristics. Based on extensive empirical material from my fieldwork, I offer an in-depth elaboration of each of the discourses on public values and technology innovation in a systematic way: I present the common discursive features of each cluster, I provide evidence on where they emanate from, and show the ways—and the extent to which—these discourses are

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<sup>5</sup> Following Bresser-Pereira, by ‘neo-liberal’ this dissertation means simply market-oriented reforms, in which competition and individual choice play a central role; as such, it allows for different types of reforms, ranging from the ‘ultra-liberal’ ones as those implemented in New Zealand since the 1980s, to the ‘social-democratic’ reforms of Brazil (Bresser-Pereira 2004, p. 120).

consumed and materialised in technology. The chapter ends with a table that summarises the main findings.

**Chapter Seven** focuses the reader at a different level in order to explore the implications raised by the analysis. In terms of CDA, I claim that while broader discourses on public values do have an influence on technology design and implementation, *technology internalises and is internalised by* discourses on public values. Building on the findings from the case, in this chapter I derive more general implications for an increased understanding of the relation between public values and technology. I particularly elaborate on the notions of *interdependence*, *political* and *dialectical* character of the relation between my objects of research.

The final chapter provides concluding remarks. **Chapter Eight** presents an overview of the main themes covered in the thesis, its findings and contributions. In appreciation of the implications of my research journey using CDA, I include a reflection on the research approach, lessons learned and limitations. The conclusions close with a number of ideas for follow-on research that arose during the course of my research project.

## 2 Chapter Two: On Public Values and E-government

There is no more important topic in public administration and policy than public values. (...)—the topic is so fundamental as to be unmanageable. (...) [I]f researchers can advance, even incrementally, the study of public values beyond its current ambiguous and unbounded status, then those advances could serve many different theory developments and even practical purposes.  
*Beck Jørgensen and Bozeman 2007, p. 355*

Beck Jørgensen and Bozeman's quote illustrate well one of the aims of this dissertation: contributing not only to identifying dominant public values in a technologically induced public sector reforms but also to assess how the relation between public values and technology unfolds over time. The chapter builds substantially on public administration literature, as it is the field that compiles more generally the debates and developments on public values. It also draws substantively on literature on e-government to present the strengths and some shortcomings, specifically, the lack of an extensive, longitudinal study of discourses on a wide-range public values and technology in a specific context. In this chapter I seek to convince the reader that studying the linkages between public values and technology offers a fruitful niche for research in e-government studies. In addition, I claim that while e-government research has advanced knowledge in many ways, it usually takes the public values of reform for granted, or studies them with limited attention to potential value conflicts from a holistic perspective. The evidence that I offer is based on a substantial and focused review on these issues.

The chapter is divided in five sections. Section 2.1 expands on the notions and different streams of work associated to public value research. From there and taking my research concerns into account, section 2.2 develops on normative public values as a means to start with a list of values that can be mapped in the literature and serve as the starting point of empirical work. I therefore introduce two works: an inventory of public values distilled from scholarly literature in public management, and the clusters of administrative values in public administration. The section 2.2 concludes with the importance to account for context when studying public values. In section 1.3, I expand



on the general ways e-government research has approached public values of modernisation reforms. I review critically the general trends of the literature on the matter. Then, section 2.4 combines the list of public values from public management research and links it to specific studies produced in e-government that can be related to different categories of values. The last section finishes with concluding remarks.

## 2.1 **The rise of public value as counterbalance of market-driven modernisation discourses**

As I anticipated in the introduction, in part, the growing interest on public value research appeared as a response to concerns about the over-dominance of the economic individualism and neoliberal ideas in public life and government organising (Bozeman 2007). Globally, the influence of market logics into public sector reforms was acknowledged in scholarly debates as the New Public Management (NPM). Despite its ambiguity (Barzelay 1999, 2000, 2001, Bozeman 2007, pp. 76–8) and multiple meanings (Salskov-Iversen *et al.* 2000, Lodge and Gill 2011, pp. 142–3), the advent of NPM brought in a new global discourse which implied “a break with a century-old tradition of distinguishing sharply between the values and practices of the public and private sector” (Salskov-Iversen *et al.* 2000, p. 184). Reforms that emphasises market types of governance, privatisation and contracting out make increasingly important to consider classic public values too (Beck Jørgensen 1999, p. 580). This has opened the recent debate towards alternative visions of public value in government.

### 2.1.1 **Public values: three streams of research**

Of course, that notions such as public interest or public values are not new is a non-controversial statement. For example, Easton suggested in 1965 that “public policies are the means through which politics allocate values” (cited in de Graaf and van der Wal 2010, p. 624). Bozeman (2007, p. 1), in turn, states that notions of ‘public interest’ or ‘common good’ have already been discussed in Aristotle’s *Politics*. Despite not being new, a growing body of literature on public value has gained place in public management and political science debates that has suggested a new positioning, leading to different stream with diverse understandings and focus (Beck Jørgensen 1999, Davis

and West 2008, West and Davis 2011, Williams and Shearer 2011). I shall review as follows, the main works that have inspired my research and my concern with the acclaimed shift in values that the NPM has ‘imposed’.

One comes from an on-going debate within the field of organisation studies discussing several aspects of the institutions and values of modern society, in which bureaucracy and post-bureaucracy debates are at centre (Courpasson and Reed 2004). The particular debate that is relevant for the research I propose here relates to the ethos of bureaucracy, and to the extent that the focus on efficiency and business-like values proposed by the advocates of the “Entrepreneurial Government” (and NPM) compromises the distinctive role of democratic governments as custodian of the constitutional procedures, equality, fairness and so on. Key contributors in this area include the work of du Gay (2000, 2003, 2004, 2005), Willmott (2011), Arellano-Gault (2010), and Olsen (2006), among others. Although this debate is not directly ‘speaking’ about public values, it has important implications for my research, and I will deal more in depth with some of these arguments in chapter 3. In particular, an important theoretical account from this perspective —and for the discussion of e-government— relies on the inadequacy of referring to NPM and bureaucracy as ‘absolute opposites’ as it has been assumed elsewhere (i.e. Persson and Goldkul 2010).

A second stream that has gained a dominant place in the public management literature is around the seminal book of Mark Moore, *Creating Public Value*. Moore’s work, initially published in 1995 in the USA, and updated recently, offers a (re)freshing perspective on the role of the state (Moore 1995, Benington and Moore 2011a). Moore’s initial piece (1995) was mainly concerned with creating a normative theory of what public managers *should do* to create public value given the particular circumstances they are immersed in. The concept “public value” relates to that of a public philosophy of governance that a society’s collective aspirations determine where public value lies (Moore 1995, p. 52, Barzelay 2000, p. 246). In this sense, public value proponents share the view of NPM in “looking for a more responsive, more innovative, more effective government” (Benington and Moore 2011a, p. 10), but unlike the NPM, they place the focus on the collective aspirations rather than the economic individualism of the neoliberal agenda.

In general terms, within this second stream, public value covers three main issues: what the role of government is in society, what roles public managers have to play within governments, and what techniques and practices public managers need in order to develop their roles. A growing literature on public value includes several positions, diverse understandings and fierce critics—i.e. public value as a new paradigm in public administration, as a heuristic device, or as an underlying theory for ‘networked community governance’ (Stoker 2006, O’Flynn 2007, Rhodes 2007, Alford and O’Flynn 2009, Rhodes and Wanna 2009, Benington 2011, West and Davis 2011). The fact that some of the ideas are still quite open (if not ambiguous) the current debate offers an opportunity to enhance its on-going developments in theoretical terms.

The idea of public value in Moore’s work, therefore, is more about managerial aspects of the public sector than about providing a stable definition. An implied corollary that is relevant for my work relies on the importance of widening the scope to democratic values (political, social, *and* economic) in public sector problems. Moore’s work has recently appeared in e-government research, showing some cross-fertilisations and potential avenues for future research (i.e. Cordella and Willcocks 2010, Grimsley and Meehan 2007, Center for Technology in Government 2011, Cordella and Bonina 2012).

The third stream of research refers to public values (in plural) and public interest. This research builds on the work of Bozeman (1987) and colleagues on *publicness*, and more precisely, on its normative part.<sup>6</sup> A useful conceptualisation that emerges from this work is a stable definition of public values—that I adopt in my research. In his book entitled *Public Value and Public Interest*, Bozeman defines public values as follows (2007, p. 132, emphasis added):

A society’s ‘public values’ are those providing normative consensus about (a) the rights, benefits, and prerogatives to which citizens should (and should not) be entitled; (b) the obligations of citizens to society, the state, and one another; and (c) *the principles on which governments and policies should be based.*

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<sup>6</sup> Normative publicness is defined as “an approach to values analysis assuming that a knowledge of the political and economic authority of institutions and policies is a prerequisite of understanding the potential of institutions and policies to achieve public values and to work toward public interest ideals” (Bozeman 2007, 18).

As I anticipated in the introduction, for the purpose of my work, I rely on the third part of the definition. From this view, public values can be considered as those basic *building blocks* of the public sector (Beck Jørgensen 1999, p. 581). Also, because my analysis is focused from the organisational perspective of government; that is, assessing which public values are actually pursued in the public sector, how specific values emerge and how they ‘travel’ over time. Then, considering public values in this way enables me to trace public values analytically and empirically.

Within this third stream of work, public values have been studied as clusters or inventories in both public and private organisations (Beck Jørgensen and Bozeman 2007, Bozeman 2007, van der Wal *et al.* 2008). This stream has also informed the latest developments within *publicness* theory and the integrative publicness framework for public management strategy and performance (Bozeman and Moulton 2011, Walker and Bozeman 2011).<sup>7</sup> Although there have been some recent cross-dialogues with the work of Moore, this line of research seems to have emerged and developed decoupled from it. As per e-government research, this stream of work does not seem to have been picked up yet.

These three streams, although quite disconnected in the literature, have the potential to offer a counterbalancing argument to the claim of value shifts in public sector reforms and their connections with technology induced programmes. Let me add why studying public values is important in government affairs, which e-government is implicated.

### **2.1.2 Why public values are important in public sector debates**

Following Bozeman (2007, p.64), the rationale for incorporating public values into debates of public management—in which processes of e-government are certainly part of—includes four justifications:<sup>8</sup>

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<sup>7</sup> The framework combines developments of two scholarly traditions within publicness (normative and empirical) and offers a heuristic device for strategic management of organizations—whether public, private or non-profit. It bases its analysis on public value mapping, an effort to elicit different public values in context.

<sup>8</sup> I have adapted these paragraphs slightly; also, in its original the fourth idea appeared in third place. See Bozeman (2007, p. 64).

1. *Public value* is something more than collective private value;
2. market-based expressions of public value are limiting;
3. (perhaps more controversial) government service sometimes offers something not easily attainable in operations and participation in efficient markets, namely individuals' commitment to the collective good;
4. the fact that public values are ideals is not a sufficient justification for ignoring them or assuming they cannot be systematically studied.

In line with the first three ideas, Bozeman offers a succinct discussion on the limits of economic theory (market failure and related economic efficiency approaches) to choosing sector roles (Bozeman 2007, p.63). “*Often economic values are literally irrelevant to public choices.* In many instances markets are highly competitive, pricing is efficient, and enormous public problems remain. (...) When considering public value, market failure is often simply not the point. Nevertheless, market-based reasoning often dominates public policy deliberation” (Bozeman 2007, p.65, emphasis in the original). These ideas are echoed in the work of Benington and Moore (2011a, p.10), who differentiate themselves from the economic individualism by suggesting that “the proper arbiter of public value is *society as a whole* acting as best as it can through the imperfect processes of representative government” (emphasis added). In turn, du Gay reminds us (2004, p.54) that, “because a system of representative government requires officials to act as custodians of the constitutional procedures and values it embodies, it cannot frame the role of public administrators simply in terms of economy, performance, audit, responsiveness and delivery.”

Summing up, despite the importance and growing interest in public value research, analytical and empirical analysis of public values remain a challenging area. It is been claimed that current debates on public value rarely focus on identifying a set of common values or in discussing their meanings (Rutgers 2008, Bozeman 2007, Beck Jørgensen and Bozeman 2007). Recall that my research is concerned with distilling and assessing public values in a given context. Moore’s work (Moore 1995, Benington and Moore 2011a) provides useful insights on effective public management to achieve a given public values. However, their work is somehow agnostic about public values content and more focused on the need to improve government operations (Benington and Moore 2011a, p. 17). For the purposes of my research, starting with normative lists of public values is useful as to provide insights on what types of goals governments follow when designing and implementing and e-government platform, and why so is. I do so in the following sections.

## 2.2 Normative public values: approaches from the literature

### 2.2.1 Preliminary inventory of public values

Eliciting a given society's public values cannot be universal or univocal. The indeterminate character of general consensus or aggregated preferences is well known in the literature of economics and political science (Arrow 1963). This is not to say that a set of values of reform cannot be approximated. As I anticipated as part of the stream of public values (in plural), there have been scholarly attempts to distilling and assessing public values based on a variety of approaches, such as literature reviews on what other scholars have said on the matter (Beck Jørgensen and Bozeman 2007), public opinion polls (work on cultural values from Tufts University), case studies (i.e. Jørgensen and Bozeman 2002, Feeney and Bozeman 2007) and surveys to public servants, businesses and the citizenry (Van der Wal and Huberts 2008, van der Wal *et al.* 2008, Berman and West 2012).

The following list is based on the work of Beck Jørgensen and Bozeman (2007), who provide a preliminary inventory of public values based on an extensive review of the literature in the topic. The authors review 230 studies in the literature of public administration, organisation theory and political science, published in the USA, UK and Scandinavia, during the period 1990-2003. Their survey of the literature resulted in 72 registered values, categorised in seven 'constellations' based on different types of relation between them. The table below depicts the list of public values and their categorisation into these constellations of values.

As the authors warned (2007, p.357), the main disadvantage of their approach is that "values are quoted out of context". However, the authors offer a useful interim approach that illustrates the possibility of relating different clusters of values, which can serve as a guideline for further empirical analysis (p. 357). In particular, the inventory provides a very useful attempt to map a galaxy of public values that can later be analysed using robust methods for text and content analysis (or critical discourse

analysis, as I shall discuss in the next chapter). This is, therefore, the main reason why their approach is useful for my research purposes.

<b>Value Category</b>	<b>Value Set</b>	
Public sector's contribution to society (general social values)	Common good Public interest Social cohesion	Altruism Sustainability Regime of dignity
Transformation of interests to decisions (how opinions are channelled)	Majority rule Democracy Will of people Collective choice	User democracy Local governance Citizen involvement Protection of minorities
Relationship between public administrators and politicians	Political loyalty Accountability Responsiveness	
Relationship between public administrators and their environment	Openness-secrecy Responsiveness Listening to public opinion Advocacy-neutrality Compromise Balancing of interests	Competitiveness-cooperativeness Stakeholder or shareholder value
Intraorganisational aspects of public administration (organisational values)	Robustness Adaptability Stability Reliability Timeliness Innovation Enthusiasm Risk readiness	Productivity Effectiveness Parsimony Business-like approach Self-development of employees Good working environment
Behaviour of public-sector employees	Accountability Professionalism Honesty Moral standards Ethical consciousness Integrity	
Relationship between public administration and the citizens	Legality Protection of rights of the individual Equal treatment Rule of law Justice Equity Reasonableness Fairness Professionalism	Dialogue Responsiveness User democracy Citizen involvement Citizen's self-development User orientation Timeliness Friendliness

**Table 2: Inventory of public values**

Source: adapted from Beck Jørgensen and Bozeman (2007, p.360-361)

Beck Jørgensen and Bozeman (2007) offer a further conceptual device and suggest that it is possible to relate values by proximity (how close a value is to another), hierarchy (a relative primacy of values), and causality (analysis of means to an end). For example, robustness may be closely related to values such as adaptability, and reliability, but also to legality, responsiveness, and the rule of law. Whilst this further classification can be subjective and controversial, the authors provide useful examples on how these relations may be analytically grasped. A particular useful distinction is to refer to *prime* (ends in itself) and *instrumental* (conditions that affect) values. The distinction is of importance because it leads to a particular type of analysis: instrumental values can be portrayed as causal hypothesis that are subject to empirical inquiry (p.376); in addition, instrumental values are means to something else, the prime values (i.e. an agency mission). This causal inquiry is particularly useful to unpack complex types of relations among values and technology in my research, and I will be drawing on them. The underlying assumption that the authors pose—and that I share in my research—suggest that there are no inherent *prime* public values; that is, efficiency may be considered as the ultimate (prime) public value in a particular situation, but this does not make the value as universal, inherent desired end.

Overall, In addition, my assumption is that “*complete consensus about public values is not required to make head-way toward public interest considerations*” (Bozeman 2007, p.143, italics in the original). Hence, a preliminary inventory serves the purpose of identifying public values in several domains of public administration life.

Finally, a note of caution needs to be made in relation to this inventory of public values and the scope of my study. The list has been built from literature in public administration and political science covering Anglo-Saxon and Scandinavian countries, which may be biased to value notions that may be less germane to Mexico. In addition, the review covers a period when the NPM trend was ‘dominant’ and the results may have benefited a bias against more traditional values in public administration.<sup>9</sup> Both reservations are important but do not constitute ‘substantive’ limitations to conduct the empirical research. That is, from a normative point of view, the list is indicative rather

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<sup>9</sup> From the list, it seems reasonable to suspect that, even when more traditional public values associated with the bureaucratic ethos may have been marginalised, they are still quite prominent in the public sector.



than exhaustive, and subject to empirical scrutiny. I now turn the attention to another attempt that can be combined, based on a seminal work in public management.

### **2.2.2 Value clusters in public administration**

Back in 1991, Christopher Hood coined the term New Public Management in his widely cited article of 1991, entitled “A public Management for all seasons”. A main point was to reflect on the challenges of a new form of public administration that was initiated by the drastic reforms in the UK and the USA since the early 1980s. On a much less explore part of his core argument, he presents an argumentation device—developed more extensively on Hood and Jackson (1991)—as the right tool to argue about the NPM and their potential effects. Hood focused on the notion of *administrative values*, which targets conventional ideas about ‘good administration’ instead of broader ideals on the role of the overall role of the state (Hood 1991). Hood identifies three families of values: the *sigma* values, which assign priority to lean government with a focus on economy and parsimony; the *theta* values, which relates to honesty and fairness; and the *lambda* values, those related to integrity, flexibility and security.

Sigma-type values concentrate on matching resources to defined tasks, avoiding waste, and defining measurable outputs as the currency for its success and failure (i.e. time and money, costs of resources). Theta-type values embody the pursuit of 'rectitude', in which trust, legitimacy and political entitlements are the currency of success. The last group of values relates to resilience and reliability, and the capacity to avoid system failures, breakdowns and collapses. Hood (1991, p.15) asserts that “NPM can be understood as primarily an expression of sigma-type values” as its elements embodied primarily different aspects of efficiency and effectiveness, while equity, fairness or communal values are ‘side effects’ (Christensen and Laegreid 2011, p. 11).

	<i>Sigma-type values KEEP IT LEAN PURPOSE</i>	<i>Theta-type values KEEP IT HONEST AND FAIR</i>	<i>Lambda-type values KEEP IT ROBUST AND RESILIENT</i>
<i>STANDARD OF SUCCESS</i>	Frugality (matching of resources to tasks for given goals)	<i>Rectitude</i> (achievement of fairness, mutuality, the proper discharge of duties)	<i>Resilience</i> (achievement of reliability, adaptivity, robustness)
<i>STANDARD OF FAILURE</i>	<i>Waste</i> (muddle, confusion, inefficiency)	<i>Malversation</i> (unfairness, bias, abuse of office)	<i>Catastrophe</i> (risk, breakdown, collapse)
<i>CURRENCY OF SUCCESS AND FAILURE</i>	<i>Money and time</i> (resource costs of producers and consumers)	<i>Trust and entitlements</i> (consent, legitimacy, due process, political entitlements)	<i>Security and survival</i> (confidence, life and limb)
CONTROL EMPHASIS	<i>Output</i>	<i>Process</i>	<i>Input/Process</i>
SLACK	<i>Low</i>	<i>Medium</i>	<i>High</i>
GOALS	<i>Fixed/Single</i>	<i>Incompatible</i> 'Double bind'	<i>Emergent/Multiple</i>
INFORMATION	Coasted, segmented (commercial assets)	Structured	Rich exchange, collective asset
COUPLING	<i>Tight</i>	<i>Medium</i>	<i>Loose</i>

**Table 3: Three sets of core values in public management**

Source: Hood (1991, p. 11)

The work of Hood (1991) and Hood and Jackson (1991) on administrative values and public administration is helpful to my research in two specific ways. First, it offers a simple categorisation that can help to match (and map) some of the value categories that Beck-Jørgensen and Bozeman present in their inventory. Because I focus particularly on the administrative design and the machine of government, their concepts can travel well. In addition, Hood (1991) states that it may be possible to align these clusters in a given administrative design, although this entails contestation. In particular, Hood suggests that, while it may be possible to align values pertaining to different clusters, the most probably scenario would entail privileging only one or two of the clusters at the expense to the others. Yet, this is a matter of empirical scrutiny that has so far been scant in the literature (but see Lodge and Gill 2011 for a remarkable exception). Therefore, the empirical proof about the fact that NPM's efficiency drive will come *necessarily* at the expense of fairness, honesty or effectiveness remains elusive (Hood 1991, p. 15).

### **2.2.3 Making sense of public value in context**

From the previous sections, I suggested that public values shall make sense in context. The very definition of a society's consensus suggests so. In other words, public values cannot be defined universally or in absolute terms (Alford and Hughes 2008), a view shared by most authors of the recent volume on the subject (Benington and Moore 2011b). "The problem is not finding public values but understanding them in some analytically useful form" (Bozeman 2007, p. 142).

I shall deal with these issues more in depth in Chapter Three—that is, how to study public values and e-government analytically and empirically. For the moment, is it useful to bring to attention an idea posed by Willmott (2010); the author suggest that questions of values shall be studied as part of *ethico-political* complexes: the meanings attributed to value should be recognised as articulations of a particular, culturally meaningful context, in which social practices take place. "Particular notions of 'value' become meaningful, achieve 'grip' and exert their effects though processes of contestation." (Willmott 2010, p. 520). This note reinforces why studying public values in context is paramount to conduct my empirical research.

As a means of summing up my discussion on public values, I argue that the preliminary list produced by Beck Jørgensen and Bozeman (2007) combined with the work of Hood (1991) provide a good starting point, by no means exhaustive, complete or univocal. In other words, these approaches are useful to my research because they provide the initial basis for studying complex value relations, their prominence and potential conflicts. I shall use them accordingly to trace notions of public values in the literature of e-government.

### **2.3 Public values implicated in e-government research**

E-government research has not focused directly on studying the linkages between public values and technology, and empirical studies that aim at looking at broader picture in this area are needed. In this section, I review the most influential works on e-government and I elaborate on those public values that seem to appear in the dominant research.

E-government has been studied from many perspectives and viewpoints, and there is a growing—if not immense—literature on the matter. E-government seemed to have emerged as a field in itself (Heeks and Bailur 2007), with a growing number of specialised journals in the topic. At the same time, there seem to be a disconnection between public administration literature and political science, which usually marginalised the role of the internet and ICT within public sector reforms (Dunleavy *et al.* 2006, Dunleavy and Margetts 2010).

As far as public values are concerned, usually they appear as given and as part of the values of reform. For example, Heeks (2002, p. 16) explains that “reinventing government is a continuation of existing new public management reforms” (see also Cordella 2007). Accordingly, from this perspective it can be argued that the role of information systems in government is to support a set of values given in the *Reinventing Government Agenda* (p. 14). In line with the spirit of the NPM drivers discussed earlier on, the *Agenda* of reform comprises five main components: increased efficiency, decentralisation, increased accountability, improved resource management and marketisation. Although the author does not refer to values of government directly, the following ones can be identified:

- Efficiency (improving the output input ratio, mainly in economic terms, cost savings);
- More flexible and responsive decision making; more efficient and effective (as a consequence of decentralisation);
- Accountability, productivity and performance of staff and democratisation (increased involvement of citizens in decisions and actions);
- Effectiveness, parsimony and business-like approach (as part of improved resource management);
- User (customer) orientation (as part of the marketisation component of reforms).

Heeks and Davies (2002) reinforce the point that “public sector organisations undertaking their initial computerisations will typically see IT as a means of increasing efficiency; automating the human effort (...) thereby attempting to cut staff costs”.

Countries with more advanced computerised public sector invest in e-government projects to pursue efficiency but also to improve the delivery of public services as means of becoming more customer-responsive (p. 24). Adding to these two clusters of values (productivity and responsiveness), Ciborra (2005) reminds that, in the context of developing countries, e-government is introduced to achieve better accountability and transparency. Both are the characteristics of good governance, and “the *conditio sine qua non* for the rich states and international agencies to supply aid to (...) economically less developed countries” (p. 261).

Bellamy and Taylor (1998, p. 65) reflect on the normative component of e-government and public sector reforms in the USA and UK. They suggest that a key promise of the new informational capabilities in government has been the potential for a changing relationship between government and individuals (either understood as citizens or customers). In line with Heeks and others (i.e. Fountain 2001), they also share the view that the dominant vision within the Reinvention Agenda has been to consider newer technology as the catalyst (and imperative) for enhancing efficiency, effectiveness, quality and democracy. Yet, they remark that at the core of this vision was the unrealistic “belief that these new (ICT) capabilities will permit wider, more inclusive access, greater choice and more flexible, responsive public services capable of being tailored to the increasingly disparate needs of consumers.” (Bellamy and Taylor 1998, p. 65) The work of Bellamy and Taylor (1998) is perhaps the exception amongst early e-government studies that reflect on the contested role of ICT within modernisation reforms.

Bhatnagar (2004, p. 19) offers a view on e-government that is also useful to highlight the prominence of certain (instrumental) values within the debate. He remarks that:

e-government is understood as the use of ICT to promote more efficient and cost-effective government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens.

The value cluster of productivity, user/consumer orientation, as well as dialogue and accountability are implicated in this definition. These examples suggest that, from a normative perspective, there have been many claims that e-government will make

citizen-government transactions easier, cheaper and faster. These claims have been mainly supported by models that build on stages of development and different levels of e-government maturity, originally developed for e-business processes (i.e. Layne and Lee 2001, Andersen and Henriksen 2006). Usually, the models depict a transaction-oriented view in which e-government development occurs in three general maturity phases: the early, middle, and later stages. These phases start from an initial publication of information on a webpage, evolve into more complex two-way citizen-government interactions and transactions to the integration of public services across government agencies (both vertically and horizontally), and ultimately to a potential transformation of democracy. The more mature stages entail further organisational automation, integration and complexity, as agencies usually have to work in collaboration or become integrated under a new organisational form (i.e. policy networks). Overall, the idea is that, as the stages evolve, the levels of interaction, collaboration and management increase in complexity both internally and with citizens (Bellamy and Taylor 1998, Fountain 2001, Layne and Lee 2001, Heeks and Davies 2002, Moon 2002, West 2005a, United Nations 2008, 2010, Bhatnagar 2009).

These models implied an inevitable sequence towards more e-government, and assume that *more* e-government is *better*. This transaction-oriented view of e-government resulted in widespread intents to offering public services online and quite recently incorporating the use of social media such as in open government initiatives. Implicitly, this vision of e-government embodies values that can be regarded as similar to those of NPM: a business-like approach, the idea that the easier and faster, the better, and that citizens demand services to be built around their individual choices (customer focus). West (2005a) offers a good illustration to these relations (see figure below).

Billboards	Partial service delivery	Portal stage with fully executable and integrated services	Interactive democracy
Key qualities include reports, publications, and databases, but no services or interactive features	This stage allows visitors to search websites and order a few limited services.  There are few privacy or security statements and no means to personalize site	Site has online services, integrated across agencies.  Substantial concern with privacy and security. Some means to obtain electronic updates	Lots of online services and interactive features.  Site features accountability-enhancing features and technologies for public feedback and deliberation
<b>Incremental change</b>			
<b>Secular change</b>			
<b>Transformative change</b>			

**Figure 1: E-government stages and models of technological change**  
Source: West 2005a, p. 11.

Chadwick and May (2003) present a case in point from a citizen-government interaction. Looking at experiences in the US, Britain and the European Union, the authors study the shifts from traditional government to e-government in citizen participation. Their findings show that in spite of the potential of technology as an instrument of democratic liberation, an executive-driven, *managerial* model of interaction marginalized the potentials of broader “consultative” and “participatory” possibilities. Their findings are highly congruent with that of Hood’s on the dominance of sigma-type of values.

Even though most of these studies highlight some normative component (i.e. the ‘values’ or benefits promised by e-government), there are vast examples on how these components of reform were actually followed. For example, the books of Heeks (2002), Bhatnagar (2009) and Bellamy and Taylor (1998) cover numerous examples on both rich and less economically developed countries. The OCDE has also produced numerable studies on several countries, including Mexico, that show empirical evidence on how the purposes of e-government and public sector reforms outlined here were actually followed. There have also been broader empirical efforts conducted in relation to maturity models using benchmarking techniques, such as the *E-Readiness Index* produced by the Economist and the United Nations *E-Government rankings* among others. From this perspective, the evidence suggests that e-government expected impacts are generally over-optimistic (Heeks and Bailur 2007, Andersen *et al.* 2010), and that governments show signs of steady progress rather than the expected radical

transformations that were predicted in late nineties (West 2005b, 2007, Coursey and Norris 2008, Norris 2010).

In sum, a good deal of work has explicitly emphasised that e-government design and use would serve the goals of broader modernisation reforms. However, there is considerably less research on the connections between public values and e-government that would explicitly assess which types of values are privileged or marginalised, or to what extent technology shifts value priorities or contributes towards their agendas. Despite interesting work has been done in this area, it remains largely a valuable conceptual effort (i.e. Cordella 2007). In the following section, I bring together the inventory of public values and present the findings from the focused review on public values and e-government.

#### 2.4 **Inventory of e-government public values in procedural oriented agencies**

As suggested in Andersen *et al.* (2010), the most studied effects in e-government are in the internal capabilities of the public administration. In a recent article, Andersen *et al.* (2010) address the literature covering major impacts of e-government on the period 2003-2009. Consistent with previous similar literature reviews (Danziger and Andersen 2002), the authors find that the majority of the articles report impacts on managerial government capabilities (55%), indicating that e-government research focuses primarily on impacts on efficiency, information quality, and effectiveness of government policies. Impacts on interactions occupy the second largest place (31%) while the other two categories, value redistribution (11%) and orientations (3%), report the fewer number of findings. Regarding these two last categories, the authors stress that (Andersen *et al.* 2010, p. 576):

These [value redistribution and value orientations] are domains where there has been the greatest controversy about the desirability of extensive penetration of ICT into the public sector. There is little research in our analysis that clarifies the early debates about whether there would be power shifts attributable to ICT that either reinforced the existing bases of power or would mobilize and empower groups that previously had less access to key information resources.

In what follows, I expand on this concerns. In this section I map relevant e-government literature using the inventory of public values and the clusters of administrative values



that I presented before. To do so, I conducted a focused review of the most prominent texts in e-government as well as specific e-government studies that examined referred explicitly to one or several values of government.<sup>10</sup>

To make the analysis manageable, and taking into account the particular concerns of my dissertation—examining the relation between public values and technology from inside government—I discarded two public value constellations. The first constellation of values in the classification of Beck Jørgensen and Bozeman (2007) (public sector’s contribution to society) could be understood as an indirect outcome of any e-government programme. More precisely, while some conceptual pieces touch on this aspect in the literature of e-government (i.e. Brewer *et al.* 2006), there are no clear debates addressing the ethics or integrity of e-government or debates surrounding the morals of e-government. So, I removed the first category of public values from the list.

The second constellation—transformation of interest to decisions—contains highly relevant values that pertain to a rapidly growing field of research, often referred to as *internet politics*<sup>11</sup> (Agre 2002, Chadwick 2006, Chadwick and Howard 2009). The internet and related ICT offer new avenues for assessing how opinions from society are channelled into government actions, and values such as user democracy, protection of minorities and the citizen involvement are deemed as highly important in studies of government and technology. Yet, given the focus of my research, which deals with the machinery of government and procedural based agencies, public values such as user

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<sup>10</sup> To select the most relevant literature on e-government, I follow two steps. I first run a general search using Harzing’s “Publish or Perish” citation tool; I used the terms “electronic government” (and its different uses, such as digital government, e-government, e-government) and “information technology in public administration” to capture both, current literature on e-government and also those that refer broadly to ICT in government. The results were first ordered by average of citations *per year* and sorted in descending order to rank the more relevant publications in the topic area. The works I include in this section are amongst the top 20 most cited. Most of my results (top cited articles found) are similar to those reported recently in Belanger and Carter (Belanger and Carter 2012), who conducted a review of e-government research comparing the top ten most highly cited e-government articles with research on e-government published in leading IS articles.

In addition to the most cited e-government publications, I complemented the analysis with further work that was normative or theoretically related to public values and technology in government. For example, the work of Bovens and Zouridis (2002) provides very important insights for the specific literature on accountability, discretion and e-government effects on those variables, and was not necessarily appearing in the top cited articles in the field. I selected empirical research that could offer theoretical links on public values *only*.

<sup>11</sup> These studies can also be found under the term “e-democracy”; lately, the term internet politics seems to be more widely used (Chadwick and Howard 2009).

democracy, majority rule and citizen involvement have been excluded from the categorisation.

The constellation of values in the third category (relationship between public administration and their environment) has been maintained, especially because of a growing attention to issues on openness and cooperation within the studies of public administration and technology (i.e. Bertot *et al.* 2010). However, this cluster may not be a clear-cut one. For the purpose of my own classification of the literature, I gave particular attention to research that dealt more explicitly with issues of openness, responsiveness and transparency. The rest of the value constellations appear very relevant within e-government studies although with differences of degree.

The following table summarises the analysis of e-government literature in light of the constellations of public values.

Value Category	Value Set	Hood's clusters of values	Values of e-government (importance; examples)
Relationship between public administrators and politicians	Political loyalty <i>Accountability</i> Responsiveness	Theta-type	Yes; moderate prominence* (Bellamy and Taylor 1998, Fountain 2001, Heeks 2002)
Relationship between public administrators and their environment	Openness-secrecy Responsiveness Listening to public opinion		Yes, very low prominence (Wong and Welch 2004, Tolbert and Mossberger 2006, Smith 2011)
Intraorganisational aspects of public administration (organisational values)	Robustness Adaptability Stability Reliability Timeliness	Lambda-type	Yes, moderate prominence (Bellamy and Taylor 1998, Fountain 2001, Welch and Pandey 2007)
	Innovation Enthusiasm Risk readiness	Sigma-type	Yes, moderate prominence (Tan and Pan 2003, Welch and Pandey 2007)
	Productivity Effectiveness Parsimony Business-like approach Efficiency	Sigma-type	Yes, very high prominence (Heeks 2002, OECD 2003, 2005, Tan and Pan 2003, Pan <i>et al.</i> 2006, Fountain 2007, Gil-Garcia <i>et al.</i> 2007, Srivastava and Teo 2008, 2010, Mareschal and Rudin 2011)
	Self-development of employees		Yes, very low prominence (Fountain 2001)

Behaviour of public-sector employees	Accountability Professionalism Honesty Moral standards Ethical consciousness Integrity	Theta-type	Yes, moderate to high prominence** (Bovens and Zouridis 2002, Wong and Welch 2004, Jorna and Wagenaar 2007, Wenger and Wilkins 2009, Smith <i>et al.</i> 2010, Bellamy and Taylor 1998, Fountain 2001)
Relationship between public administration and the citizens	Legality Protection of rights of the individual Equal treatment Rule of law Justice	Theta-Type	Yes, low to moderate prominence*** (Bovens and Zouridis 2002, Welch and Pandey 2007, Wenger and Wilkins 2009, Smith 2011)
	Equity Fairness Professionalism	Theta-type	Yes, low prominence (Smith 2011)
	User/customer orientation Timeliness Friendliness	Sigma-type	Yes, very high prominence (Bellamy and Taylor 1998, Fountain 2001, Heeks 2002, OECD 2003, 2005, Bhatnagar 2004, 2009, Pan <i>et al.</i> 2006, Tolbert and Mossberger 2006)

**Table 4: Inventory of public values, administrative values and values of e-government**

Source: own elaboration based on different sources. Notes: column 1 reports the clusters described by Beck Jørgensen and Bozeman (2007, p.360-361); column two corresponds to the category according to Hood's types of administrative values (1991). Sigma-type values relate to matching of resources to tasks; theta-type, relates to fairness, neutrality and accountability, and lambda-type relates to adaptivity, learning and resilience. Notes: \*Accountability is referred many times in the literature of e-government but usually not in the terms discussed in Beck Jørgensen and Bozeman (political accountability). \*\*The idea of accountability needs to be revised; usually, as it appears in e-government refers broadly to public servants as being accountable to citizens, but not necessarily to any of the other sub-group of values depicted by Beck Jørgensen and Bozeman 2007. \*\*\*Legality is many times referred in the literature of e-government as accountability; few times is directly referred as a value to be delivered and achieved through technology.

These four more prominent categories of values are also congruent with the general lines that e-government has been conceptualised in the literature: e-government is the generalized use of ICT to provide more and better public services, to improve public administration performance and to enhance democratic values (Bellamy and Taylor 1998, Fountain 2001, Heeks 2002, Gil-Garcia and Pardo 2005, Cordella 2007, Bhatnagar 2009).

The table summarises relevant work, mostly empirical, that has been useful to shed light on those public values that are more or less studied in the field. As I suggested, it seems apparent that public values related to the internal and organisational capabilities of the

public sector have been vastly studied. Usually, these studies focus on the capabilities of technology to automate and enhance data access and data quality, obtain productivity gains, timesaving and improved products and services (Andersen *et al.* 2010, pp. 568-70).

Far less studied aspects are, for instance, the effects of technology on values such as integrity, honesty and accountability. For example, an acclaimed potential benefit of e-government relates to their facility to report and publish results, with their increasing perception of trust or accountability. However, issues of honesty reporting and their underlying mechanisms have largely been absent in public management literature in general (Yang 2009). An area of research that has informed an understanding on the connections between e-government and more 'classic' public values are the studies of ICT and discretion. Bovens and Zouridis' (2002) seminal work argues that technology has the potential to replace the traditional street-level bureaucracy by a system-level bureaucracy. The authors find that, as a consequence of the automation processes in the clerical work, street-level bureaucrats exercise less policy discretion as they have less administrative involvement in individual cases. The authors also find that because the information between citizens and bureaucrats is primarily managed through technology, this exchange drives decision making.

Wenger and Wilkings (2009) find also that automation curtails the discretion of street-level bureaucrats, this time, due to the elimination of the bias certain agents faced when they entered an office in person. In this sense, their study supports the findings of Bovens and Zouridis (2002) in the sense that technology reduces discretion, and thus may contribute to ideas of fairness and justice. As far as the role of technology is concern, Wenger and Wilkins (2009, p. 327) call attention to theorise the role of technology in future work:

we use technology as an *exogenous* factor that influences bureaucratic discretion; however, future research could also theorize about how bureaucratic discretion influences the shape and structure of technological adoption

But Regardless of the stance on technology innovation and its effects, other research on accountability and discretion in e-government has suggested mix results. Jorna and Wagenaar (2007) argue that technology may not necessarily lead to the reduction of

administrative discretion. Indeed, the authors suggest, technology innovation in the public sector can contribute to increase the discretionary power of public servants. Similarly, Welch and Pandey (2007) examine the effects between rule-based constraints that often define public organisations and the implementation of intranet technologies in public service agencies. The authors find that intranet reliance reduces red tape in general terms and in procurement areas but there is no evidence that red tape affects intranet implementation. As a result, the findings from Welch and Pandey (2007) do not support previous assertions in the literature of e-government, which suggested that higher levels of red tape could lead to greater innovativeness (p. 396).

On issues of accountability, based on the work on ‘accountability dysfunctions’ of Bovens (2005), Smith *et al.*(2010) problematise the diverse value conflicts that technology introduce in key areas of public service. Their main argument is that, while technology innovation in the public sector may contribute to the functions of accountability, it may also exacerbate its dysfunctions. Based on empirical illustrations, the authors suggest that certain public values imbedded in technological applications marginalised and dominate over others. A case in point has been the push for efficiency of services in the identity card scheme in the UK that led to serious implications for surveillance, personal autonomy and liberty (p. 12). The authors insist that a “preoccupation with technology-centred solutions distracts us from addressing which, why, and how particular accountabilities should be enforced or shifted” (Smith *et al.* 2010, p.13). Wong and Welch (2004) offer similar conflicts in accountabilities; the authors find that, despite the fact that the use of internet in government increases general levels of accountability, it also reinforces the differences in power among agencies.

Studies on trust have also shed light on the potentials of value conflicts among stakeholders. Developing theory based on critical realist assumptions, Smith (2011, p. 237) shows that e-services can be concurrently trustworthy and not trustworthy, depending upon the interest or value perspective taken by the user. His findings reveal that, in matters of transparency, procedural fairness, efficiency and equality, technology may not just resolve tensions that are inherent to democratic values, but rather change their configurations, creating new interpretations and trust judgments.

These studies shed light in the complex dynamics among discretion, technology and flexibility, public values most commonly associated to the ethos of bureaucracy. This serves to illustrate an opportunity to advance the field studying public values in context. Overall, to assess how potential competing public values can (or cannot) be aligned is a matter of empirical scrutiny, in a given context and concrete practices.

## 2.5 **Conclusions**

In this chapter, I have shown the complex and elusive character of studying public values empirically. I have also offered further conceptual clarifications regarding the definition and streams of public value research that have inspired my work. I would like to close this chapter with a summarising quote that serves to illustrate the importance of studying different dimensions of public value and the need to advance more knowledge on the subject. In 2010, de Graaf and van der Wal (2010) concluded the editorial of a symposium on Ethical and Effective Governance, with the following remarks (p. 628):

Despite the valuable insights the articles bring to the fore, much remains unclear, such as how often governing good conflicts with governing well and what trade-offs in values the conflicts lead to. (...) What we have thus far is partial and varying evidence that points to an existing tradeoff between integrity and effectiveness in which effectiveness seems to prevail. However general the conclusion may be, it is a promising point of departure for important research endeavors of the future.

I have shown in the chapter that studying public values, their meanings and conflict matters are even more elusive when it comes to its relation to technology. In the next chapter, I elaborate on the ways to theorise the relation between public values and technology.

### 3 Chapter Three: Theorising public values and technology innovation through critical discourse analysis

To understand what sorts of public values are imbued in technology innovation in the public sector, a theoretical lens suitable to study them and their relations within their socio-political context is needed. Recall that a recurring theme emerging from the review on public values theory has been the need to advance their understanding and meaning in context. At the same time, the e-government literature suggests that technology innovation have great potential to enhance or change public values associated to different aspects of the internal capabilities of public administrations and their relation with citizens.

In this chapter, I develop a theoretical framework that can be suitable for studying the relation between public values and technologies, its content, context and its dynamics. To do so, in the following sections, I introduce a discursive organisational lens that can be suitable for that purpose. Amongst the different theoretical perspectives on organisational discourse, I adopt a particular version known as *critical discourse analysis*, which has received very little attention within information systems research.<sup>12</sup> CDA is suitable to my research interest in at least two ways: first, it provides the theoretical basis and foundational premises to study discourse within its context; second, it is flexible and open to account for the particular theorisation of my objects of study—public values and technology innovation. Therefore, the reader shall not understand CDA as the ‘sole’ theoretical domain of the dissertation. CDA is a sort of general theoretical umbrella that provides also a strong methodology to study relations of technology innovation and values over time. As such, my theoretical “device”<sup>13</sup>—referred loosely as framework in the dissertation—brings together theoretical premises of CDA with the contextual and emergent character of technology innovation and the notion of public values discussed in the previous chapter.

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<sup>12</sup> I refer to *this* version of CDA in particular; critical discourse analysis in IS research has drawn mainly from Habermas’ theory of communicative action (i.e. Cukier *et al.* 2009).

<sup>13</sup> I am inspired in the work of Gregor (2006, p. 624) that uses the word “sensitising device” to refer to theories that view the world in a particular way.

To account for such theoretical elaboration, the chapter is organised as follows. In section 3.1, I elaborate on the main facts, assumptions as well as methodological implications of the tradition of CDA that I adopt in my research. I also explain how CDA has been used in studies of organisational change. My theoretical framework is complemented with knowledge from a stream of information systems research based on social theory. Thus, later on in section 3.2, I introduce the idea of transdisciplinary work and explain the main sources that I use to theorise technology in my work. In particular, I elaborate on the type of technology innovation that I study and I introduce key theoretical concepts in the studies of technology innovation in the public sector (e-government). That is, Section 3.2 lays the groundwork for the choice of concepts and dynamics that illuminate my objects of research. Drawing on the main concepts elaborated in those sections and the public values concepts presented in Chapter Two, section 3.3 brings together a CDA-based theoretical framework to study the linkages and dynamics of public values and technology innovation. I finish the Chapter with a reflection on the role of theory in my work.

### 3.1 **Discourse and organising: the case for Critical Discourse Analysis**

The discursive aspects of the different facets involved in organising processes have received increasing scholarly attention (Alvesson and Kärreman 2000b, Heracleous and Barrett 2001, Grant and Hardy 2004, Grant *et al.* 2004, Fairclough 2005a, Phillips and Oswick 2012). This, in part, has been a consequence of a more general linguistic turn in social science research (Van Dijk 1997, Alvesson and Kärreman 2000a, 2011, Vaara 2010). Among the different theoretical streams on organisational discourse, I shall be looking at *critical discourse analysis* (CDA), which has been of growing influence within social sciences in general (Fairclough 1992, 2005a, 2010, Wodak 2001, Phillips and Di Domenico 2009), and within management and organisation studies in particular (see for example Leitch and Palmer 2010, Alvesson and Kärreman 2011, and two special issues on the topic in *Organization Studies* and *Organisation* in 2004). In the following sections, I present the main theoretical points that I use in my work. More specifically, I present the basics of CDA and elaborate on three key concepts: texts, discourse and social context. My research has been largely influenced by the work of Fairclough and



colleagues, although I also draw on related material that has been produced in fruitful debates in organisational discourse research.

### 3.1.1 Critical discourse analysis: introduction and assumptions

Critical discourse analysis is a theoretical approach to study how discourse figures within processes of change in social life (Fairclough 2003, p. 205, 2010). In the particular field of organisation and management studies, CDA has become a well-established framework to examine the use of language in text and talk that underlie the dynamics of organising (Phillips and Hardy 2002, Phillips *et al.* 2004, Fairclough 2005a, Munir and Phillips 2005, Vaara *et al.* 2006, Vaara and Tienari 2008, Chouliaraki and Fairclough 2010, Leitch and Palmer 2010). In turn, CDA has embraced a high degree of diversity in the way scholars approach it, both theoretically and methodologically (Wodak and Meyer 2009, p. 32), giving rise to concerns. In a debate presented in the *Journal of Management Studies* on the subject, Leitch and Palmer (2010) argue that researchers should be precise about the particular CDA assumptions and analytical components when conducting work based on this discursive lens. Among other rules, the authors suggest that researchers should specify which CDA tradition they draw upon (Leitch and Palmer 2010, p. 1207), which I do below.

My elaboration of CDA draws on a particular stream developed by the work of the socio-linguistic Norman Fairclough and colleagues (Fairclough 1992, 2000, 2005, 2010, Chouliaraki and Fairclough 1999). This stream of CDA emphasises the importance of a close and detailed analysis of texts and at the same time, the integration of the analysis into broader social processes, actions and events (Fairclough 2005, p. 924). Theoretically, CDA is based upon a view in which semiosis constitutes an irreducible element of social life (Fairclough 2003, p.203). Social life, in turn, is understood in CDA as an interconnected network of *social practices* of many sorts, such as cultural, political, discursive, economic and so on. The concept of social practice is central for CDA purposes, which Fairclough defines as follows (2003, p. 203, emphasis added):

By 'social practice' I mean a relatively stabilized form of social activity (examples would be classroom teaching, television news, family meals, medical

consultations). Every social practice is an articulation of *diverse social elements* within a relatively stable configuration, always including discourse

These different social elements comprise activities, subjects and their social relations, technology, objects, time and place, forms of consciousness, values and discourses. This brings into focus the idea of discourse as a *dialectical* element of social life. Chouliaraki and Fairclough (1999, p.37) illustrate:

any practice articulates together diverse elements of life (as its ‘moments’) and therefore diverse mechanisms. Discourse is one such element, with its own mechanism. (...) Practices themselves are articulated together within networks of practices... Any practice is a practice of production – people in particular social relations applying technologies to materials. Also, any practice has a reflexive element – representations of a practice are generated as part of the practice. Discourse therefore figures in two ways within practices: practices are partly discursive (talking, writing, etc. is one way of acting), but they are also discursively represented.

Fairclough’s version of CDA depicts a view of language as not just abstract sign systems but as medium of social practices with constitutive effects on social life (Fairclough 2010, 2005, Chouliaraki and Fairclough 1999). Any sociocultural practice, therefore, articulates together different elements of life and diverse mechanisms, being discourse just one of those elements. Discourse is then said to be *dialectical* in that the relations are between social elements that are different from one another yet not totally discrete (Fairclough 2005, Chouliaraki and Fairclough 1999, 2010, Fairclough *et al* 2002). The relationship between power and discourse offers a good illustration: power is partly discursive as it depends on discourse to build and sustain legitimacy, but power is yet not totally discursive as it can also rely on other material properties, such as physical force.

This version of CDA assumes a particular perspective on social structure, social action and agency that is based on a *critical realist* position.<sup>14</sup> Thus, the concept of social practice provides theoretical means to examine the ways discourses are produced and interpreted, but rejects an extreme relativistic social construction perspective that lay an

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<sup>14</sup> In the methodology chapter, I expand on these assumptions and the ways critical realism has influenced my research.

assumption that everything is discourse. Moreover, this version of CDA distinguishes from other discourse analysis in organisation studies that are said to be anti-realist or anti-materialist (Reed 2004, p.414, Fairclough 2005, p. 922-3). A typical example of the latter is offered in Mumby and Clair (1997, p.181), who suggest:

Organizations exist only in so far as their members create them through discourse. This is not to claim that organizations are ‘nothing but’ discourse, but rather that discourse is the principle means by which organization members create a coherent social reality that frames their sense of who they are.

Reed (2004, p. 414) criticises the fact that in this statement, ontology and epistemology are conflated; social structure is collapsed into discursive agency and hence, it becomes impossible to discern the connections among everyday discourse, sense-making practices and larger social structures and the enactment of power relations—all paramount elements in CDA. In taking a realist view, organisational discourse analysis is based on the central argument that the social world comes *previously structured* (Reed 2004, p.415). In studying discourse dialectically, “discourse is necessarily dependent on a pre-constituted set of separable, yet interdependent, material conditions and social structures” (2004, p.415). But discourse, as part of this dialectical relation, has the potential to change the social world as well. In the case of organisational analyses, Fairclough summarises as follows (2005, p. 929-30):

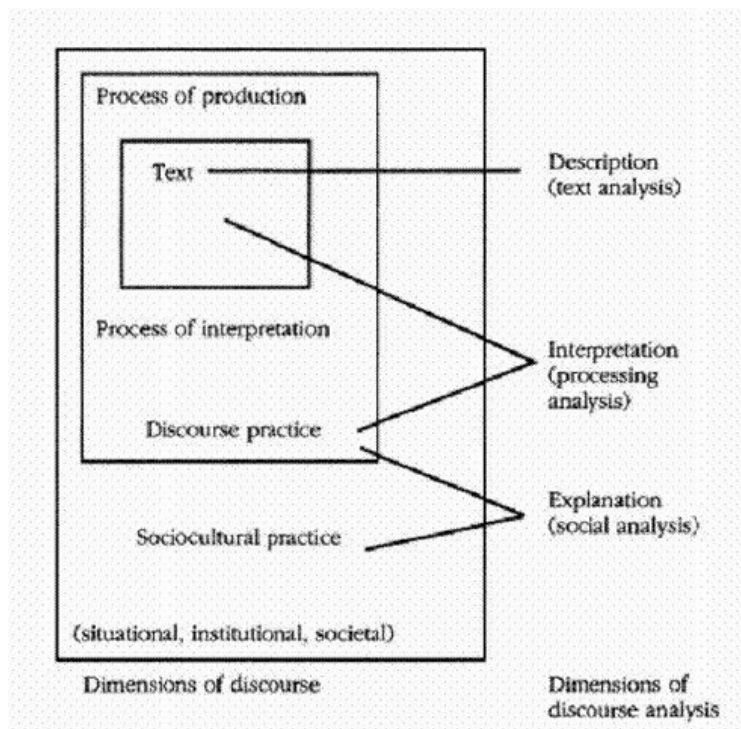
Whether or not change in discourse leads to change in beliefs or habits of action, as well as change in organizations, is a contingent matter. (...) Changes in discourse certainly can and do contribute to change in beliefs, habits of action, and indeed organizations, but it is only by consistently regarding the difference between such social elements that one can investigate the relations between them.

Having depicted the general introduction and underlying assumptions of CDA, in the next section, I introduce the three-dimensional level of analysis, which is pivotal for my research.

### **3.1.2 Text, discourse and context in CDA**

A particular feature of CDA, Fairclough suggests, is establishing connections between the properties of texts and wider sociocultural practices that are mediated by discourse (Fairclough 2010, p.132). The integration of different social elements unfolds in a

‘three-dimensional’ framework, which offers a succinct schematic way to visualise the relation between texts, discourse and social context (see figure 2 below). The three-dimensional framework implies that discourse should be analysed simultaneously at three levels: (i) text (spoken, or written), (ii) discourse practice (text production and interpretation), and (iii) social practice (the situational, institutional and/or societal context). The first level (micro level, level of text) requires close and detailed analysis of texts, relying on different linguistics and semiotic tools. The level of discursive practices, in turn, involves a *processing* analysis on how texts are interpreted, or in other words, what people do with texts, how they are produced and consumed. The level of social practice (macro level) focuses on the broader context in which texts are embedded, such as the immediate situation (space-time), the wider institutional domain or organisation, or the societal environment.



**Figure 2: Dimensions of discourse and discourse analysis**  
 Source: Fairclough 2010, p. 133.

The notions of text, discourse and context need further clarification. The views on discourse as well as text have been subject to a wide and diverse usage in the social sciences in general and also with variation within CDA studies (Wodak and Meyer 2009, p. 2, and see Leitch and Palmer 2010, p. 1196-7 for examples on diverse definitions of

texts within CDA).<sup>15</sup> For my purposes here, I understand *text* in a broad sense, including written pieces of texts such as policy reports and legal documents, but also transcripts of spoken words like conversations or interviews as well as pictures and artifacts (Phillips *et al* 2004, p. 636). In addition, I understand *discourse* in a general, abstract sense, to refer to an element of social life that is *dialectically* related to other elements (Fairclough 2003, p.214), such as non-discursive ones. From this perspective, discourse is language *in* practice, that is, discourse is an interrelated set of texts (in the sense described before) that brings objects into being alongside their related practices of text production, dissemination and consumption (Fairclough 2003, Munir and Phillips 2005, p. 1667).<sup>16</sup>

In the dialectical-relational conception of discourse that CDA embraces, *context* is deliberately understood as contingent and broad; context is the articulation of semiosis with other elements of social practice (Chouliaraki and Fairclough 2010, p. 1217). Context, then, is *historical, social* and *spatial*. In my research, the way I conceptualise the role of context shares the view of Avgerou (2002, p. 8-10), who suggests that contextual studies involve a process analysis that spans multiple layers and intertwined relations between co-evolving social processes (i.e. technology innovation and organisational change). In addition, my view of context in light of CDA also entails a dynamic and generative understanding (Hayes and Westrup 2012, Salskov-Iversen *et al* 2000, p.190): instead of treating it as a given entity that is ‘out there’ waiting to be represented, context should be studied dynamically, as ‘generating site’. That is, I see local spaces as relational and open-ended, interacting with broader social dynamics (i.e. globalisation).

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<sup>15</sup> Wodak and Meyer (2009, p.3-4), two very well-known socio-linguistic scholars, exemplifies this idea nicely:

it is obvious that the notions of *text* and *discourse* have been subject to a hugely proliferating number of usages in the social sciences. Almost no paper or article is to be found which does not revisit these notions, quoting Michel Foucault, Jürgen Habermas, Chantal Mouffe, Ernesto Laclau, Niklas Luhmann, or many others. Thus, *discourse* means anything from a historical monument, *a lieu de mémoire*, a policy, a political strategy, narratives (...) to language per se. This causes confusion (...) This is why each contributor to this volume was asked to define their use of the term integrated in their specific approach” (italics in the original).

<sup>16</sup> The term discourse will be used more specifically (as a count noun), to refer concretely to particular discourses (i.e. discourses of legality).

This version of CDA has its own methodological implications. As explained, discourse analysis in my work accounts for a *detailed analysis of text*, using methods for analysing linguistic and semiotic features in some detail (Fairclough 2003).<sup>17</sup> The methodology chapter—and particularly, the section on the method of analysis—explains in detail the type of textual analysis that I have conducted. For the moment, let me say briefly that a textually oriented discourse analysis includes paying particular attention to families of words (i.e. choice of words) as well as aspects of grammar and semantics that are present in the texts (i.e. structure of sentence). The textual oriented analysis, therefore, covers the first dimension of CDA that I have presented in the figure 2 earlier on this chapter.

CDA does not stop at the level of texts: “text analysis is an essential part of discourse analysis, but discourse analysis is not merely the linguistic analysis of texts” (Fairclough 2003, p. 3). That is, texts are rather meaningless if taken individually or isolated. Thus, the second dimension involves dealing with ‘*intertextuality*’. The intertextuality of a text is the presence of elements of other texts that can be direct (i.e. quoted speech) or indirect (i.e. reported speech) and related in different ways (i.e. dialogued with, assumed, presupposed, etc.) (Fairclough 2003, pp. 39-40). The second dimension also requires revealing which genres are used, and how they are mixed, textured, and linked with other discourses. In turn, the societal dimension is unfolded by creating a meaningful context level, to understand where texts emanate from (conditions of production) and how they are used and consumed. The societal stage is therefore reconstructed based on the extensive data I have collected during my fieldwork (direct observation and interviews) as well as a number of further sources of historical, political and socioeconomic data on Mexico and on the project under study (archival data).

Methodologically, this process is nicely summarised in Phillips *et al.* (2004, p. 636, emphasis added):

Discourses cannot be studied directly –they can only be explored by examining the texts that constitute them (Fairclough, 1992; Parker, 1992). Accordingly, discourse analysis involves the systematic study of texts -including their *production*,

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<sup>17</sup> Let me reiterate that it is this aspect of detailed linguistic analysis of texts that distinguishes CDA from much discourse analysis in the Foucault tradition (Fairclough 2003, p.215).

*dissemination*, and *consumption*- in order to explore the relationship between discourse and social reality. The centrality of the text provides a focal point for data collection, one that is relatively easy to access and is amenable to systematic analysis (...). Discourse analysis does not, however, simply focus on individual or isolated texts (...) but, rather, on *bodies* of texts. Discourse analysis therefore involves analysis of collections of texts, the ways they are made meaningful through their links to other texts, the ways in which they draw on different discourses, *how* and *to whom* they are disseminated, the methods of their production, and the manner in which they are received and consumed

In sum, a critical analysis of texts requires an understanding and description of the surrounding social processes and structures that enable the production of a text as well as the processes by which individuals or groups understand and consume texts in a certain meaningful way (Wodak 2001, p. 3). What makes CDA distinctive is to include a detailed analysis of texts, which is not the case for much discourse analysis in social sciences (Fairclough 2003, p. 215).

### 3.1.3 CDA and organisational change

Critical discourse analysis has been adopted in many organisational analysis and studies of organisational change (i.e. Vaara and Tienari 2002, Vaara and Monin 2010). Based on the assumptions that CDA holds and the three-dimensional framework, in this section I expand on a set of research issues that are particularly important in studying the dynamics of discourse practices in organisational settings.

I have anticipated that a detailed analysis of text requires going back and forth between text, its practices of production and dissemination, and the broader social context. Fairclough (2005, p. 932-3) suggests that four sets of research issues can be addressed using CDA in studies of organisational change: emergence, hegemony, recontextualisation and operationalisation. In brief, they are defined as follows:

- (i) Emergence: how discourses emerge, how they are constituted and articulated with existing discourses;
- (ii) Hegemony: the ways particular emergent discourses (and not others) become hegemonic or dominant in particular organisations or institutions;

- (iii) Recontextualisation: how emergently hegemonic discourses travels across different boundaries (e.g. between organisations, from local to national or international scale, or vice versa);
- (iv) Operationalisation: follow the ways in which discourses go from being representations to having transformative effects on organisational reality.

These four ‘objects of research’ in CDA—as Fairclough defines them—can be combined in a research project, using all four or a selection of them, depending on the research interest. Broadly, all these categories entail tackling temporality seriously. In my case, the first two categories are relevant from the point of view of providing the background of my research and the way e-government initiatives are framed. These are briefly addressed in the introduction and in Chapter Two, when I discussed the foundations of the NPM and how it has travelled as well as the ways it has provided a platform for e-government development. While the category of recontextualisation will be addressed when I deal with the ways the particular public agency that I study has incorporated a series of hegemonic discourses (i.e. competitiveness and openness to trade in Mexico), a rather relevant category for my work is the one on *operationalisation*. It is by studying operationalisation that one can gain insights into the ways discourses are dialectically transformed into other social elements.

There are three main ways in which operationalisation of discourses can occur: via *enactment* of discourses in new ways of acting and interacting; via *inculcation* of new ways of being (i.e. changes in communicative style); and via *materialization*, as new objects and properties of the physical world take form. As Fairclough explains (2005, p.934):

Operationalization includes enactment: discourses may be dialectically transformed into new ways of acting and interacting. (...) Operationalization also includes inculcation –the dialectical transformation of discourses into new ways of being, which include new styles. Finally, operationalization includes materialization: a new management system in an organization may include changes in the structuring of organizational space, e.g. in the design of office space. Through these forms of operationalization, networks of social practices and the orders of discourse which are parts of them may be transformed.



The concept of operationalisation is particularly useful for the framework, as it suggests mapping where discourses come from, how they are interpreted in their discursive and social practices, and how they eventually are operationalised in technology and new ways of acting. At this point, it is rather obvious that in order to study the discourse operationalisation, one needs to go beyond the level of text and use other methods such as fieldwork. The latter provides a further reason why this category becomes suitable for the purposes of my research.

So far, I have referred mainly to discourses, and the ways CDA can help in theorising the relation between public values and technology. It is precisely in creating a dialogue between disciplines that I place this endeavour. In the next sections I introduce the idea of *transdisciplinary* work, and the particular premises on technology and organising in the public sector that I follow in my work.

### 3.2 **Transdisciplinary work: theorising technology**

Adopting a dialectical-relational view of discourse in organisational life offers a distinct way to see how language figures in different aspects of organising. As I emphasised earlier, discourse is just one of the elements that are dialectically articulated in a given social practice. CDA offers a particular theorisation to deal with language and discourse, their properties and the specific ways that language can be deconstructed. By the same token, the other social elements (i.e. technology, public values) have their own distinct properties that are amenable to distinct forms of theorising. Within the CDA spirit, it is advocated to work in dialogue with other disciplines to theorise particular objects of research. Fairclough and colleagues refer to this as ‘*trans-disciplinary*’ research (Fairclough 2010, 2005, Chouliaraki and Fairclough 2010). The aim is bringing disciplines and theories together to address research issues that emerge out of ‘dialogue’ between them and as a source for theoretical and methodological development (Fairclough 2010, p.231). For example, some categories now commonly used in CDA (i.e. *recontextualisation*) are themselves the result of working in dialogue with other disciplines such as sociology, political economy and communication studies (Chouliaraki and Fairclough 2010, p.1217, Fairclough 2003, p.6 and 225, Fairclough 2010).

In this dissertation, a transdisciplinary work entails theorising public values and technology innovation accordingly. While I provided the theoretical underpinnings for public values in Chapter Two, the latter requires space here. That is, finding ways to theorise about technology in the public sector, as I shall do as follows. But first, let me introduce the current state of e-government theory and the main premises I draw upon.

Theory-informed empirical studies that try to explain the interplay between technology and public organisations have shed light on critical aspects on the design, use and adoption of e-government to support processes of administrative reform (Fountain 2001, Bellamy and Taylor 1998). While within the studies of e-government the state of theory is not well developed and continues in progress (Heeks and Bailur 2007, Andersen *et al* 2010, Yildiz 2007), my work draws from various bodies of knowledge, mainly theories from public administration and political science, information systems and studies of organisation and technology. Such a project does not suggest, however, that there is no theory at all within e-government studies. Following others (i.e. Fountain 2001, Bellamy and Taylor 1998, Danziger *et al* 1982, Bloomfield and Hayes 2009), I approach the use of networked technologies in government not merely as information processing tools and communicating technologies but rather as elements of a larger socio-technical system composed of humans, technologies, politics and values, as well as knowledge and tensions, and in *context*. Under this approach, which can be grouped generally within the ‘ensemble view of technology’ (Orlikowski and Iacono 2001, p. 125-6), technology innovation is part of complex socio-political processes, in which technology affects and is affected by others elements of social practices—organisational structures, processes, end users, institutions, discourses. Contrary to other disciplinary views in which technology is commonly treated as a black box (i.e. most public management studies), the usefulness of this approach relies on the distinctive characterization of technology within social complex contexts. This first distinction is of importance, because it rejects the tool view of technology that assumes that technology is unproblematic and expected to do what it has been intended for.

In addition, the idea that complex social and institutional as well as technical issues are embedded in the process of design and implementation of a particular technology is

well documented among information system scholars as well as within those interested in the studies of organisation and technology (i.e. Avgerou 2002, Orlikowski 2000, 1992, Coombs *et al.* 1992, Fountain 2001, Zammuto *et al.* 2007). Given its complexity, technology innovation in the public sector (e-government) and its surrounding factors can be unique or highly contingent. Yet, this is not to say that these outcomes cannot be studied or deconstructed. On this basis, my work builds on common research trends from research in information systems and institutional change, that see technology innovation in the public sector (e-government) as immersed in combinations of political drivers and organisational changes designed to support and drive a transformation in the organisation and practices of public bureaucracies (Fountain 2001, Kallinikos 2006, Bloomfield and Hayes 2009, Cordella and Ianacci 2010, Danziger *et al.* 1982).

The particular connection between technology and public values in the public sector may be multifaceted. For example, scholars have documented that computerized systems can embody bureaucratic rules and related actor's agendas (Clegg 2006, p. 108, Fountain 2001, p.62, Kallinikos 2006, Danziger et al 1982). In turn, it is recognised that technology can imbue political values in complex and rather opaque ways (Introna and Nissenbaum 2000, Introna 2007). By the same token, Joerges and Czarniawska (1998, p. 382) remark that institutions can become inscribed in machines and technical norms—a concept they call 'organisational inscriptions'.

These premises suggest that, in principle, CDA offers a suitable tool to unfold the dynamics associated with a particular technology. A connecting line emerges from the fact that technology needs to be understood in context, it is dynamically constructed, and internalises as it is internalised by other elements of social practices. Despite the *a priori* suitability of CDA to theorise technology in such ways, the work of Fairclough and colleagues remains largely unknown within IS research (but see Thompson 2004, Klecun 2011). In the next sections, I elaborate on the sociotechnical paradigm in e-government research, and the ways I theorise the type of "IT artifact" that I will be dealing with.

### 3.2.1 Technology innovation and properties of technology

In their influential article, Orlikowski and Iacono (2001) call for an increased analytical attention to technology in information systems research, what they call the IT artifact. For the authors, IT artifacts are “those bundles of material and cultural properties packaged in some socially recognizable form such as hardware and/or software” (2001, p. 121). The authors review the literature in leading IS journals to find that the IT artifact is, within the discipline, usually taken for granted, marginalised or presumed unproblematic.<sup>18</sup> While Orlikowski and Iacono (2001, p. 130-131) admit that theorising the IT artifact may take different forms, they offer five premises:

- (1) IT artifacts should not be understood as natural, neutral, universal, or given: “because [they] are designed, constructed, and used by people, they are shaped by the interests, values, and assumptions of a wide variety of communities” (p. 131)
- (2) IT artifacts are always imbued in context (spatial, discursive, temporal and social);
- (3) IT artifacts are not uniform, unified or stable entities, but rather an array of multiple and interconnected components;
- (4) IT artifacts *emerge* from a variety of social practices; they are neither fixed nor independent;
- (5) “IT artifacts are not static or unchanging, but dynamic” (p. 131): any stability is conditional upon history, social processes and their own innovations.

Among the premises that Orlikowski and Iacono (2001, p. 131) suggest, is the need to be specific about the type of technology that is being dealt with for a particular research. I broadly refer to technology innovation as the use of the internet and related ICT in government. In turn, recall that, as stated in the introduction, I define ICT as those technologies for the processing, storage, and transmission of digital material, which consist of ensembles of hardware and software with distinctive feature sets that allow

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<sup>18</sup> This view is usually the norm rather than the exception within management and organisation studies, as the extensive literature review of Orlikowski and Scott suggest (2008, pp. 434–6).

physical storage and logical representations of different forms of data (Mutch 2010, p. 507). More specifically, the type of technologies I refer are somehow similar to *enterprise systems*, in the sense that they entail the use of hardware and application software to manipulate large bodies of data, to automate and support bureaucratic processes, information flows, and reporting across the central government. In addition, these technologies rely on networked communications such as the internet; this is usually why they are referred as networked computing (i.e. Fountain 2001, chapter 3).

These technologies bring interesting potential dynamics. The first one is *automation*: computer based systems can replicate manually performed tasks and lead to greater efficiency of existing data processes (Bellamy and Taylor 1998, p. 38-9). In addition to automation, networked technologies bring unique capacities for *informating*, that is, to process, handle and storage of information in a logical and meaningful way (Fountain 2001, p. 33, Kallinikos 2006). Based on the seminal work of Zuboff (1988), Bellamy and Taylor add to this by suggesting that the way software encode information processes enables reflection upon the organisation (1998, p. 26-77). Moreover, networked technologies may offer the potential to affect *coordination*, *communication* and *information flows* within and across organisations (Fountain 2001, p. 32). New networked technologies allow for *shared databases* to be accessed in easily and retrievable form over time. “Data collected at remote filed locations, once digitized, can be easily available at headquarters as in filed locations and may be easily transferred” (Fountain 2001, p. 35). Taken together, these capacities of networked technologies can lead to *rationalisation* of the organisation by process integration, restructuring of tasks, decentralisation and simultaneous centralisation.

For my purposes, although the characteristics of networked technologies are somehow broad, they serve the purpose to set the basis for the type of technology innovation I will be referring to. At this point, it is useful to think in terms of the operational complexities and the type of process change in light of the stages of development of e-government. Thus, the type of technology innovation that I will be referring falls into the middle and later stages of development; that is, technology innovations that require the modification or integration of the back-office within one agency and/or the

integration with other agencies. The integration, in turn, may require changes with effects on the internal agency structure, culture and/or operations.

Finally, I shall say that these capacities of networked technologies are only indicative, and by no means, these potential effects should be understood as deterministic. Technology innovation and its outcomes are subject to their interaction with other elements of the socio-technical system. Although technology innovation may fix some possibilities (Mutch 2010, p. 514-5), their implementation remains rather open and ambiguous (Bellamy and Taylor 1998, p. 31). Even though broad, these properties are particularly salient for their possible effects on bureaucratic norms, the embodiments of rules, and coordination within and across institutions and organisations, that I shall review in the next section.

### **3.2.2 Bureaucracy and Technology**

It has been commonplace to find claims suggesting that ICT changes the structure of organisations. Much has been said or written about the potential for networks to replace hierarchies, and markets to replace bureaucracies. Technology innovation may play a crucial role, even though their understanding and analysis have appeared nominal within studies in the field (Fountain 2001). In other words, few e-government studies have addressed how information and communication technologies fosters, strengthens or neglects the distinguishing character (*ethos*) of bureaucracy (but see Fountain 2001, Kallinikos 2006). While the issues surrounding bureaucracy either as organisation or institution of modernity are by far complex (Kallinikos 2004, Clegg 2011), the intention of this section is to revise key elements Weber's bureaucracy and the role that networked technologies may play.

Whilst Weber's view of bureaucracy conforms to an ideal-type, his depiction of this organisational form summarizes important trends in industrial capitalism that became a central model to public administration since the early twentieth-century (Fountain 2001, p.45). Weber's depiction of bureaucracy as an ideal-type was opposed to the personalistic, patrimonial systems characteristic of pre-modern or early modern systems

of governance in state and economic life in general (Fountain 2001; Kallinikos 2006). As an organising regime of modernity, modern rational-legal bureaucracy entailed key elements: jurisdiction, the principle of hierarchy and a clear system of rules, whilst at the same time bringing together qualified, well trained and impersonally selected officials. Written documents were the basis of management and general rules govern the management of the office (Weber 1978; Fountain 2001). Fountain reviews these features, and combines central elements of bureaucratic structures (supervision and standardization) and functions with the potential transformations technology could have on them (summarized on the table below).

<b>Elements of Weberian bureaucracy</b>	<b>Elements of a virtual bureaucracy</b>
Functional differentiation, precise division of labour, clear jurisdictional boundaries	Information structures using information technology rather than people; organisational structure based on information systems rather than people
Hierarchy of offices and individual	Electronic and informal communication; teams carry out the work and make decisions
Files, written documents, staff to maintain and transmit files	Digitized files in flexible form; IT staff maintains hardware, software and telecoms
Employees are neutral, impersonal, attached to a particular office	Employees are cross-functional, empowered; jobs are limited not only by expertise but also by computer mediation
Office system of general rules, standard operating procedures, performance programmes	Rules embedded in application and information systems; an invisible, virtual structure
Slow processing time, delays, lags	Rapid or real-time processing
Long cycles of feedback and adjustment	Constant monitoring and updating of feedback; more rapid adjustment possible

**Table 5: Comparison of Weberian and Virtual Bureaucracies**

Source: adapted from Fountain (2001, p. 61)

Technology innovation has a potential transformative effect and, as the table suggests, networked technologies have already brought changes in the way public agencies are structured as well as in the way they perform their functions. For example, digital files have replaced old and rigid written files, making them more flexible and less based on people; the same applies to the old slow processing times versus the quicker and real-

time possibilities of communication and feedback that ICT has made possible. These examples, in turn, connect with the properties of *automation*, *informating* and *communicating* presented earlier. In other areas, the changes are less fundamental: even when the internet and ICT have shortened the chain of command, hierarchy has remained central. Networked technologies are, therefore, deeply implicated in rationalisation processes of bureaucracy:

(t)he use of the Internet in bureaucracy is likely to lead to greater rationalization, standardization, and use of rule-based system. These rules may not be visible because most of them will be hidden in software and hardware (Fountain 2001, p.62).

Overall, and despite the differences that emerge from the table, Fountain asserts that the increased use of ICT has changed but not diminished the importance of bureaucracy: “Bureaucracy, in either rendering, has not diminished in importance” (Fountain 2001 p. 63). This does not mean that new structures and ways of acting and interacting may emerge from the use of networked technologies in government. The bureaucratic capabilities, routines and roles may be conditionings for technology outcomes. This leads us to the next section, and the ways e-government research has illuminated the factors that mediate technology innovation and its outcomes in government organising.

### **3.2.3 Technology enactment and public sector studies**

Recall that my research work is built in the socio-technical tradition within e-government and organisation studies more broadly; that is, a social theory view on technology innovation. The socio-technical tradition has a longstanding history within the IS field, although its influence on technology innovation in public organisations has been more erratic. Although the majority of researchers in e-government recognise that the socio-technical features either mediate or influence the impacts of e-government, most lack an explicit use of theoretical frameworks (Heeks and Bailur 2007, p. 254). In what follows, I present the technology enactment model and related research that has contributed towards theory development in the field of e-government. The rationale for



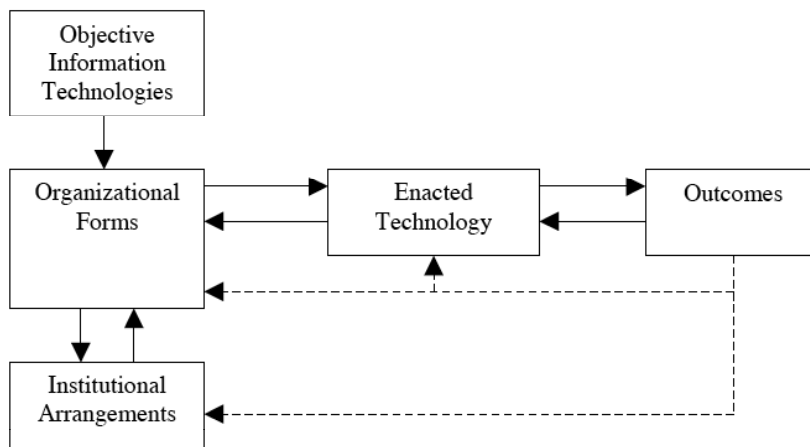
including these theoretical developments here is to expand on the dynamics that underlie technology innovation within the public sector more explicitly.

Back in the 1970's, a programme of research at the University of California, Irvine conducted a project to assess the state of the art in local government computing, to evaluate their impacts on several outcomes and outputs, and to provide recommendations for local practitioners. The research programme produced a collection of cases contributing to theory development, and published as a book in 1982 (Danziger *et al.* 1982). In the book "*Computers and Politics*", Danziger *et al.* (1982) touches several aspects of today's well know socio-technical systems. First, the authors find that computing did have distinctive politics, which contradicted the dominant managerial rationalism views that considered computing as apolitical. Second, while computers seemed to have improved the work conditions of government employees, technical problems also arose leading to the interruption and inconveniences for the operation of many governments. Finally, there has been little evidence to support that computing has increased service delivery to citizens; on the contrary, the uses of computers have supported mainly existing internal administrative practices and practices of bureaucratic control (Danziger *et al.* 1982, p. 221-3). The authors conclude stating that the extent to which redistribution of computer access and benefits is achieved depends upon the will and interests of powerful stakeholders, such as policy makers, managers, and computer specialist (p. 244). Further research expanding on similar issues was carried out in a *Symposium on Public Management Information Systems* in 1986 (i.e. Kraemer and King 1986, Bozeman and Bretschneider 1986) and later commented by two authors coming from the same socio-technical tradition (Kraemer and Dedrick 1997). Despite the internet era, the advances that this socio-technical approaches brought in terms of theorising different impacts of computing in public organisations was somehow marginalised.<sup>19</sup>

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<sup>19</sup> Kraemer and Dedrick (1997) conducted a review focused on empirical research in computing in public organisations as a follow up from the 1986 Symposium on Public Management Information Systems. The article's goal was to update empirical research dealing with the ways public organisations manage information technology, as well as the several impacts technology have on organisational variables such as effectiveness, employment, and organisational politics. In that occasion, the authors remarked that: "the most striking weakness of current research, in comparison with that of a decade ago, is its sheer paucity." (1997 p. 106) Yet, its slow progress was not the main concern, as they proceed: "we were hard pressed to find in die leading journals of public management, information systems, or business administration many research articles about computing in public organizations." (p. 107) My own review of the literature suggests a similar pattern. For example, for the period 1980-2010, I found only 4 articles in the *MIS Quarterly* that dealt with technology in public organisations seriously while there were literary no articles in

More recently, Jane Fountain developed what she called the “Technology Enactment Theory” (Fountain 2001). In her book, *Building the Virtual State*, the author develops an analytical framework to understand the adoption of information technology in the public sector. Bringing together notions from institutional theory, organisational networks and Giddens’ structuration theory Fountain’s work proposes theoretical lenses for understanding how public organisations, technology and institutions interact. The analytical model considers that objective technology (this includes the internet and other networked computing systems) are adjusted and modified when it enters into a given organisational setting. Those organisational forms affect and are affected by existing institutional arrangements. Thus, enacted technology is the perception, design, and use of objective technologies, once the two processes—organisational forms and institutional arrangement—have already ‘filtered’ them (Fountain 2001, chapter 6). The next figure summarizes Fountain’s model.



**Figure 3: Technology Enactment Framework (Fountain 2001)**

Fountain’s work “illuminates the critical role played by socio-structural mechanisms in organisational and institutional arrangements as public managers struggle to make sense of, design and use new IT” (2001, p.89). Both, information technologies and

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*ISR*. On the other hand, with few exceptions, the literature within public management and political science tend to either black-box technology or consider it marginal (Dunleavy and Margetts 2010).

organisational and institutional arrangements affect each other reciprocally. In the context of her study, this means that even though in theory e-government programmes are designed following a broader reform agenda (the USA National Performance Review), the technology enactment model predicts that its outcomes are unclear and uncertain *a priori* (Fountain 2001, p. 98). Because there are highly complex social processes embedded in the technology enactment, the outcomes of technology enactment are said to be multiple, unpredictable, and indeterminate; “outcomes result from technological, rational, social and political logics” (2001, p.98).

Fountain’s technology enactment framework has been largely acknowledged within the field, but it has been criticised too. Some scholars neglected its originality arguing that the author failed to acknowledge existing research and findings from public administration and information technology studies (Bretschneider 2003, Garson 2003, Norris 2003). More precisely, the critics referred to the insights from socio-technical systems theory, in which end users, existing organisational processes and structures among other variables affect the ways technology is implemented inasmuch technology may affect these variables (Norris 2003, p.419). Despite the critics, Fountain’s work remains a remarkable effort—both theoretically and empirically—in e-government research (Danziger 2004, Yildiz 2007).

There may be aspects that remain under-theorised or not tested in Fountain’s work. For example, the technology enactment framework tells very little about how different agents involved in the process of technology enactment overcame institutional constraints (Yang 2003). In addition, the *political* nature of technology selection and design are not discussed in her model (Cordella and Ianacci 2010). These are important aspects that can be studied through CDA, as I show later.

In sum, I draw on various theoretical aspects of Fountain’s work as well as other insights from socio-technical tradition to illuminate the dynamics and mechanisms that underlie technology innovation in government. In the next section, I bring together CDA, e-government and public values theory and present the overview of my ‘theorising device’.

### 3.3 Theorising technology innovation and public values through CDA

My research is concerned with eliciting the underlying public values that are presented and eventually enacted in processes of e-government over time. A research concern with unfolding the relation between public values and technology innovation entails understanding *how* these discourses are enacted and operationalised into technology and new ways of acting and interacting (Fairclough 2005, p. 934). On the importance of studying the role of language in governing, Miller and Rose (2008, p.29) state that in order “to analyse the conceptualizations, explanations and calculations that inhabit the governmental field requires an attention to language.” They express that language and politics (and I would add ideals on public values) is a mutually constitutive relationship (Miller and Rose 2008, p. 30-31):

For it is in language that programmes of government are elaborated, and through which a consonance is established between the broadly specified ethical, epistemological and ontological appeals of political discourse –to the nation, to virtue, to what is or is not possible or desirable- and the plans, schemes and objectives that seek to address specific problematizations within social, economic or personal existence.

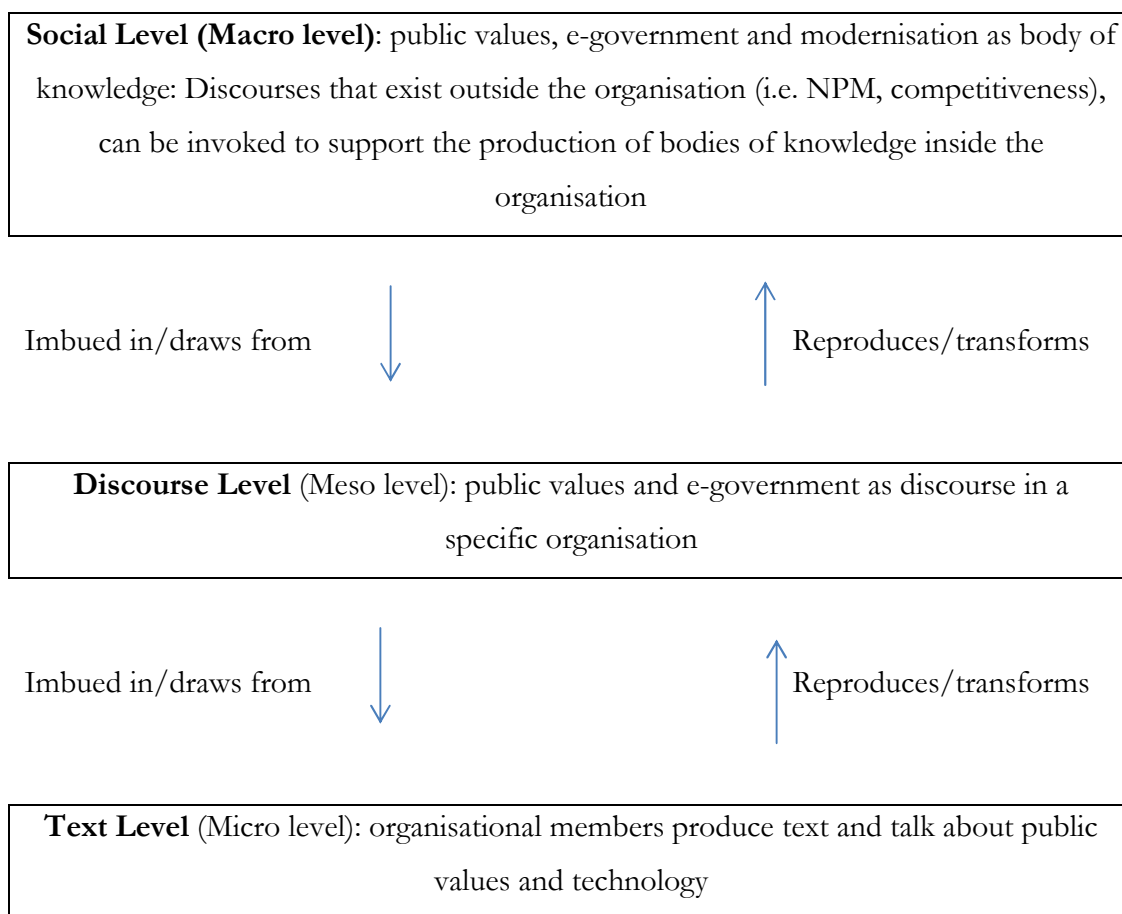
As for the purpose on my dissertation, I claim that CDA, in conjunction with the particular theorisation of technology innovation and public values that I offer, is a suitable approach to address my research questions. In other words, CDA offers both a useful theoretical framework and a practical methodology to study the relation between public values and technology within a historical context.

CDA is essentially open to a transdisciplinary focus. As for matters on public values, I have already shown that there is no universal consensus on public values, as there are no universal truths (Sayer 2000, Reed 2005, p. 1623). Public values take meaning in a particular historicity, social practices, space and time that make them an outcome of *ethico-political* complexes (Willmott 2010).

As per technology innovation is concern, I have shown the particular properties of technology, as well as the particular ways of theorising the 'IT artifact' that are relevant to my study. As Orlikowski and Iacono suggest (2001, p. 129), there is much potential in seeing technologies and organisations as mutually dependent and dynamically emergent, as a way to move beyond relatively simple black-boxed views of technology (i.e. tool view). That is, the material properties of technology innovation and the dynamics of technology enactment in the public sector suggest a particular set of conditionings as well as imaginaries on their associated public values. In turn, I have also presented that there are certain conceptions about public values and technology that emerge from the literature (Chapter Two). Hence, these normative views can be reasonably taken as part of broader discourses on public values and e-government.

Based on Fairclough three-dimensional analysis, complemented with Phillips et al (2008, p. 781, and Vaara (2010, p. 7), the theorising device for studying the relation between public values and technology through CDA is presented below.

In summary, I hypothesise that there is a dialectical relationship among discourse, public values and technology: "the meanings of discourses are shared and social, emanating out of actors' actions in producing texts; at the same time, discourse gives meaning to these actions, thereby constituting the social world" (Phillips *et al.* 2004, p. 637). Discourses at the social level imbued meanings and practices at the level of the organisation, which in turn shape the way particular actors, produce text and talk. The schema is a simplification and does not necessarily accounts for *time*. I preferred to highlight how particular discourses at the societal level shape a given organisational discourse, that in turn influences the production of text and talk at the micro level.



**Figure 4: Theorising public values and technology innovation through CDA**

To take account for the ways discourses on public values and technology are *operationalised*, requires an understanding of text *production*, *interpretation* and *consumption*. I will follow these concepts in the analysis to trace how discourses travel downwards and upwards accordingly. It is in the *materialisation* of discourses that I will draw on the particular properties of technologies, discussed previously.

All in all, a CDA approach—and the particular transdisciplinary version outlined here—becomes relevant to my study in the following ways:

- Working in dialogue with the theories of public sector reforms, public values and technology in government helps to define relevant categories of analysis (i.e. public value and e-government clusters) (transdisciplinary approach);
- Following the three-dimensional approach, the conceptual categories combined with textual analysis and the extensive data gathered as part of the fieldwork (*inter-discursive* analysis) can help eliciting which values were represented in key texts as well as what consequences and actions they triggered within the project;
- Finally, as a consequences of the two previous points, a CDA approach can illuminate the analysis on the linkages between public values and technology, in a particular context and over time, to add to our understanding of processes of technology innovation and change in government.

### 3.4 **Conclusions**

As means of bringing together the choice of concepts that I comprise in my theorising device (or framework), Gregor (2006) offers a useful framing. In her essay, the author discusses the nature of theory in information systems research and addresses issues of causality, explanation, prediction and generalizability within the field. Gregor (2006, p. 620) suggests that there are multiple perspectives on the role of theory in information systems, each comprising its own set of assumptions and versions on their structural components, such as means of representation, constructs and scope (p. 620). Based on the different goals of the research, Gregor proposes a taxonomy to classify different types of theory. The author argues that there are five types of theory: theory for analysing, for explaining, for predicting, for explaining *and* predicting, and for design sciences. Given my research purposes, I draw on theories that fall in the first two categories. That is, I am interested in identifying and analysing what types of public values are presented in the case, but also to understand them in an analytically useful way. For this purpose, I draw on public values theory and the concepts I presented in Chapter Two. More precisely, the role of public values theory has been in framing what public values are, where they can be found and what sorts of public values are commonly found in procedural oriented agencies that deal with e-services. This second

part has been an insight from empirical findings from e-government research. I claim that the role of CDA in my work—in conjunction with e-government theory and the theorisation of technology innovation in the public sector—not only helps to explain and analyse what public values are and how they relate to technology, but also to explain and understand how the relation is, how it evolves over time, when and in what context. For this reason, my theoretical framework falls partly in theory for explaining, which can be best regarded as “theory for understanding” in Gregor’s (2006, p. 624) terms.

My objective in this chapter has been to put different sets of theoretical concepts from different fields into dialogue to better understand the linkages between public values and technology innovation in the public sector through the role of discourse in organising. All in all, I placed emphasis on theory that can help to describe, analyse and explain the content of the relation between public values and technology innovation in as well as its dynamics over time and in a given context. The theorising device that I presented in this chapter lays the foundations for the longitudinal case that I present later on. But before that, I shall provide an extensive description on the methodological foundations that I have followed in my research.



#### 4 Chapter Four: Methodological underpinnings: case study research design

while CDA does in a sense constitute a method of analysis, the methods employed in any specific piece of research which draws upon CDA are likely to be a combination of those of CDA and others

*Norman Fairclough 2003, Analysing Discourse*

The choice of a discursive lens—CDA—to study the relation between public values and technology innovation led to particular methodological arrangements. This chapter explains the ways I have designed and implemented my empirical investigation. It is important to stress that my overall research design place CDA as part of a longitudinal case study. While some authors categorise the case study as a method (i.e. Crotty 1998, p.5), in my dissertation, I understand case study as an overall research strategy that draws on different data collection techniques and that relies on critical discourse analysis (CDA) as the main method for analysis. Therefore, in this chapter, I elaborate on the scope, data collection and data sources and the particulars of the data analysis that I have conducted.

To give structure to explain my research design, in section 4.1, I elaborate on the philosophical assumptions that have inspired my theorising effort. In section 4.2, I explain in detail my overall strategy of inquiry—that is, my longitudinal case study. The section is divided in three subsections intended to cover the relevant aspects of the reasons for the selection of the case, my data collection and data sources. Section 4.3 revises extensively on the particular linguistic and semiotic techniques that I have used to reveal the discourses on public values and technology within the case. In Section 4.4, I provide two related rigour checks for my research strategy: on case study quality and protocols for conducting CDA. Finally, I include a final reflection in section 4.5.

#### 4.1 Philosophical assumptions

The previous chapters offer some general ideas of the relevance of critical realism as the underlying philosophy of the critical discourse analysis version that I use on my work. By adopting a critical realist position, this dissertation rejects the idea that organisations are just discursive constructions and cultural forms with no significance beyond their textually created and mediated existence (Reed 2005, p.1622)—or in extreme terms, that everything *is* discourse. The underlying philosophy adopted here sees discursive practices as formations that, while being socially constructed in one part (i.e. linguistic arrangements), are subject to historical and structural variations related to the particular temporal and spatial contexts in which they are constituted and developed (Fairclough *et al.* 2002, Fairclough 2005a, Reed 2005, p. 1623). In other words, as Reed (2005, p.1623) suggests, this philosophy rejects the empiricist and positivist quest for universal principles, and favours a more relativistic conception of knowledge production and dissemination. In words of the author:

All theoretical descriptions, explanations and evaluations are grounded in knowledge generating and diffusion processes that are temporally and spatially located in historical and social settings that makes them fallible, contested and revisable. But this does not legitimate a postmodernist discursive reductionism in which scientific research, theory generation and explanation are reduced to rhetorical or linguistic constructions that have no reference to or anchoring in an independently existing world.

Such an idea calls for a realist stance, instead of an extreme social constructionist view, in which social structures are collapsed into discursive agency. Critical realism assumes a ‘stratified ontology’, which sees processes, events and structures as different layers of social reality with distinctive properties. This implies seeing life as an ‘open system’, with various dimensions and social elements that are governed by simultaneous generative mechanisms (Bhaskar 1986 as appears in Chouliaraki and Fairclough 1999, chap. 2). In turn, no mechanism has determinate effects on events because the operation of any mechanism is always mediated by the operations of others; events are complex and not predictable in any simple way (Chouliaraki and Fairclough 1999, p. 19). These mediating instances are the social practices that are central to CDA. “The reason for centring the concept of ‘social practice’ is that it allows and oscillates between the

perspective of social structure and the perspective of social action and agency—both necessary perspectives in social research” (Fairclough 2003, p. 205).

Critical realism has increasingly inspired research in organising and management studies (Ackroyd and Fleetwood 2000, Reed 2001, 2005, 2009, Ackroyd 2009, O’Mahoney 2011) as well as in information systems research (Mingers 2004, Smith 2006, Volkoff *et al.* 2007, Zachariadis and Scott 2007, Hevner *et al.* 2010, Mingers and Walsham 2010, Mutch 2010). Yet, the potentials to realise a critical realism ‘turn’ are far from being fulfilled (Mingers *et al.* 2011 in their call for papers). In my research, critical realism is better acknowledged as a philosophical platform that accepts elements of *interpretivism* and *constructionism* (not constructivism, which is different)<sup>20</sup>, such as the ‘abductive’<sup>21</sup> data analysis method that I will describe below (Mingers *et al.* 2011 in their call for papers). As Sayer (2000, p. 32) suggests, critical realism “has a relatively open or permissive stance towards epistemology” (that is, the nature and scope of knowledge). Accordingly, Crotty (1998, p. 63) provides a clear stance to clarify for point further: “constructionism in epistemology is perfectly compatible with a realism in ontology—and in more ways than one”. In other words, when I suggest that a meaningful reality is socially constructed, I do not mean that it is not *real*.

My main point here is to show that critical realism is the philosophical platform that underlies the specific research design and the theoretical constructs that I bring together in my dissertation. More specifically, I refer to the dialectic role of discourse and semiosis in organising processes (Fairclough *et al.* 2002, Fairclough 2005, 2010), the relational character of technology (i.e. Volkoff 2007, Mutch 2010), and the contextual and relative nature of public values (Bozeman 2007, Beck Jørgensen and Bozeman

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<sup>20</sup> Usually, references to constructionism and constructivism are far from consistent in the literature of social science research (Crotty 1998, p. 57-58). Constructionism (as the epistemology I am using) is the view that “*all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context*” (Crotty 1998, p. 42, italics in the original). This is different to what Reed (2005, p.1622) mentions as a ‘radical social constructionist’ philosophy (post-structuralist-postmodernist informed), which views organizations as discursive constructions and cultural forms that have no ontological status beyond their textually created and mediated existence. The latter is usually associated to extreme constructivist views on discourse in organising that are not adopted in my research.

<sup>21</sup> Reed (2005, p. 1631) offers a succinct definition on this concept: “[abduction] aims to reconstruct, re-interpret and deconstruct, the tacit meanings and motives through which relationships and actions are discursively constructed and represented.” This idea is broadly used in empirical studies on strategy, such as in Vaara *et al.* (2008), Vaara and Monin (2010), Vaara *et al.* (2010).

2007, Willmott 2010). For the particular uses in the CDA approach that I follow, Fairclough (2005, p. 935) crystallises the value of relying on a critical realist perspective to study aspects of organisational change:

a commitment to discourse analysis in organizational studies entails neither a reduction of organizations to organizational discourse, nor a reduction of organizational analysis to the ‘organizing’ (...) Discourse analysis is consistent with a realist approach to organizational research which distinguishes organizational process and agency from organizational structures, and focuses research on the relations and tensions between them. Incorporating discourse analysis into a realist approach both ensures that questions of discourse are properly attended to in organizational studies, and avoids these forms of reductionism.

By suggesting the compatibility between constructionism in epistemology and realism in ontology, I do not intent to conflate different epistemologies and assumptions. Rather, my aim is to be transparent about my inspirational theoretical and methodological sources and to show the ways I have made use of them in my dissertation. In what follows, I present the particular methodological choices that govern my strategy of inquiry.

## 4.2 **Strategy of inquiry: longitudinal case study and CDA**

### 4.2.1 **Longitudinal case study**

My dissertation builds upon empirical fieldwork conducted in Mexico and follows a single, in-depth longitudinal case study strategy, which is informed by a critical discourse analysis approach. In general terms, a case study strategy is chosen because of its appropriateness for asking in-depth how, and why questions, in which no experimental control is possible (Yin 2003, p. 5, Myers 2009, p. 73). In his book on qualitative research, Myers (2009, p. 76) defines case study research as one that “uses empirical evidence from one or more organisations where an attempt is made to study the subject matter *in context*” (emphasis added). Given my interest in analysing discourses on public values and technology, choosing a qualitative case study allowed me to conduct a detailed and multifaceted analysis of various texts and talk that happened within a given *context* of social practices (Fairclough 2005a, Vaara and Monin 2010, Vaara *et al.* 2010).

Myers (2009, pp. 72-3) explains that case studies can be used in exploratory research (to discover) and in explanatory research (to test, to explain, or to compare). Defined as an overall research strategy for my dissertation, I use my case study in both ways: to discover *what* discourses on public values and technology can be traced in a particular context, and also to explain *how* these discourses are produced, consumed and enacted in the process of organising, and *why* this happens.<sup>22</sup>

The next chapter (Chapter Five) presents a detailed account of the Mexican case, its context and process features, which I elaborate in narrative terms. In brief—and as I already anticipated in the introduction—the study is situated in the Mexican central government sector and in the area of foreign trade regulations. Mexico’s central government is comprised of several agencies that are coordinated in a Cabinet, which is accountable to the President. My entry point to the case is the Ministry of the Economy, a federal government unit that is responsible for trade policies in the country, their operation and administration. The Ministry of the Economy is, in broad terms, the main unit of analysis. Within this Ministry, I study the processes underlying the design and pre-implementation of a technologically enabled Single Window for Foreign Trade regulations (hereafter Single Window)—in Spanish, *Ventanilla Digital Mexicana de Comercio Exterior*.<sup>23</sup> The design and pre-implementation phases of the Single Window started formally in March 2008 and inaugurated by the President in January 2012. I therefore pay special attention to this four-year period (2008-2012). In addition, I elaborate on a previous and smaller technological platform for the internal operation of trade regulations that the Ministry of the Economy designed and implemented since 1996 called *SICEX*. I do not understand *SICEX* as a separate unit of analysis, but rather as the background for the Single Window.<sup>24</sup> Given the timeframe covered—

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<sup>22</sup> This links with the conclusions of Chapter Three, where I discuss the role of theory based in my research based on Gregor (2006).

<sup>23</sup> In the literature, single windows are also referred as one-stop-shops.

<sup>24</sup> Within the category of single-case study designs, Yin (2003, p.39-40) makes the distinction between holistic and embedded cases. The former involves a single unit of analysis, while the latter comprises more than one unit, or subunits. According to this, the process of design and implementation of the Single Window and its previous project —*SICEX*— could be interpreted as single case design with embedded units of analysis. However, Yin (2003, p.25-26) itself deals with the difficulty of defining the unit of analysis. Thus, in broad terms, my unit of analysis can be defined as the Ministry of the Economy, and in particular, the part of the Ministry that deals with trade regulation. From this perspective, both *SICEX* and the Single Window are *developing* cases within the same unit of analysis., and that is why I do not consider them as separate embedded units.

retrospectively and in real time analysis—I refer broadly to a *longitudinal* case study, which maps out key events within a historical context to reveal the essential discourses and social dynamics underlying the case. As I shall demonstrate in the analysis chapter (Chapter Six), I will be using data and events from the implementation of SICEX systematically to analyse the trajectories of the discourses on public values and technology, and their production and consumption over time. In sum, in temporal terms, the case covers a 16-year period (1997-2012).

#### **4.2.2 Reasons for the selection of the case study**

Flyvbjerg (Flyvbjerg 2006, p. 229) suggests that the selection of a case may play a significant role for theory development, theory testing and generalizability. In either case, the author suggests, the case selection should be consistent with the purpose of the research. A general distinction is based on the *type* of selection; that is, depending on whether the objective of the selection is to find average or typical cases on one hand, or to achieve very rich accounts on a particular problem or phenomenon on the other, the researcher may go for random or information-oriented selection respectively. Yin (2003) offers a similar rationale for single case studies selection. According to the author (Yin 2003, pp. 40-2), a single case design can be: (a) critical, (b) extreme or unique, (c) representative or typical, (d) revelatory or (e) longitudinal. Each of the designs, in turn, provides different types of exemplars for theory testing, theory building or exploration. Although the selection criteria seem useful, researchers must also count on their intuition and pragmatics. For example, gaining and maintaining access to the site requires good social skills (Walsham 2006, p. 322), regardless of the type of study to conduct (i.e. interpretive, positivistic or critical). In addition, scholars have also suggested that even when choices may be deliberately made at the beginning (i.e. selecting an extreme case), the researcher's involvement and understanding of the case may lead to a change at the end (Flyvbjerg 2006, p. 231, Yin 2003, Myers 2009).<sup>25</sup>

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<sup>25</sup> This is what Flyvbjerg (2006, p. 231) describes with his own experience studying urban politics and planning in Denmark. What it first started as a critical case (theory testing type), his research findings led him to end up with an extreme case.

The way I selected the case in Mexico was mainly based on the potentials that, at that time, the case offered. Reflecting backwards, the case I study is a combination of what Yin defines as *longitudinal* and *revelatory*. It is longitudinal as it entailed looking at a series of historical events to map how discourses were produced, enacted and transformed over a long period of time. It is also revelatory from the point of view that the processes were not previously studied. Perhaps more closely, the case falls into significant case in the sense of what Yin (2003, p. 162) identifies as important in the construction of an exemplary case study: “the underlying issues are nationally important, either in theoretical terms or in policy or practical terms”. As I shall explain in more detail in Chapter Five, the Mexican Single Window is exemplar in the sense that (i) public values imbedded in the case are, in theoretical and practical terms, of national importance; (ii) foreign trade in Mexico is the engine for economic growth, and thus, of national importance. The selection of the case, by all means, represents only the first stage. Below, I provide details on the data sources and data collection techniques that I have followed.

#### **4.2.3 Data collection and data sources**

I am interested in reconstructing actual episodes and processes in the case study that can be helpful to reveal the presence and trajectory of public values and its relation to technology. Immersion in context, in turn, has been a hallmark of my study (Kaplan and Duchon 1988, p. 572). For this purpose, I followed data collection strategies that are complementary (Langley 1999, 2009) and particularly useful for critical discourse analysis purposes. These include *observations in vivo* (meetings, informal conversations, and recording events), collecting *memories* and *interpretations* (semi-structured interviews, news articles) and collecting *temporally-embedded artifacts* (several internal plans and reports, internal presentations and documents).

As in other studies (i.e. Pettigrew 1990), time is captured as a combination of retrospective and real time analysis. Real time analysis included an initial 8 month-exploratory study that I conducted from August 2006 to March 2007 in the Ministry of the Economy, which mainly served as the basis for understanding the complexities of trade regulation and the ideals behind the construction of the Single Window. Most data

collection relevant for the current research took place during a fieldwork trip in spring of 2009 (March to June), and then again in the spring of 2010 (May to June). Follow up interviews were conducted over the phone since then. All materials were recorded and kept in their original language (Spanish).

Part of the fieldwork entailed conducting 42 in depth interviews with 35 single individuals<sup>26</sup>, most of them face to face, with an average time of one hour to one hour and half per interview. Appendix I and II provide extensive supporting data on the type of informants, length, and moment in the case that I have conducted the interviews. While on site, I kept a daily summary of the main reflections emerging from the empirical work and then used when recapping the case study. Direct observation also provided a further resource to my research inquiry. During fieldwork I spent most of the time working from an office within the Ministry of Economy. I participated in three key meetings during spring 2009, where the plans and design of the Single Window were under way. On average, these meetings lengthened two hours and a half. While no recordings could be made, I collected internal power-point presentations and kept written notes of key discussions, issues and questions as part of my fieldwork diary.

Given the fact that my focus is on the organising processes of government and how their actors produce, interpret and enact discourses on public values and technology, most of my data sources come from documents and talks with the government officials directly involved with the project. In addition, I also use media articles from local newspapers and private sector associations as a way to approximate the public's perceptions on the subject. The next table summarises the main sources of data that were collected and used in my research inquiry.<sup>27</sup> In Appendix I, II and III, I cover in detail the sources of my data and the reader shall refer to those in order to complement this section.

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<sup>26</sup> I interviewed the champions of the project more than once and in some instances and there were more than one person in the interview. Please see Appendix II for a detailed list of the interviews conducted as part of the research.

<sup>27</sup> Texts are seen as part of social events; some social events are textual in character (an interview, a recording of a litigation) (Fairclough 2003). To make sense of discourse, using CDA, the researcher needs to rely on very diverse forms of semiosis. Therefore, while in some disciplines text may be treated as secondary data, in my work, they became almost the primary data of research. Therefore, the distinction does not hold. What I see as important is to be transparent on my data sources and collection methods, and the ways I have analysed the data in my work (Leitch and Palmer 2010).



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### **Key texts analysed in depth (textually oriented analysis)**

The **Presidential Decree** that establishes the creation of the Mexican Single Window for foreign trade (January 2011)

**Memoirs** of 'Towards a paperless administration 2000-2006' (an internal document reporting the progress on the previous IT platform from 2000-2006)

**History of SICEX** (1999): an internal document of a previous and similar project in the Ministry

### **Interviews and meetings**

**42 semi-structured interviews** (of 1 and half hour on average), with 35 single individual

**3 meetings** with the Single Window team in 2009 (early phases of the design; 3 hours on average each)

### **Other documents (selected examples)**

**Terms of reference** of the open public tender for the Single Window sponsored by Customs (September 2010)

**20 internal power-point presentations** in electronic format that supports the official strategy and objectives of setting up the Single Window

**15 official presentations and speeches** from the leaders of the Single Window that emphasise goals, benefits and plans (mainly from ME and Customs, from 2010 and 2012)

**75 informative sheets** downloaded from November 2011 until June 2012 from the Single Window website

**95 news articles** from local newspapers, covering the period from January 2009 to June 2012

**Mexico's** National Development Plans (1995-2012)

**Mexico's** Modernisation programmes (several texts)

### **Other data**

Pilots and evaluations conducted by the researcher in 2006 as part of a broader study (Telecom-CIDE 2007)

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### **Table 6: Summary of data collections and sources**

See Appendix I, II and III for a detailed description of data collection sources and data corpus.

Partly because of the way I apply CDA on the case but also because of my concern with the case quality, my research design included multiple data collection methods and sources of data. For some scholars, case study research does not normally involve participant observation or extensive fieldwork (Myers 2009, p. 77). As far as CDA is concerned, a serious analysis requires going beyond the level of texts to include further empirical sources to make sense of the discourses, their production and ways to interpret them (Fairclough 2003, 2005, 2010, Chouliaraki and Fairclough 1999). Given the emphasis on the operationalisation of discourses as well as in constructing a meaningful context, I draw heavily on the fieldwork I have conducted in Mexico. For example, in addition to the analysis of key government texts, the interviews offered many insights on the aims, drivers, and motivations to drive technology innovation in government. That is, interviews proved to be crucial in interpreting discourses on public

values and technology innovation through CDA. I shall offer a more detailed use of the data in the following section 4.3.

#### 4.3 **Method of analysis: critical discourse analysis in practice**

The aim of this section is to explain the main strategies used for coding my data. For clarity purposes, I first explain the main phases I have gone through and I then elaborate on the particularities of the main linguistic features and relevant tools of critical discourse analysis that I have drawn upon.

##### **4.3.1 From data to coding discourses**

Even though I kept a diary and made analytical reflections while on site, most analysis happened after the main data collection was finished. Following Fairclough (2003, 2010) and the application of his approach elsewhere (i.e. Vaara *et al.* 2010, Vaara and Monin 2010, Vaara and Tienari 2008), the analysis I have conducted proceeded in stages, in an overall *reflexive* manner. The first stage involved the identification of the empirical sources to build the data (textual) corpus. As a result, the main empirical material included several key official documents from the government, the narratives from my fieldwork diary, interviews and the notes from the meetings that I attended.

With the corpus of data already being built, in the second stage I constructed a detailed timeline of the main events, episodes, project features and contextual factors covering the period 1995-2012. The construction of the timeline—which I introduce in the next chapter—was particularly helpful as a visual mapping tool (Langley 1999, 2009) to prepare the narrative of the case as well as to identify the main textual materials to trace relevant discourses. As discourses are historically located (Parker 1992), the timeline was the first strategy used to examine *how* and *where* they emerged from. Then, I carried out substantive coding, both on the individual texts as well as the aggregate compilation of materials.<sup>28</sup>

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<sup>28</sup> Later on, I elaborate in detail the specific CDA tools that I have applied in the coding phase.

I used *Atlas.ti* qualitative analysis software to code my materials as it helped ensuring a systematic analysis of representative instances of data (Seale and Silverman 1997, p. 380).<sup>29</sup> I initially approached the texts following an open coding strategy (Titcher *et al.* 2000, Corbin and Strauss 2008, p. 59), and identified those recurring themes related to the linkages between technology and public values, including common lexical terms (i.e. efficiency) as well as common empirical patterns that repeated across the corpus. As in the case of research studies inspired in grounded theory methodology, I went line by line and coded all the relevant texts from my corpus. While the initial coding was useful to familiarise myself with the evidence and main themes, I re-coded my materials (particularly, the key texts) using the list of public values that I presented in Chapter Two based on the work of Bozeman and Beck Jørgensen (2007) and Hood (1991). This made me redefine and adjust my coding accordingly, usually, by dropping some values from the list, and defining their meaning as I was interpreting the discourses (see later my sections on CDA tools). This re-coding strategy served to reflect on the categories of public values that would bring more order to my data. In terms of CDA, a further stage meant scrutinizing key texts in-depth while coming back to other data from the fieldwork (i.e. interviews) to reflect on the process of production, dissemination and consumption of discourses over time. In sum, the coding phase meant going back and forth between the theoretical ideas—public values, relational character of technology and CDA—and the empirical analysis to produce an elaborate understanding of the discursive (and material) features involved in the case. The coding phase also guided the incorporation of further data into the corpus, such as news from local media and follow-up interviews conducted in later stages.

A final stage consisted of writing up the findings and reflecting on the basis of the theoretical underpinnings of my research. All in all, the steps that I followed on my data analysis led to the identification of three complementary analytical instances that are presented in Chapters Five, Six and Seven respectively:

- (i) the construction of the narrative of the case, its historical, political and institutional context;

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<sup>29</sup> I include in the Appendix a screen shot of a sample coded material.

- (ii) the analysis of the dominant discourses on public values and technology over time and in a particular context;
- (iii) the broader discussion of the findings in light of theory.

In light of my data analysis strategy, Chapter Five presents *more* than a simple description of the case; in building the historical socioeconomic background of Mexico, I found myself better informed to understand and elucidate the most prominent discourses, and how they were produced. In addition, it was by writing Chapter Five that the Single Window initiative turned out to be about *producing* and *consuming* the context dynamically, instead of being just the *result of* a given context (i.e. Hayes and Westrup 2012, Salskov-Iversen *et al.* 2000, Chouliaraki and Fairclough 1999 on *recontextualisation*, Avgerou 2002, p. 10).

Reporting my findings on discourses (Chapter Six) has been extremely important in terms of the internal validity of the case as well as for theoretical reflection. While writing, I had to decide on the most important and prominent discourses and leave aside a great number of interesting but disparate details. The findings, thus, present the most prominent discourses, and the tensions and relations that I found between them that were significant to answer my research questions. This chapter draws heavily from the analysis of key text presented in table 6 earlier, as well as on interviewing material and related sources to make sense of the dynamics of the discursive features in the case. As I expressed earlier, CDA does not rely solely on texts—fieldwork material is crucial for an understanding of text *production*, *interpretation* and *consumption* in the case context.

Finally, while described as stages, the reader *should not* understand them as *linear*. As it is common in CDA, these stages are *reflexive* and involve an on-going process of going back and forth between empirical and theoretical concepts, which end when there is sufficient evidence to pull out a series of findings. The process of coding and re-coding and searching for meanings using CDA tools have played the most substantial part in reporting my findings and inspiring the discussion chapter (Chapter Seven). In sum, the richness of the data and the multiplicity of sources that I draw upon are vital for the reflexive process that a serious CDA effort requires. Overall, as in similar cases, analysing materials resulted in a complex interplay between observing perceived patterns

and theorizing, a research process that goes beyond the application of critical discourse analysis (Townley *et al.* 2003).

#### 4.3.2 CDA tools: selections of key texts, intertextuality and genre analysis

Scholars have noted that there are many versions of discourse analysis (see for example Phillips and Di Domenico 2009). One of the notable differences between them has to do with those approaches that include detailed analysis of text to those that pay little attention to it. Critical discourse analysis is grouped within the former, and it entails at least certain type of ‘textually oriented discourse analysis’ (Fairclough 2003).

My dissertation includes a textual, detailed analysis of texts related to the project I study in Mexico. While my aim is not to depict a detailed *linguistic* analysis of texts (not that it would even be possible to do that), I draw extensively on the guidelines exposed in Fairclough (2003).<sup>30</sup> Let me reiterate that the detailed textually oriented analysis was performed in several texts, though some of them were used in “more intensely”, and that is why I include a section clarifying so. In any case, the number of texts that I have included in the analysis is large in order to increase the reflexivity process that CDA entails (see my previous data collection table and Appendix I and II for further details). It is worth recalling that individual or isolated texts are rather useless to make sense of social reality in general and in discourse analysis in particular (Phillips *et al.* 2004, p. 636, Fairclough 2003).

An important rationale for selecting certain analytical tools among all the diverse analysis that CDA may enable relies on the *transdisciplinary* spirit of the approach (Fairclough 2010, p. 231, 2003, p. 6).<sup>31</sup> As I am interested in eliciting and discovering discourses on public values and technology, I shall draw upon certain linguistic features

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<sup>30</sup> Fairclough wrote this book for social science scholars that are not experts in linguistic analysis. As the author says (Fairclough 2003, p. 1), “I find that research students in Social Sciences often see the need to say more detailed things about their language data than they feel equipped to do”. His book has been particularly useful for guiding the textual oriented part of my discourse analysis.

<sup>31</sup> I have anticipated this idea in the elaboration on theory (Chapter Three), which is also important in methodological terms.

that are helpful for this purpose. This is the main reason why I include three sections below that explain in depth how I have worked on my analysis of text and discourses.

### **On the selection of specific government texts**

While a detailed textual analysis of the entire data corpus is far from being possible (see my later comments on the limits and scope of CDA), I selected a key text in the case to *anchor* my textually oriented analysis:

- The Presidential Decree that establishes the creation of the Mexican Single Window for Foreign Trade, published in January 2011.

This text is selected for three main reasons. The first one has to do with its *relevance*. The text of the Decree figures as a key moment of the case that is triggered within a particular history and context. The Presidential Decree has a particular functionality; it *establishes* the Single Window, and as such, it sets forth the conditions, particularities, policy agreements and even the obligations that the agencies (public bureaucracies) involved have to comply with.<sup>32</sup> In this respect, the text is particularly important in terms of its *textualagency*, that is, the power of specific texts to produce effects in organising (Cooren 2004, Hardy 2004). Presidential Decrees are well-known for setting up specific objectives and priorities in presidential regimes, therefore becoming extremely powerful to guide government action. The Decree is also relevant as a good proxy for mapping public values as well. As Bozeman suggests (2007, p. 15), a nation's more fundamental laws, the public speeches of national or subnational public officials as well as mission statements of public agencies provide excellent sources of public values.

A second reason relies on the *comprehensiveness* of the text. The text of the Decree, somehow "contains" other important texts of the project in it. As I shall demonstrate in the analysis chapter, the selected text is linked to other fundamental textual productions, such as Mexico's National Development Plans and previous laws and regulations, which

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<sup>32</sup> In legal terms, a Presidential Decree in Mexico is similar to the Executive Orders in the United States. Decrees in Mexico are issued by the head of the executive branch at some level of government; commonly, the Decrees are issued by the president, but they may also be issued by a head of Ministry or at state level by a state's governor. The text that I analyse has been issued by the President and endorsed by all Ministries.

make it a good basis for broader intertextual and interdiscursive analysis. This, in turn, reinforces the point of relevance: other fundamental laws and ideals on public values are included in the text.

A third and related reason has to do with its *temporality*. The text of the Decree represents a particular important moment in the lifecycle of the project. Anchoring the analysis in the moment that the Single Window is established helps to trace back the reasons of its production (i.e. where are the discourses coming from) as well as the ways in which these discourses have been consumed and materialised since then. The intertextual analysis, in turn, also helps to trace textual artifacts that were particularly useful for a retrospective analysis of the moments of the project. To gain order and structure in my analysis, I usually started in the text of the Decree, and systematically compared it to other key texts in the project, mainly:

- ‘SICEX: a successful case for administrating trade procedures’ (dated 1999): an internal document from the SE that describes the origins, main drivers and component of the platform that was launched in 1996 and won the national public administration prize in 1999;
- *Memoirs* of ‘Towards a paperless administration 2000-2006’: an internal, 450 pages-long document that covers the progress and evolution of SICEX and related ICT infrastructure for foreign trade procedures, its main drivers, logics and actions taken in relation to the project;
- *Terms of Reference*, International Public Tender of the Mexican Single Window for Foreign Trade: a public document that established the aims, objectives and types of services open to tender, issued by the *Servicio de Administracion Tributaria* (SAT) in May 2010;
- Mexico’s National Development Plans.

Let me summarise the idea of this section. The CDA tools that I have applied on my analysis and the way I proceeded with my coding entailed paying attention to certain semiotic structures and verbal features. The analysis I present, thus, is *not on a single text*; the text of the Decree is simply used as an anchoring point for the reasons I outlined above. And as an anchor, it brings in other important texts that I compare and analyse using linguistic tools. This is why the reader will find different sources of other texts and data (i.e. references to interviews and news articles) in the analysis chapter.

## **Intertextuality, assumptions and value assumptions**

Fairclough (2003, chap. 3) offers a number of linguistic tools that are applicable for different purposes when analysing texts. I mainly focused on *intertextual* analysis—how texts draw upon, incorporate and interact or dialogue with other texts. An obvious example of intertextuality is the use of quotations within a text. But quotations are rather explicit forms of intertextuality that ‘echo’ particular discourses. Besides their direct (i.e. quoted speech) or indirect (i.e. reported speech) presence of elements from other texts, intertextuality helps to identify those elements that are related in different ways, such as dialogued with, *assumed* or presupposed (Fairclough 2003, p. 39-40, also Parker 1992). It is precisely on the idea of assumptions that I shall be concentrating on, given my focus on eliciting discourses on public values and technology within the project.

Implicitness and *assumptions* are a pervasive property of texts that are especially important for critical discourse analysts, given their implications in building shared meaning or the capacity to exercise power (Fairclough 2003, p.55). Assumptions, as understood here, are divided into three categories: existential, propositional and *value assumptions*. I am particularly interested in the analytical tools to elicit value assumptions, those assumptions about what is good and desirable. Linguistic tools to identify value assumptions entail looking for certain verbs and textual triggers in the texts. For example, the verb ‘help’ within a sentence (i.e. information technologies can *help* develop productivity) assumes that developing productivity is desirable (Fairclough 2003, p. 56). Yet, value assumptions may not necessarily be triggered by such explicit cases (i.e. verbs connoting desirability), and one needs to look carefully for the meaning of the sentence.

In the case of the texts that I zoomed in, I draw on the idea of *family resemblances* of values (Rutgers 2008, pp. 106-7). This means that using linguistic tools from CDA, especially semantic relations between words, one can identify terms that, while different, denote similar values. As mentioned earlier, I started my coding following the preliminary inventory of public values of Beck Jørgensen and Bozeman (2007), complemented with the work of Hood (1991) and Hood and Jackson (1991). In CDA words, I used these lists to perform a lexical (vocabulary) analysis of public values and



technology (Fairclough 2003, p. 94). Following the linguistic tools, it turned out that the value assumptions were very explicit most of the times; when otherwise, I draw on the contextual data from fieldwork<sup>33</sup> as well as the micro-coding to identify possible alternative meanings of a term or phrase.<sup>34</sup> I have also looked at the *semantic relations* between words in a sentence. Identifying discourses meant also looking at the ways words relate in a sentence, its collocations, and relations of equivalence and difference (Fairclough 2003, pp. 123-4). In complementary fashion, I followed the three basic questions that Johnstone (2002, p. 8) suggests when doing discourse analysis: Why the text is the way it is, why it is not another way, and why there are particular words in a particular order. The first question—why the text is the way it is—is precisely the theme of my next section, that is, genre analysis.

### **Genre analysis and government texts**

An important and related analysis to intertextuality comes from analysing how language figures as a means of government action. This entails looking at the specific *genre* of texts. The definition of genre varies according disciplines and the approaches to study a particular phenomenon. Within discourse analysis, genre is defined in general terms as “a way of acting in its discourse aspect” (Fairclough 2003, p. 216). For example, public speeches, interviews or news article are all examples of different genres. Thus, if we accept that genres are the discursal aspect of ways of acting and interacting in social events (Fairclough 2003, p. 65), then a legal piece—such as an executive order or a Law—offers a particular way of using language as means of government action.<sup>35</sup>

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<sup>33</sup> The contextual data include, for example, the historical developments on economic liberalisation and political democratisation transition that I describe in the case chapter. As Fairclough suggests, one may argue that assumptions, and particularly value assumptions, are associated with ideology (2003, p.58). However, he warns that in order to produce such a claim, one need to go beyond the level of texts and show how a particular assumption is indeed taken for granted at societal level, or a certain actors' level. In other words, Fairclough (2003, p.59) asserts that “one cannot simply look at a text, identify assumptions, and decide in textual evidence *alone* which of them are ideological” (emphasis added).

<sup>34</sup> I refer here to the micro-analysis of texts that I have conducted following Corbin & Strauss (2008, p.59). See stage two of the general method of analysis.

<sup>35</sup> There are various aspects to look at in a text that are dependent upon genre, and these are: the structure of a text, the semantic relations between clauses and sentences, the type of clauses it contains, and the way other texts are incorporated in a text (intertextuality) (Fairclough 2003, p. 67). I draw on these features to understand the meanings that the texts convey to unfold the analysis chapter.

Dealing with a particular genre means that we may expect to find certain common attributes within a text. For example, the use of rhetoric and promotional claims may be well expected when interacting with government texts. The language of politics offers an interesting comparison; from a language perspective, politics is better match with markers of disagreement, dissent and polemic instead of consensus (Fairclough 2000, p. 11, see also Hoggett 2006). The reason why this relation is important is because government and politics are closely related (Fairclough 2000), but they are not the same thing. Governments, as the machines that execute policies in democratic states, depend critically on achieving a sufficient measure of consent—whether mirroring broader social realities or not.

The implications from the point of view of the genre of texts are important, since I am studying government texts and not political discourses. Thus, while it should not be surprising that a text like the Presidential Decree speaks a language of consent, it is possible to study further issues from its *monological* tone. In particular, I study the *modality* of the text, that is, the particular markers of a clause or sentence that reflect what people commit themselves to when they make statements, declarations, make demands or offers (Fairclough 2003, p. 165). In simple terms, the *modality* of a phrase refers to the commitments, attitudes and stances that a speaker or writer makes through certain language choices. For instance, adverbs such as ‘certainly’ or ‘necessarily’ are typical examples of modalisation markers that indicate high levels of commitments within a text. In the analysis chapter (Chapter Six), I draw particularly on these features to assess the level of commitment from those who are supporting the text, and what can be said from the perspective of different voices in the discourse. Studying the modality of a sentence or clause is helpful to specify what types of person or thing are spoken about, and what these subjects are capable of saying in the discourse (Parker 1992).

In addition, looking at the structure and class of genre is useful, particularly given its institutionalised aspect of certain government texts. For example, one should expect to find a clear and rather generic structure in a Presidential Decree or executive order as it is a more or less standardised type of text. Given my interest in elucidating relations on assumptions and ideologies, in some cases (and particularly for the Decree and the National Development Plans), I paid attention to the way the *argument* was constructed.

To do so, I looked for the three main elements in the texts: grounds, warrants and claim (Fairclough 2003, pp. 81-83 based on Toulmin 1958). The grounds are those premises or facts that form the foundation for the argument, while the warrants are what justify a movement from the ground to the claim. As in the case of value assumptions, some elements in a given argument may be very explicit while others may be hidden or assumed. The genre analysis in this way was particularly useful when applied to well-defined texts (i.e. Decree and National Development Plans) because it helped to unpack the assumptions and ideologies that are vested in texts, in a complementary fashion to the other linguistic tools that I have explained in the previous section.

### **4.3.3 A note on translation**

Given that the use of language is particularly important in my research, I have translated the excerpts used in the dissertation trying to maintain the integrity of the text (whether spoken or written) and the facilitation of the original text. Translation theory suggests that the translator has to develop an understanding of the language, its semiotic features and context as well as why the text was produced the way it was (Bhatia 1997). In the particular case of the legal piece that I use as my CDA anchoring point (the Presidential Decree), I checked its translation with bilingual lawyers in the policy field to avoid confusion to the reader. Whilst in order to avoid a 'double' interpretation of texts under scrutiny the overall analysis was conducted in Spanish (its original language), the reader may find occasionally some words in its original when relevant for interpretation. Finally, all fieldwork materials were recorded, kept and analysed in its original language (Spanish), and only translated when necessary for quotation. While some nuances may be lost in reporting findings, the richness of the case in conjunction with CDA tools allowed me to deal with specific interpretation issues by constantly comparing many examples.

#### 4.4 On the relevance, quality and limits of my research design

##### 4.4.1 On case study quality

A common misunderstanding (or critic) to case study is what Flyvbjerg defines as “conventional wisdom”; that is, that one cannot generalize from single cases, that cases are subjective, biased or arbitrary, or that the case study is most useful for generating hypothesis rather than testing them (Flyvbjerg 2006). Many scholars have demonstrated that this rather conventional wisdom is wrong if not misleading (Ragin and Becker 1992, Barzelay 1993, Klein and Myers 1999, Flyvbjerg 2001, 2006, Lee and Baskerville 2003, Sarker and Lee 2003, Yin 2003, Eisenhardt and Graebner 2007, Myers 2009), and case study research has now become a well-established and valuable method for research inquiry in social sciences in general and in the management field in particular.

Of course, this does not mean that case study research should not be evaluated. It means that at least it should be evaluated *accordingly*. Yet, there is no single or universal approach to evaluate rigour in case study research and scholars have proceeded in different ways (for a review on the matter, see Gibbert and Ruigrok 2010). Myers (2009, pp. 83-4) offers six criteria that I complement with the ways I have addressed them in the table below (see also Yin 2003, pp. 160-165 on what makes an exemplary case study).

<b>The case study</b>	<b>How it has been addressed in my research work</b>
must be interesting:	the case tells a new story that is of national importance for Mexico; however, its judgment is done by the audience (scholars, examiners, supervisors)
must display sufficient evidence	this is covered by my multiple data collection methods, the many quotations and examples from the texts I have analysed, also, the appendixes
should be ‘complete’	this means that the evidence should suffice to support or disprove particular theoretical points; this is covered extensively on the evidence I provide in Chapters Six and Seven
must consider alternative perspectives	this is at the core of my CDA approach; I elaborated already on the reflexivity of the approach; I provide further details in the section below
should be written in an engaging manner	I have been very enthusiastic in my writing, but as in point one, this is judged by the scholarly audience
should contribute to knowledge	this is addressed in my conclusions (contributions to knowledge)

**Table 7: Case study quality checks from according to Myers (2009)**

In addition, to ensure quality and the reliability of the story, I shared and reviewed Chapter Five with key stakeholders of the project who provided feedback and overall approval of the case. As for the study quality, I consider that the multiple sources of data that I count on, the systematic and comprehensive way that I have collected, kept and analysed my data as well as the particular quality checks of CDA (see below) are the main strengths of my research design.

#### **4.4.2 Reflecting on CDA**

CDA has its limitations and I am not claiming otherwise. One could argue that textual analysis is inevitably selective (Fairclough 2003) and incomplete. But the fact that CDA embraces heterogeneity and the possibility of multiple interpretations of reality is not just a property of this method but an intrinsic feature of interpretive research (i.e. Walsham 1995, 2006). Van Dijk asserts (2001, p. 99):

in any practical sense there is no such thing as a ‘complete’ discourse analysis: a ‘full’ analysis of a short passage might take months and fill hundreds of pages. Complete discourse analysis of a large corpus of text or talk, is therefore totally out of the question.

The point that I want to make is that, whilst unpacking *all* potential intertextual and interdiscursive aspects of a particular text is an impossible task (Keenoy and Oswick 2004, p. 140), it would also prove useless: the value of critical discourse analysis rely on illuminating a particular inquiry that is defined by the researcher. This is to say that any formal analysis of texts is not theory-free (Chouliaraki and Fairclough 1999, p. 7). The analyst’s theoretical preoccupations define what data is selected and how it is perceived; in other words, the analytical categories that emerge out of the selected texts are defined by the research questions and the research focus (theoretical preoccupations) of a particular project. In the case of my research, my theoretical preoccupations have led me to draw on those linguistic features that could help elicit the linkages between public values and technology within the case.

Methodological concerns can be addressed following Leitch and Palmer (2010) suggestions and protocols about CDA. Based on their concerns about the confusing

and unarticulated ways that CDA has been applied in organisational and management studies, the authors suggest that a systematic and ‘protocol-based’ method should be followed.

The next table presents Leith and Palmer’s nine ‘protocols’ and the ways I have addressed them in my research. They protocols are aimed to cover three methodological decisions in CDA: (i) the definitions, CDA traditions and notions on ontology carried out in the research; (ii) the implications of data selection in terms of data boundaries, social conditioning and multiple sources of data; (iii) the ways the data analysis is conducted, how interpretations are made, and the role of the researcher in the production of the findings. It is important to mention that these protocols served as sort of validity check done *a posteriori*, rather than as a guide to my research design. I do so in part because of practical reasons: I have come across them at a quite late stage of my research work (2011). But more importantly, I share the alternative view that Chouliaraki and Fairclough (2010) expose in their answer to the authors, in which they stress that the inherent contextual and contingent character of CDA and its theoretical versatility are their biggest strengths. In any case, I found them useful as a way to reflect on my own elaboration of CDA. Their nine protocols serve to reflect on the overall methodological (as well as theoretical) conceptions that I have used on my dissertation.

Methodological decision	Key issue	Protocol	How it has been addressed in my research work
1. Concept definitions	Conceptual	<i>Protocol 1.1</i> Define your key terms, including discourse, text, and context	Addressed explicitly in Chapter Three
	Epistemology	<i>Protocol 1.2</i> Explain which CDA tradition(s) your definitions draw upon and the implications of this for your subsequent analysis	Addressed explicitly in this chapter and in Chapter Three; the CDA approach I follow is based on the work of Fairclough and colleagues and as such, it entailed specific theoretical and methodological choices addressed in those chapters
	Ontology	<i>Protocol 1.3</i> Either consistently present context as itself enacted or, if you choose not to do this, explain theoretically your rationale, and the implications for your analysis and conclusions	<i>Not applicable</i> because of my theoretical choices: “Context here [in CDA] is not conceptualized as a distinct and separable dimension of CDA epistemology (...) but as an analytical construct that emerges within specific research questions” (Chouliaraki and Fairclough 2010, p. 1215)
2. Data selection	Social significance	<i>Protocol 2.1</i> Identify how the wider social and political issues underpinning your research focus influenced your data choices	All these choices have been explicitly explained in sections 4.2, 4.3 and Appendix I. In respect to Protocol 2.2, my note on protocol 1.3 also applies.
	Boundary	<i>Protocol 2.2</i> Outline the criteria you used in your research to establish which data was associated with text and which data was associated with context	
	Multiplicity	<i>Protocol 2.3</i> Outline how your choice and availability of data about context both illuminate aspects of your research question(s) and limit your conclusions by excluding other possible interpretations	
3. Data analysis	Data inferences	<i>Protocol 3.1</i> Outline which aspects of ‘what you have found’ are based on data, which parts of your analysis are based on extrapolations and inferences, and the basis for these extrapolations and inferences	This is extensively addressed on this chapter, in the data analysis section, but also, in chapter 6 and 7, where I make use of the evidence and suggest interpretations accordingly.
	Complexity	<i>Protocol 3.2</i> Explain which aspects of textual and contextual knowledge are likely to have been lost through the data reduction techniques you used to ‘tell the story’, and the implications for your conclusions	I have addressed this partly in this section of the chapter, and more broadly in my conclusions under the section ‘limitations’ of the study.
	Reflexivity	<i>Protocol 3.3</i> Outline your role as researcher in the production and analysis of data related to text and context	I have made transparent, as much as possible, the method of analysis (earlier in this chapter) as well as in the section of case selection.

**Table 8: Methodological rigour according to Leitch and Palmer (2010) protocols for CDA.**  
(Based on Leitch and Palmer 2010, Table II, pp. 1205-6).

#### 4.5 **Conclusions**

This chapter has covered my methodological assumptions and the devices I have used to conduct my research. I started with the ideas on critical realisms that provide foundations for my theoretical framework as well as the CDA tradition that I have chosen. Sections 4.2 and 4.3 elaborated extensively on the significance of my fieldwork as well as the reflexive data analysis that my work entailed. I want to add another reflection on my data analysis. In line with the critical theory spirit, CDA does not offer a pre-packaged step-by-step method to follow. Working with the data entailed a reflexive process of going back and forth between the theoretical ideas and the empirical analysis that ultimately led to my findings and contributions. Therefore, conducting CDA is never straightforward; it challenges the researcher to employ creativity and craftsmanship (Phillips *et al.* 2008, p. 786).

All in all, instead of selecting and sticking to one research paradigm, my research journey meant to use different theoretical instances and methods to delineate and illustrate my own research work, in a *coherent* way (Crotty 1998, p. 216). I turn attention now into the details of the longitudinal case.



## 5 Chapter Five: The Research Site. Building the Single Window for Foreign Trade in Mexico

### Part 1: Mexico's economic and political context

#### 5.1 Mexico's key facts

The United Mexican States, better known as Mexico, certainly stands out in Latin America for various reasons. Birthplace for Mayans and Aztecs, Mexico exhibits a rather complex set of cultural traditions that intertwine across different levels of its economy and society. Mexico is the 15<sup>th</sup> biggest territorial country, the 11<sup>th</sup> most populated in the world, and accounts for 112 million of inhabitants according to the Mexican national Census in 2010.

Politically, Mexico is a republican and representative state, and follows a presidential system with a strong bicameral Congress. Presidential administrations are six-year long and re-election is not possible. As in other presidential systems, the President is the head of the country and is the one that appoints the Cabinet of Ministers.<sup>36</sup> Mexico has a federal system with 31 states and a federal district, each divided into municipalities. Although it is federally constituted, central government has an important and predominant role both, in politics, economy and social aspects of the country life.

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<sup>36</sup> This is particularly an important difference to parliamentary systems (e.g. the Westminster system), where Cabinet ministers are appointed from among sitting members of the legislature who, while serving the Cabinet, remain members of the parliament.



**Figure 5: Map of Mexico**  
 Courtesy of the University of Texas Libraries, University of Texas at Austin

For most of the 20th century, Mexico's political and national life was dominated by a single ruling party -*Partido Revolucionario Institucional* (PRI)-, which remained in power for over 70 years, until the year 2000 when an opposition party (*Partido de Acción Nacional*, PAN) won the presidential elections. The same party, PAN, secured another 6 year-term in power, after winning a controversial election in 2006. Despite PRI losing the 2000 and 2006 presidential elections, the party still holds a big political power in Mexico (Panizza and Philip 2005, Pardo 2009). In July 2012, PRI won the presidential elections and will come back to power after 12 years.

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<b>Formal Name</b>	United Mexican States
<b>Population</b>	112.336.538 inhabitants (2010 Census; 11 <sup>th</sup> in the world)
<b>Land Area</b>	1.964.375 sq km (15 <sup>th</sup> in the world)
<b>Major Cities</b>	Mexico City, Guadalajara, Monterrey, Puebla, Veracruz
<b>Geography</b>	Very diverse; tropical, subtropical, desert, mountains; high plateaus, 9,330 km of coastline
<b>Religion</b>	Mostly Catholic
<b>Language</b>	Spanish is the official; there are more than 60 indigenous languages also spoken mainly Náhuatl (1.2m speakers), Maya (714,000), Mixtec (387,000) and Zapotec (403,000)
<b>Government</b>	Federal, 31 states and the Federal District (Mexico City) Constitutional republican state (executive, legislative, judicial branches) Presidential system, with a heavy Congress (Bicameral, proportional representation)  Current President: Felipe Calderón (PAN-right wing) 2006-2012

#### **Main Political Parties**

Partido Acción Nacional (**PAN**), right-wing, in power since 2000; Partido Revolucionario Institucional (**PRI**), center-left party, in power from 1929 (foundation) to 2000; Partido de la Revolución Democrática (**PRD**), a left-wing party (governs Mexico City)

#### **Main socio-economic indicators (2011)**

Total GDP (USD, nominal)	1.041 trillion (13 <sup>th</sup> in the world)
GDP per capita (USD, nominal)	9.489 (58 <sup>th</sup> in the world)
Total trade (USD, nominal)	600 trillion (10 <sup>th</sup> in the world; 1 <sup>st</sup> Latin America)
Gini Coeficient (2008)	0,516 (high inequality)
Human Development Index	0.750 (56 <sup>th</sup> in the world)
Trade and Development Index	750 (49 <sup>th</sup> in the world)

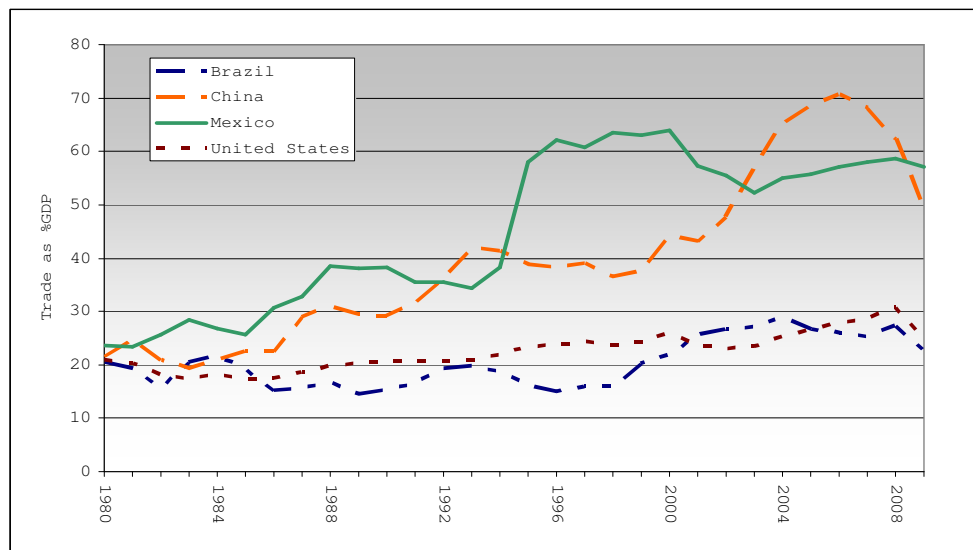
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**Table 9:** Mexico key facts

Source: INEGI, World Bank, IMF, The Economist Intelligent Unit.

In economic terms, Mexico occupies the 13<sup>th</sup> position among the largest economies in the world, and the second biggest economy in Latin America after Brazil. Mexico is one of the major exporters and importers in the world. Considering the classification of the International Monetary Fund, Mexico is the third major merchant of emerging and developing economies, slightly after Russia, which gained the second place only few years ago while China holds the first place. When compared to other countries, such as

China, Brazil, or the USA, Mexico's international trade is undoubtedly key for its economy, as it represents almost 60% of the total GDP (see figure 6).<sup>37</sup>



**Figure 6: Mexico's trade as % of GDP in comparison to other economies**  
 Source: World Bank, World Development Indicators 2011

Mexico faces important challenges today. Notably, the war against drug cartels, which has claimed more than 40,000 lives since 2006, has been an increasing concern given its brutality and unprecedented related violence. In addition, the recent stagnation of oil production and the impact of the USA recession have increased the existent social and economic pressures within a socially uneven country. Given the fact that Mexico faces critical demands related to economic growth, income distribution and social policies, gains from international trade are considered key for improving the country's welfare. Therefore, any potential welfare gains from trade are not trivial for an open economy like Mexico.

This brief introduction of Mexico's key facts provides an initial idea of the context in which the case takes place. The case focuses on the use of networked technologies to build a digital Single Window for Foreign Trade regulations (hereafter Single Window).<sup>38</sup> The case constitutes an enormous back-office integration effort—still on-going—

<sup>37</sup> Data for the year 2010; based on a nominal GDP list of countries. Source: International Monetary Fund, World Economic Outlook Database, April 2011: Nominal GDP list of countries.

<sup>38</sup> In Spanish is known as "*Ventanilla Única de Comercio Exterior Mexicana*".

intended to support a broader process of facilitation of international trade and based on previous efforts within the Mexican Ministry of the Economy.<sup>39</sup> It develops within a rich story of previous leading innovations within the Ministry and as part of broader administrative modernisation reforms in the country.

This chapter presents the details of the case under study, and elaborates the contextual features in which it is grounded. In terms of the latter, it provides detailed accounts of Mexico's broader processes of modernisation in two different but complementary historical aspects: the economic transformations with an emphasis on market-orientation and trade policy, and the process of democratisation and modernisation of the public administration. As explained in the methodology section, the current chapter draws heavily on data gathered during the fieldwork as well as historical accounts and research conducted in the area of modernisation reforms in Mexico. The chapter is organized as follows. It elaborates on the contextual factors of Mexico's reform (economic liberalisation and democratisation and reforms of bureaucracy), paying particular attention to salient features of the reforms during the last 30 years. The narrative of the case—the Single Window—follows.

## 5.2 **The economic and political context: Mexico from 1982 to 2010**

As Kirby (2009) suggests for Latin American countries, debates on the transformation of Mexico have followed mainly two lines: one regarding its democratization in relation to the 70 years in power of the Institutional Revolutionary Party (PRI), and a second one on institutional reforms and reformulation of economic and social policies. These are somehow inseparable when portraying the situation of Mexico's political economy, and the reader may not see them as decoupled from each other. The next two sections present the historical background and processes of reform in two areas: the Mexican public administration (bureaucratic context) and the economic transformations. Given the time covered in this dissertation, my main focus will be in elaborating the most salient features of both strands since the 80s and particularly, within the period in which the case under study is deployed (1995-2012).

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<sup>39</sup> In Mexico ministries are referred to as secretariats (in Spanish, "*Secretarías*"). This dissertation adopts the word Ministry to all Mexican Secretariats in order to avoid confusion regarding its role within the public administration structure.

### 5.2.1 International trade, openness to trade and economic reforms in Mexico

The unavoidable starting point for the last 30 years of Mexico's economic history goes back to 1982, a year when the country faced a critical debt crisis. The crisis meant the abandonment of Mexico's development model based on state-led industrialisation, import substitution and universal welfare provision.<sup>40</sup> From 1982 —better known as the episode that initiated the “lost decade” in Latin America (*“la década perdida”*)—a process of radical modernisation reforms started and later reinforced and accelerated under the following presidential administrations. The main components of the reforms included a clear shift towards an opening to trade and a promotion of foreign investment as an essential complement to trade, changes in the industrial policy, the privatization of public enterprises, the deregulation of domestic economic activities, and the shrinking of public expenditure and the state's intervention in the economy (Kehoe 1995, Moreno-Brid and Ros Bosch 2009, chap. 7, Moreno-Brid *et al.* 2009). In 1985, the period of multilateral liberalisation formally began when Mexico entered the General Agreement on Tariffs and Trade (GATT).<sup>41</sup> In brief, soon after 1982 Mexico put an end to its welfare state model and closed economy, and embarked on a long-term process of drastic economic liberalisation. In this sense, Mexico is said to have embraced the ideas crystallised in the “Washington Consensus” programme of economic reform, along the line of the broader NPM agenda.<sup>42</sup>

Key episodes during the 1990s confirmed the focus on economic, trade and financial liberalisation. A new period of bilateral liberalisation of trade started in 1994 when Mexico, the United States and Canada launched the North America Free Trade Agreement (NAFTA), the largest free trade agreement in the world. NAFTA came into force in January 1994, which meant a progressive reduction or elimination of tariff and non-tariff barriers to intra-regional trade. Later in 1994, Mexico joined the OECD,

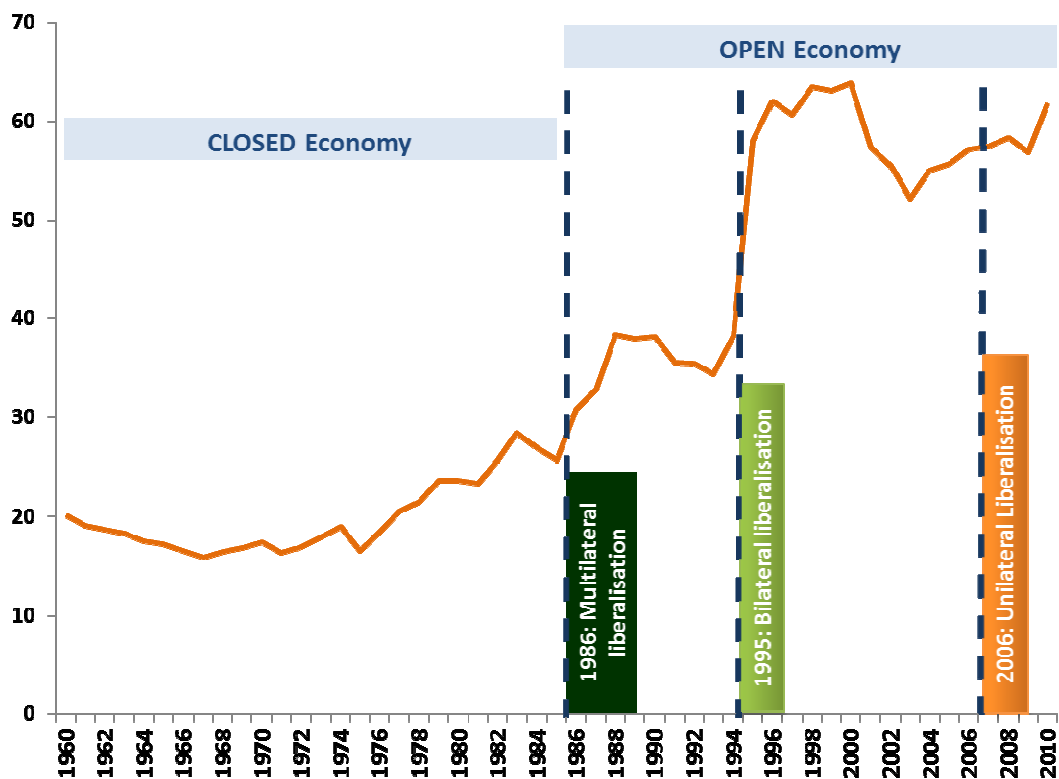
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<sup>40</sup> For a detailed background of Mexico's economic development strategy from 1950-1981 see Moreno-Brid *et al.* (2009), pages 156-7.

<sup>41</sup> The General Agreement on Tariffs and Trade (GATT) is a multilateral agreement regulating international trade; it was signed in 1947 and replaced by the World Trade Organisation (WTO) in 1995. An updated General Agreement is now the WTO agreement that governs trade in goods.

<sup>42</sup> In terms of trade and globalisation, the “Washington Consensus” promoted a commitment with intense trade liberalisation (promotion of exports and an emphasis on elimination of trade restrictions) and a strong focus on promoting inward [foreign direct investment](#).

becoming the first (and until 2010, the only) Latin American country in the organisation.<sup>43</sup> In 1993 Mexico was admitted as full member of the Asia-Pacific Economic Co-operation (APEC) forum, and in 1995 became full member of the newly created World Trade Organisation (WTO). Since then, and even when less significant in comparison to NAFTA, Mexico continued its policy of negotiating free-trade agreements with many countries around the world. This is why this period is best regarded as bilateral liberalisation (see figure below).



**Figure 7: Phases of trade liberalisation in Mexico**

Y axis: Trade as % of Mexico's GDP. Source: WDI, and Mexican Ministry of the Economy.

From 2006, Mexico strengthened its efforts to achieve more openness to trade via trade facilitation, best described as unilateral liberalisation. In 2008, throughout the Ministry of the Economy, the government has set forth a strong trade liberalisation agenda, known as the Programme for Trade Facilitation. The Programme comprises of three policy pillars: (i) tariff simplification and the revision of other measures affecting trade; (ii) customs reform and the simplification of trade regulations; (iii) fostering its institutional environment by strengthening the Foreign Trade Commission. As a result

<sup>43</sup> Chile joined the OECD in February of 2010.

of the comprehensive liberalisation agenda that started in 1980s, by 2011, excluding phyto-sanitary regulations<sup>44</sup>, Mexico maintains very few trade restrictions and holds the biggest number of free-trade agreements with other parties in the world.<sup>45</sup>

Reforms in trade were accompanied with a series of transformation in the domestic economy too. In terms of industrial policy, the first wave of the modernisation reforms meant eliminating all sectoral development programmes and ending targeted credit and tax subsidies (Moreno-Brid *et al.* 2009). From the mid 1990s and the following presidential terms, there were changes in industrial policy that mainly targeted productive chains in the Mexican export-oriented manufacturing sector by allowing for some sectoral-specific programmes, as those the Ministry of the Economy administrates.

The financial sector has also experienced complex cycles and reforms. After progress in economic growth and financial stability, the Mexico faced another big financial crisis in 1994-1995 but it recovered quicker than in the 1980s. Further economic measures, together with an increase of traded goods particularly as part of NAFTA, Mexico recovered the main economic indicators by the end of the 1990s. From 1996 to 2000, the country average growth rate was 5.4 per year, but then sluggish leaving open questions in terms of the impacts of reforms and specially, from openness to trade (Palma 2003). In the public finance area, neo-liberal reforms in conjunction with NAFTA resulted in sound macroeconomic fundamentals towards 2010, as Mexico's reached a good fiscal performance —low domestic inflation and a boom in participation in global markets (Moreno-Brid *et al.* 2005, 2009). Fiscal policy controls, however, meant a commitment on shrinking public investments and public expenditure in general.

Overall, economic reforms have not been modest in Mexico. Perhaps the most salient achievements of the period are the strong and sound macroeconomic indicators, the

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<sup>44</sup> “Phyto-sanitary regulations” are government rules that prohibit or restrict the importation or marketing of certain agricultural products so as to prevent the introduction of pathogens that these products may be carrying.

<sup>45</sup> The legal foundation of trade policy in Mexico relies on Article 131 of Mexican Constitution, and article 4 of the Foreign Trade Law, which authorizes the federal government to control flows of imports and exports, and to conduct international trade negotiations.



general economic stability, low inflation and boom in the participation of the country in the global markets (see for example Moreno-Brid *et al.* 2009). Yet, there is currently a debate on why Mexico economic growth since 1985 has been so modest at best—if not disappointing. When comparing Mexico to other countries in Latin America (particularly with Chile, a country that had implemented similar liberalisation policies), Mexico's growth rate lags behind. Let alone the modest rates of growth, Mexico's economic neo-liberal reform agenda has been highly unbalanced in terms of social policy, wealth and income distribution (Lustig 2001, and Esquivel and Rodríguez-López 2003 on wage inequalities, Ramirez 2003, Moreno-Brid and Ros Bosch 2009, Moreno-Brid *et al.* 2009). This is reflected in Mexico's position in the world rankings of development indicators: whilst the whole economy positions among the 15 biggest countries and traders in the world, Mexico ranks number 53 in the United Nations human development index, number 58 in terms of GDP per capita, and number 46 in the income distribution index.

Research in international economics suggest that the explanations for Mexico's stagnation and its inability to catch up with job creation and income distribution concentrate on factors such as an inefficient domestic financial sector, rigidities in the labour market and lack of contract enforcement, and a high dependence on the USA market and oil generated income (Lustig 2001, Tornell *et al.* 2003, Moreno-Brid *et al.* 2009). As Palma puts it (2003, p. 57): "Mexico may have been particularly successful in switching its 'engine of growth' towards the export sector, but to date [2003] it seems totally at a loss as to how best to harness the power of this new engine." Kehoe and Ruhl (2010, p. 1024) expand these findings, and suggest that further reforms are needed to eliminate the barriers to growth, and they should concentrate on increasing the efficiency of the financial system, overcoming the general lack of rule of law, and in eliminating rigidities in the labour market.

These preoccupations on Mexico's stagnation and barriers to economic growth explain why measures to reduce the frictions in foreign trade—germane to our case study—have accelerated during the hole period, and in particular, since the Programme for Trade Facilitation launched in 2008. The Programme recognizes that trade liberalisation ought to be accompanied by other measures to boost the country's competitiveness. In other words, well known measures of trade liberalisation such as tariff reduction are not

enough to maximize gains from trade if they are not backed with institutional change. The Single Window for foreign trade, as I will describe more in detail shortly, is precisely one of the institutional changes that Mexico has been pushing forward.

To sum up, given Mexico's policy orientations, the role of foreign trade is highly important for the country's economic activity and its social and economic development. Let me now turn attention to the reforms of the Mexican bureaucracy and the rule of law, as I consider it the other side of the coin.

### **5.2.2 The public sector in Mexico: democratisation and changes in the bureaucracy since 1982**

As in the economic arena, the crisis of 1982 meant an end to the public resources that Mexico's large national bureaucracy enjoyed for many years (Pardo 2009, Panizza and Philip 2005). The fact that the PRI dominated the political arena –and hence, party political contestation was marginal– made the bureaucratic apparatus a political one. From 1940 and at least until the 1980s, the Mexican public sector was best regarded as a traditional system of patrimonial, clientelist system in which each president in turn controlled the public bureaucracy (Gow and Pardo 1999, Arellano-Gault 2000, Arellano-Gault and Guerrero 2003). For example, besides appointing the upper level bureaucrats, the politicians could appoint around 60,000 positions in the mid-level, federal public administration (Panizza and Philip 2005). Hence, the crisis of 1982 challenged the patrimonial Mexican bureaucracy, since the neo-liberal economic transformations translated in a concomitant downsizing programme for the public sector. Gradual modernisation reforms were started, partly as a consequence of the economic, market-driven reforms (Gow and Pardo 1999, p. 541) but also as part of a process of political democratization (Cejudo 2008).

Since 1982, there were several programmes to reform public administration procedures, structures and work practices aiming at reducing red tape and public costs (downsizing) as well as at achieving a more professionalized public sector (democratisation). The next table summarizes the most relevant efforts at the federal level.

1982-1988	1988-1994	1994-2000	2000-2006	2006-2012
<ul style="list-style-type: none"> <li>• Programme for administrative decentralisation (1983-1988)</li> <li>• Contraloria (1983)</li> </ul>	<ul style="list-style-type: none"> <li>• Programme for administrative simplification (1989-1994)</li> </ul>	<ul style="list-style-type: none"> <li>• Modernisation Programme for the Public Administration( <i>PROMAP</i>) (1995-2000)</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic Model for Government Innovation(2001-2006)</li> <li>• Good Government Agenda (2002-2006)</li> <li>• Programme for transparency and against corruption (2001-2006)</li> <li>• Civil Service Career Law (2003)</li> </ul>	<ul style="list-style-type: none"> <li>• Special Programme for Management Improvement (2008-2012)</li> </ul>

**Table 10: Mexico’s main modernisation reforms programmes by presidential administrations**

The administrative reforms that were attempted before 2000 are seen as generally timid by scholars, with some exceptions. From 1980s to 1995, the programmes focused on administrative decentralization. These attempts included a series of legal changes that granted more financial resources and a greater administrative role to state and municipal authorities, aimed at giving greater autonomy for local and state governments, as well as helping with the downsizing effort (Gow and Pardo 1999, Pardo 2009). Despite their ambitious intentions, the programmes did not produce vast results, mainly because of the persistent inertia of public administration behaviour and the failure to link it to a longer-term project at best (Sanchez-Gonzalez 2009), or the absence of any real political importance granted to the modernisation efforts (Pardo 2009, p. 175)<sup>46</sup>.

The “Modernisation Programme for the Public Administration” (in short, *PROMAP*) launched in 1995 proved a higher degree of compromise with reformist initiatives. *PROMAP* was regarded as an important policy to improve the efficiency and effectiveness of public services whilst fighting the opacity and corruption in the Mexican public administration (Pardo 2009).<sup>47</sup> By means of introducing common managerial practices from the private sector, such as strategic planning, business process reengineering and total quality programs (TQM), the main goal of *PROMAP* was to transform public servants’ attitudes and behaviours throughout the whole public sector

<sup>46</sup> Pardo (2009, p. 175) criticises the rhetorical efforts of President Salinas (1989-1995), and states that “in accordance to previous governments, the Salinas Administration granted no political importance to the modernisation of the public administration”. The author elaborates on how several measures that the government undertook (i.e. administrative decentralisation) were mainly targeting political negotiations and not to more responsive, professional public administration (Pardo 2009, p. 195-6).

<sup>47</sup> See also Government of Zedillo’s electronic archive, available at: [http://zedillo.presidencia.gob.mx/welcome/PAGES/library/od\\_publicadmon.html](http://zedillo.presidencia.gob.mx/welcome/PAGES/library/od_publicadmon.html) Accessed 22 March 2010.

into a more effective, efficient and responsive government. The PROMAP, then, represented the first ‘infused’ ideas and jargon that were at centre of the NPM, such as the managerial focus, the emphasis on strategic planning and quality (Cejudo 2008, p. 116). While some scholars suggest that the programme did achieve some results, such as a shifting from old (and durable) forms of administrative procedures into more modern and less opaque practices (Sanchez-Gonzalez 2009, p. 90), others remain more sceptical (Cejudo 2008, Pardo 2009).

In 2000, a new political scenario set the basis for new reform strategies. The year represents a milestone for the democratisation process that Mexico had started at least one decade earlier. With the National Action Party (*Partido de Acción Nacional*, PAN) winning the elections, the process of administrative (political and bureaucratic) reforms took momentum. For the new president, Vicente Fox, it was crucial to run an administrative apparatus that was clearly different from the one under the PRI administration (Panizza and Philip 2005, p.687). If the previous administration was successful in bringing private sector managerial practices into public administration, the government of President Fox went even beyond by giving an explicit managerial spirit to some of the reforms. Both, the “Good Government Agenda” and the “Strategic Innovation Plan” were salient examples of how the NPM visions reached Mexico fully, even though there was a ‘Mexican way’ to incorporate the features of the NPM inspired reforms (Cejudo 2008).

Since 2000, Mexico consolidated a series of important transformations towards a more transparent and Weberian-type of state bureaucracy. The passage of the Transparency Law in 2001 and the Civil Service Career Law in 2003, amid their imperfections and critics, constitute landmarks in the state reforms (for detailed debates on transparency see Lopéz Ayllón and Arellano-Gault 2006, Bookman and Guerrero 2009, Michener 2010, and for civil service Panizza and Philip 2005, Cejudo 2008, Arellano-Gault and Guerrero 2003).<sup>48</sup>

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<sup>48</sup> For a review of the political history behind the passage of the Federal Transparency and Access to Government Information Law (*Ley Federal de Transparencia y Acceso a la Información Gubernamental*) in 2002, see Bookman and Guerrero 2009. For a detailed description of the events and the role media played in the history of the Law, see Michener 2010, chapter 2.

The *Good Government Agenda* was also part of the reformist discourses. It encompassed six main strategies: a government that costs less; a quality government; a professional government; an e-government; a government with improved regulation; and an honest and transparent government. The *Agenda* became particularly important as a driver for e-government initiatives, as its fourth pillar (the e-government one) was explicitly mentioned as both supporter and facilitator to all the other five strategies (Presidencia de la República, México 2002).

In 2006 the PAN won the national elections for the second time, with Felipe Calderón as the President.<sup>49</sup> In 2007, a new “Programme for Management Improvement 2007-2012” (PMI) appeared, just after an ‘Austerity Decree’ was put in place to help controlling fiscal numbers stable. The PMI (currently ongoing) set forth four main lines of action: to provide better public services, to increment public sector productivity, to reduce costs by streamlining resources efficiently and optimally and to focus on results and performance indicators. Sceptical scholars pointed out that the PMI is limited compared to the needs of the Mexican public administration, and somehow responded to guidelines developed by international bodies such as the OECD and the CLAD (Sánchez-González 2009). Despite the debate, the programme was discursively ambitious: to obtain a better and responsive government with a financially tough structure, as the pressures on keeping an austere budget were not abandoned.

Overall, it is not surprising that Mexico’s modernisation reforms—in which many other Latin American countries were also immersed— happened at the same time when the USA and other western countries were pursuing market-oriented reforms (NPM). A word on the role of international organisations should be regarded here. Whilst it has been recognized that the most active reformers in Mexico were domestic policy scholars and political activists (Panizza and Philip 2005, p. 685, Cejudo 2008, Salskov-Iversen *et al.* 2000), international agencies played an important role as reform ‘promoters’. For example, the World Bank’s ‘good governance’ agenda was present in several elements of PROMAP. The fact that Mexico joined the OECD in 1995 also put the country in a more ‘exposed’ or even participatory position within the current trends of administration reforms. Yet, to claim that Mexico’s reforms are *just* a consequence of

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<sup>49</sup> Mexican Law states that presidential terms are not renewable (the same applies to state governors and municipal presidents).

international organisation's agenda would be misleading or over simplistic (Salskov-Iversen *et al.* 2000, Cejudo 2008).

### 5.3 **Summary of Part One of the Chapter**

Mexico's modernisation reforms (administrative and economic) that started in the mid-1980s, although with differences of degree and focus, remain ongoing. As I have reviewed in the first part of this chapter, foreign trade represents a very important part of Mexico's economy. It is not surprising that measures for improving the administration of Customs and trade regulation are regarded as top policy priorities. Whilst discussing the implications of foreign trade on social welfare is beyond the scope of this dissertation, the economic theory assumptions—trade liberalisation as an engine for economic growth—are regarded as important components in the context (and discourses) around the case. I have also presented the most relevant aspects of the democratisation and modernisation of the Mexican public bureaucracy, which set the path towards a more impartial and professionalized operation of central government agencies. Having set the general 'scene' (context), the next part introduces the case.

## **Part 2: The Case: on technology, trade and trade regulations in Mexico**

### **5.4 Introduction: Foreign Trade regulations in Mexico**

As indicated in the introduction of the chapter, the case takes place in the area of foreign trade, the engine for economic growth for an open country like Mexico. There are many aspects related to foreign trade, and one of them is its regulatory activity. This is our entrance point to the case. I shall be looking at the activities, processes and regulations that entail the use of authority of government. I shall also remind the reader that Mexico's foreign trade is substantially large and highly complex in terms of regulatory activities and compliance (WTO 2008).

#### **5.4.1 Foreign trade procedures and Mexico's regulatory activities**

Foreign trade entails the movement of goods, capital or services across borders and, as such, it involves a variety of regulatory activities that business companies have to comply with, known as trade procedures. These regulatory procedures include fiscal activities (i.e. the collection of customs duties), safety and security procedures (i.e. anti-smuggling controls) and regulations related to trade policy agreements, such as tax returns, quota restrictions or preferential access to goods. A typical foreign trade formality associated with trade policy is, for example, the certificate of origin —a document that an exporter produces and the government certifies attesting that the goods are manufactured or processed in a particular country.

In Mexico, the administrative procedures related to foreign trade activities involve the issue of around 37,000 export licenses, 1 million import licenses and 10 million importation requests per year. There are more than 55,000 foreign trade users and around 30 main actors from several sectors: government agencies, exporters, importers, logistics and trade associations. The regulatory requirements and normativity of trade procedures are rather complex; for example, a common operation of foreign trade entails the presentation of at least 40 different documents that include between 7 and 14

paper sheets. The government estimates that at least 65% of single data points are captured on more than one occasion (i.e. the identification of a given enterprise).

The entry point to my case study is the Ministry of the Economy, which, together with Customs, oversees the biggest part of Mexico's trade regulations. Let me review it briefly.

#### **5.4.2 Mexico's facilitation trade body: the Ministry of the Economy**

The Ministry of Economy (ME) of Mexico is a member of the executive cabinet of Ministries responsible generally for the competitiveness and economic growth of Mexico.<sup>50</sup> Under these general responsibilities, the Mexican Foreign Trade Law empowered the Ministry of Economy to issue the country's trade policy, to coordinate international trade negotiations and to issue rules for enforcing trade agreements. Since 1982 -and given the context of neo-liberal reforms in Mexico- the Ministry of Economy has occupied a key role in terms of Mexico's economic agenda. Together with Customs, (an agency that depends on the Ministry of Finance and Public Credit), both agencies are the most important regulatory bodies in terms of trade.

The ME counts on different strategic divisions to deal with different aspects of its general mission. I am particularly interested in the activities of the Vice-Ministry for Trade and Industry, which is responsible for the proposal and coordination of public policies to increase Mexico's competitiveness, strengthening the domestic markets and promoting foreign commerce. It is also the unit that administrates foreign trade procedures and regulations, such as issuing certificates of origin, import and export licenses or trade promotion programmes for manufacturers.<sup>51</sup><sup>52</sup> The operative unit within the Vice-Ministry that is directly responsible for the promotion, operation and facilitation of trade is the General Direction of Foreign Trade (DGCE), which comes next in the hierarchical line. For simplicity of the narrative, I will be referring to the ME

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<sup>50</sup> The ME constitutes the focus of this research, and thus, the main actor. See methodology chapter.

<sup>51</sup> A common trade promotion programme is called PROSEC, and means that the government grants a tariff reduction measure to beneficiary companies to produce certain goods; the programme only applies to certain industries including textile, electronics and automotive.

<sup>52</sup> Other parts of the ME cover related areas of international trade (i.e. agreements' negotiations), but they do not deal directly with foreign trade procedures and services, and thus excluded from the main analysis.



in general, although the reader should bear in mind that the Ministry has many other offices with no duties directly related to foreign trade.

### 5.5 **From SICEX to the Digital Single Window for Foreign Trade**

The case narrative is structured into three chronological periods. Period 1 (SICEX phase I) goes back to the mid-1990s and covers the award-winning technological platform to support international trade procedures, called SICEX —short for “Integral System for Foreign Trade”. I pay particular attention to this phase’s initial problems that the technological platform came to solve as well as its main achievements. Period 2 (SICEX phase II and III) presents the main actions, developments and results from 2000 until 2008, the moment when the government announced a new initiative to replace the existing SICEX. From 2008 to 2012 (period 3), I review the most recent developments and advances towards what we know as “the Mexican Single Window for Foreign Trade”. The phases, main events and contextual factors are summarized in the next figure.

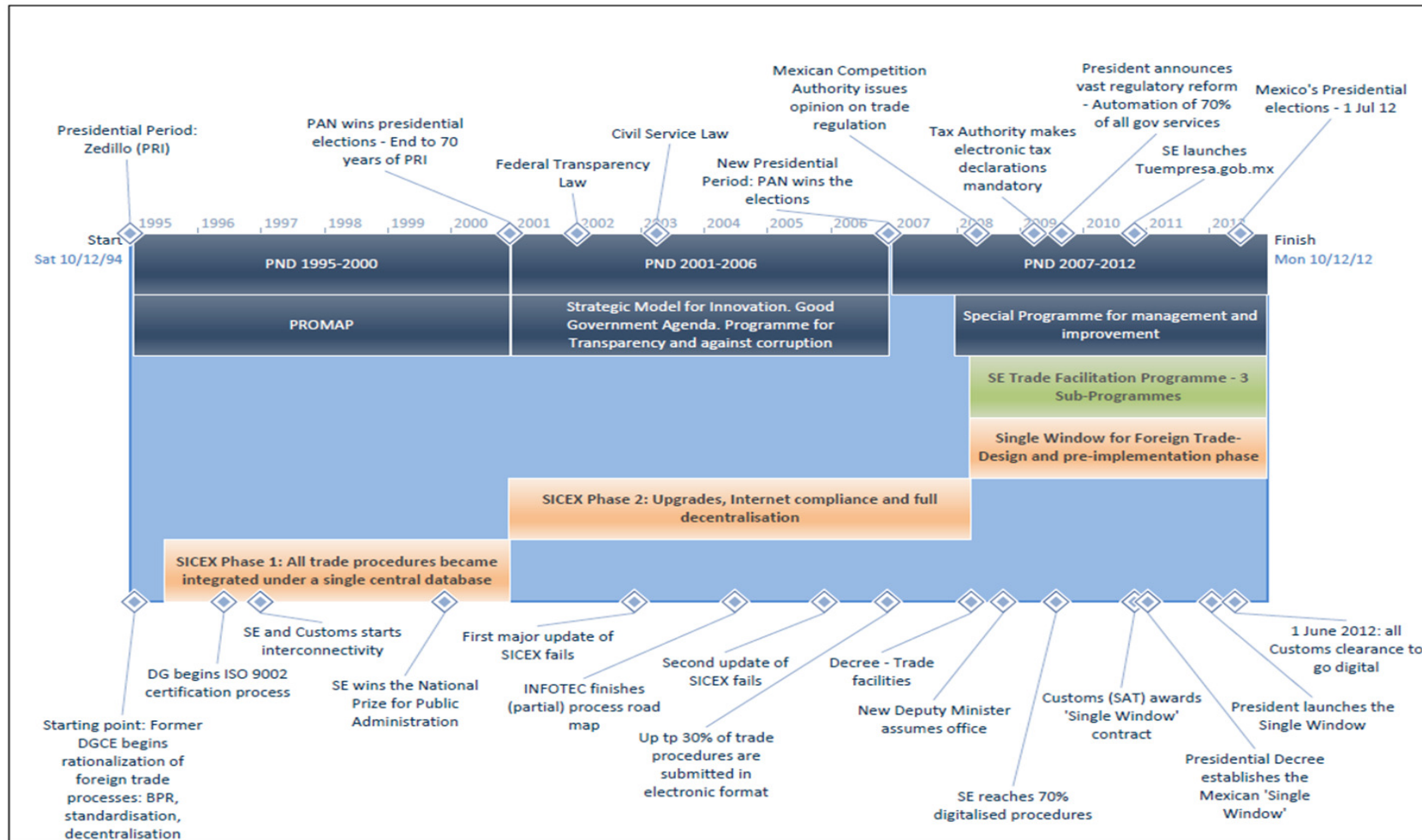


Figure 8: Timeline of the case: from SICEX to the Mexican Single Window for Foreign Trade

The upper part of the figure presents what I defined as the main contextual factors (navy blue colour and green). The upper part also refers to the National Development plans (PND), and a series of episodes that relate to broader reformist actions of the government. The existence of Mexico's national planning policies goes back to early 1930s; since then, each presidential administration issues its own 6-year plan. The PND sets out a hierarchical structure of guidance and plans that covers the different levels of the government (national, regional and local planning). This is why the PND offers a good indication of Mexico's ideals in economic and social policies. Both, PND and the particular modernisation programmes as well as relevant trade policies are connected to the first part of the chapter and are important institutional forces that were in place and with material effects within the project under study. In turn, the lower part (pink colour) clusters the process design features and main interactions during the trajectory of the project. The episodes that are portrayed in the inferior part are those that I regarded as crucial from the process point of view of the project, and I shall be referring to them in the following sections.

Regarding the properties of technology, as I have anticipated in Chapter Three, they can be broadly related to enterprise systems in their functionalities, although I do not refer to these as *off-the-shelf* commercial software packages (i.e. as in Davenport 1998). I elaborate on its technical features accordingly, as SICEX and the Single Window have their own specificity. But in general, both initiatives entailed the use of hardware and application software intended to manipulate large bodies of data to support bureaucratic processes, information flows, and reporting across the central government, relying on internet connectivity to operate. In terms of their complexity, both SICEX and the Single Window transcend building a website; they require intra or inter-agency coordination.

### **5.5.1 Period 1: from multiple to a single foreign trade platform**

The story of administrative simplification within the ME and foreign trade procedures in which the case takes place goes back to the presidential term of 1994-2000, when the government started building a new technological platform to support the administrative

simplification (Secretaría de Economía y Fomento Industrial (SECOFI) 1999). By mid 1990s, the scenario in terms of administrating and resolving foreign trade procedures was far from being favourable to the goals of neo-liberal reforms that aimed at increasing Mexico's position in international trade. The initial motivation behind a collaborative, technology-supported project was the need to have clear rules and procedures to eliminate so disparate variations in decision making, performance, and results. As the former Deputy Minister illustrates:

I'm going to tell you what my problem was [when I became the General Director of Trade in 1995]. The first thing I notice is that I have to sign 200 matters per day... nobody can review that. Nobody. Thus, there were several things to be done. First, to generate rules, transparent and published rules.. and we did so, we created clear rules available for all. And then, we started with process reengineering, because we realized that the same papers went around two or three times in the same Direction. So we started doing process diagrams and so on... *Former Deputy Minister, Ministry of the Economy*

The initial motivation behind a collaborative, technology-supported project was the need to have clear rules and procedures to eliminate the disparate variations in decision-making, performance, and results of foreign trade regulation in an increasing competitive environment created by NAFTA. The absence of a clear system of rules co-existed with disparate and precarious technological platforms, each operating according to its own logic or criteria. Moreover, there was at best a weak communication infrastructure to connect databases in different locations. This means that the diverse offices of the Ministry of Economy (i.e. the central office and the 52 federal delegations in the country) analysed procedures that drew on different decision and information standards. Security was not robust (when it did exist) and, together with the different interpretations of decision standards, there were notable differences between offices when issuing administrative decisions.

What did technology infrastructure mean for businesses back in 1995? Put it simply, if you were a foreign trade company with operations in Mexico and wanted to issue an import license, you would have had to present your company's name, address, and telephone numbers, name of the legal representative, and all their official proving certificates, in paper, in person, face to face to the ME of your jurisdiction, even if that required traveling hours and no matter if you had done so for a different procedure (i.e. import quota) the day before. Waiting times varied, being 15 working days the quickest.

In the case of a rejected procedure, a company would have to review the response and check its accuracy as at least 15% of importation permits contained administrative errors, such as typos or misspelled data requirements. In the case of an error, the company would have had to start the whole process again, waiting from 15 to 25 working days to get the procedure authorized.<sup>53</sup>

### **SICEX: System design, technical features and implementation**

With the help of its own “clients” (foreign trade companies), the government started several actions in parallel: a process redesign, a rationalisation of procedures, and the design of a unified, central database that would enable the decentralisation of the administrative operations. The team that coordinated the design and implementation of the system followed a typical information engineering methodology that started from a system analysis and design (i.e. preparing process decomposition diagrams, process dependency diagram). The first phase also encompassed defining the technological architecture to be applied and preliminary designing each of the system modules. The next step included pilot tests, the evaluation of the system performance and general training sessions across to relevant ME personnel. The system was then rolled out throughout the country.

In terms of operations, the government claimed that the newly designed SICEX included four features: (i) a secure and errorless information entry that linked databases to confirm or reject certain data entries (i.e. that a given ID matched a company’s name, address and other general information); (ii) a transparent decision criteria embedded in rules and requirements to minimize possible discretionary decisions or disparate responses to a similar request; (iii) an automatic resolution mechanism that could resolve a request automatically given certain parameters (i.e. Customs’ catalogues of authorized traded goods); and (iv) a non-falsifiable response, granted by a single and unique number, printed in secured paper and recorded onto a smart card.

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<sup>53</sup> Source: “History of SICEX”, page 5.

An initial security scheme was also put in place to assign roles, authorizations and levels of responsibilities and hierarchies; the government claimed that, while far from being perfect, the security scheme made progress from the alternative paper-based system.<sup>54</sup>

The implementation phase also included the first steps towards collaboration with other federal agencies through network connectivity. Particularly, it enabled the ME and Customs to work together in a synchronised fashion over certain authorisations, particularly on preferential agreements and some non-tariff regulations. The way it worked was relatively simple: consider that the ME granted a special programme to company X to import certain inputs at a preferential rate; this information was then incorporated into SICEX as an “automatic notice”. With the automatic notice in place, Customs could verify it *in situ*, and authorize the importation to Company X without the need of doing additional paperwork or requesting further documentation. Although restricted to certain regulations, the internal connectivity between both agencies meant that it was no longer necessary to use secure paper or smart cards to *validate* the transaction in the presence of the customs agent. This initial network connectivity between the Ministry and Customs opened new channels for future developments.

### **Summary and main activities of period 1**

Back in 1995, the map of foreign trade services was messy and hard to manage both, internally and for companies. By the end of 2000, trade procedures were standardised, responded to newly created rules, and were broadly incorporated into a single and integrated database. By 2000 it was also possible to comply with certain regulations over the internet, mainly those that were informative such as annual reports from the beneficiaries of special export programs.<sup>55</sup> The implementation of the technological platform meant that foreign trade procedures (i.e. rules of origin certificate approvals, authorisation and management of import quotas and licenses) became integrated under a single and unique database, registered and standardised into one information system that could be accessed from decentralised points across the country. It also included

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<sup>54</sup> Interview with public officials from the ME.

<sup>55</sup> The capabilities of the system, by 2000, were mainly reduced to streamlining the processes of reception, authorisation and resolution inside the ME. Submission or collection of procedures was vastly done face to face.

certain degrees of automation, like basic information validation (i.e. that the ID matches the name of the person/organisation).

Overall, average response times were reduced, and also allowed the first steps towards collaboration with other government agencies. In particular, the connectivity with Customs became a salient feature.

The system also facilitated the administrative decentralisation process, reaching 75% of trade procedures by the end of 2000. The fact that the rules became embedded within the technological platform translated in greater homogeneity and standardized decision criteria as well increased monitoring capabilities.<sup>56</sup> The latter was regarded as particularly important in the implementation of a total quality system that the ME was pursuing in parallel. Particularly, SICEX entailed features such as contract reviewing, assuring the control, identification and reliability of user's information that were necessary in order to comply with the ISO 9000 norms. The system also generated basic statistics that proved useful for archival and follow up of trade procedures. Finally, the information system reduced errors related to manual and paper based administration, another key aspect of quality systems controls.

At this point, it is useful to recall that the implementation of SICEX happened within an umbrella of broader modernisation reforms, that is the design and implementation of programmes of administrative reform such as PROMAP (see section 1 and table 10 earlier on this chapter), as well as coping with enormous regulatory pressures as a result of NAFTA. I do not contend here that any of these *alone* could explain the relative success of the platform created in the Ministry of Economy, but certainly that these broader institutional forces provided a basis (or operational mechanisms) that facilitated and promoted the legal and institutional transformations within the Ministry of Economy.

These initial efforts may seem modest compared to the progress that other countries were making at the same time (i.e. International Trade database in the USA) or in terms of scope. After all, one may argue that the case was simply all a matter of putting things

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<sup>56</sup> Source: reported results of the project in the document "History of SICEX", and interviews with ME officers.

in order and streamlining processes with the help of a single database. Yet, the system represented a milestone for the Mexican public administration and set a precedent for other e-government programmes. In 1999, the National Institute of Public Administration awarded the Ministry of Economy with the most prestigious national prize in public administration for its innovative achievements and possibilities of replication.<sup>57</sup>

## **5.5.2 Period 2: Working with SICEX (2000-2008)**

### **Towards a Paperless Administration (2000-2006)**

The year 2000 represented a big change in the process of democratisation in Mexico. Even when, as we reviewed in the first part of the chapter, Mexico's bureaucracy was becoming less clientelistic, an entire new Cabinet of Ministers was appointed and with them, a series of 'cascade' changes occurred across the federal agencies. Recall that the year 2000 meant the end of a longstanding period of the same party in charge of the executive branch of government. Political changes, and particularly those that follow presidential elections, are precisely one of the biggest challenges for policy continuity in Mexico as well as in most Latin American countries. Even so, the team working on SICEX did not experience drastic changes in the personnel. It was indeed the case that the General Director of Foreign Trade was promoted to Deputy Minister and, with her, most middle managers remained in their duties. This is important because it enabled a smooth continuity for the award winning technological platform —SICEX.

Building on the efforts I described in the previous section, the government launched a new programme to keep SICEX's progress moving forward. Called "*Towards a Paperless Administration*" (TPA), the distinctive feature of the new phase was to incorporate more broadly the use of internet and magnetic discs to reduce the use of paper and to deliver better and quicker services. Strengthening the collaboration with other agencies, and particularly, giving continuation to the already initiated digital validations with Customs, was the other big aim of the project.

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<sup>57</sup> In Spanish, the Prize is called "*Premio Nacional de Administracion Publica*", and it is the only one granted to the ME and to an e-government programme in Mexico.



There were two complementary actions to give continuity to the programme: (i) updating the system features with advances in the elimination or simplification of the regulatory environment, and (ii) modernising the technology infrastructure that enabled SICEX to communicate across its federal offices and with other agencies (network connectivity). Both actions were identified as crucial, not only to reduce the use of paper and increase progressively the availability of web-based services, but also as means to incorporate the use of electronic data *validation* with a growing number of Ministries.

Updating the technological platform of SICEX remained a priority for the Ministry, mainly because the volume of administrative procedures was growing and more technological capacity was needed. To do so, the government occupied a mixed strategy of in-house and outsourcing deals. The latter entailed two failed intentions, at best.

The first outsourcing deal was awarded in September 2002 and entailed a general assessment of the system features, the revision of procedures (a classic BPR exercise) and the identification of those areas in which SICEX should be upgraded.<sup>58</sup> Only three months later, the contract was rescinded as the Ministry alleged that the company lacked sufficient expertise and technical capabilities (Secretaría de Economía (SE) 2006, pp. 71–2). After the first failed attempt, the system update was re-planned. This time, INFOTEC—a government-linked center for innovation and technology development—was in charge of designing the technological upgrade and creating a doable plan for all substantial processes and changes that were needed.<sup>59</sup> With a clearer roadmap in hand, the Ministry set out an open tender and awarded the contract for upgrading tasks to a private company in September 2004. One year later, and with no major achievements in hand, the government cancelled the contract again (Secretaría de Economía (SE) 2006, p. 76). The arguments that the Ministry set forth were no different from before; the government officials argued that the second company had failed to meet the deliverables agreed in the contract, a claim that the private contractors challenged by taking the case to Court. While the dispute remained in the Court for

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<sup>58</sup> The whole contract included the revision of 18 modules that were on SICEX. The total length of the contract was about three months.

<sup>59</sup> INFOTEC delivered three series of documents including process redesigns and manuals of procedures that followed an ISO 9000 format (SE 2006, p. 74). With that, they created the roadmap to upgrading the system in place.

several years, operationally, the budget was frozen and no further upgrades were possible.<sup>60</sup>

Even though the general upgrade of the system failed, other parallel and internal actions took place, especially in the area of digital security and coordination agreements with other agencies to share the information and availability for the electronic validation of a growing number of formalities.<sup>61</sup> From 2004, the digital connectivity was extended to other non-governmental agencies such as the Mexican Federation of Customs Agents (CAAAREM), which allowed both organisations to share trade information and “cross-check” the data declared by their customs agents on a (still) limited number of international trade procedures.

In broader institutional domains, the government joined efforts to adopt the use of the electronic signature in conjunction with other federal agencies as well as with other countries.<sup>62</sup> Actions taken in this line entailed several technological updates (i.e. acquiring security software and new authorisation procedures) as well as taking part in official meetings formally initiated in 2000. Despite some general progress on the use and implementation of the electronic signature in the country (i.e. two federal Agreements on the subject), it was not until 2009 that the advanced electronic signature was approved and implemented across the federal government.

### **Implementation and mixed results**

From 2000 to 2006, the system (SICEX) processed more than 1.1 million applications from 45 thousands of users (foreign trade companies). By 2006, the administrative

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<sup>60</sup> According to my later interviews, the case was resolved by 2011 and it favoured the Company. In the first round of interviews during 2009, voices were controversial on the issue. Some people claimed that the leader of the project at that time was too difficult and did not let the project flow, while others suggested the technological upgrade was underestimated by the company. Unfortunately, I could not get access to the case, which would have led some light on these issues.

<sup>61</sup> Other internal technological upgrades included the acquisition of new servers and improving the internal connectivity between the central office and the federal delegations across the country. By the year 2006, all offices operating SICEX were connected via an integrated services digital network (ISDN). (SE 2006, pags. 65-70).

<sup>62</sup> By the end of 2005, the Ministry joined a foreign trade working group to facilitate the adoption of electronic signature internationally. Although no immediate results were possible, these effort marked the starting point on what it later became the digital trade scheme between Colombia and Mexico.

decentralisation efforts were concluded and all trade procedures appeared in charge of the ME personnel distributed in the 52 federal delegations. Most processing times were reduced and in some cases, there were savings in operational costs such as paper (Telecom-CIDE 2007).

From the business' user perspective, the system increased the number of trade procedures that could be initiated over the internet. In 2000, only 6.2% of trade procedures were submitted through digital means, and by the end of 2006, the number reached 30%.<sup>63</sup> The absence of an approved legal framework for the use of electronic signatures in place signified that it was only possible to receive trade procedures in digital means, but not to respond to them over the internet.<sup>64</sup> In practical terms, while the submission channel was facilitated, in most cases, businesses had to attend a government's office in person to collect any trade regulation.

### **Turning into slow motion (2006-2008)**

With the arrival of a new administration in December 2006, the e-government initiative got frozen for some time. Failed outsourcing deals to upgrade SICEX (particularly the later one) ended in a legal dispute that restricted the availability of financial resources to further invest in the system.<sup>65</sup> During 2007 and the first 2 quarters of 2008, major advances in relation to the project concentrated on the simplification and elimination of foreign trade procedures, the revision and changes to trade regulation and in carrying out the adjustments that the technological platform required accordingly. A salient example has been the passage of a Presidential Decree in March 2008, which set the basis for further trade simplification procedures and formally included the establishment of a Digital Single Window for Foreign Trade. In other words, the main

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<sup>63</sup> The number represented a fair one, given the fact that the legal framework in place limited the possibilities of electronic submission to only few services and regulations. In addition, these figures only represent the proportion of initiated procedures over the internet (or magnetic discs) and not to the total cycle of trade procedures.

<sup>64</sup> The Mexican Law of Administrative Procedures establishes that responses to foreign trade regulations require the signature of a responsible public servant. Before the electronic signature was approved in 2009, public servant had to sign in the forms in paper, hence, limiting the administrative capacity to fully process procedures online.

<sup>65</sup> Interview with public officials from the ME (#12, #16, #21, #22).

achievements concentrated on the regulatory and policy side rather than on technological advances.

### **Summary of Period 2 (2000-2008)**

During the years covered in this phase (2000-2006 and 2006-2008) the project was strengthened in terms of continuity, although its achievements may be modest in comparison to the changes that occurred during the previous period. By the first quarters of 2008, most results concentrated on updating and maintaining the technological capabilities internally (both the platform and the digital connectivity with Customs), continuing the efforts towards simplification and elimination of red tape (such as unnecessary trade regulations), and building the basis for international collaborations with other countries. In technological terms, there were neither major changes in the ways in which the system worked or was operated nor was there a notable change in the main features the system could support. Another change in the administration was coming, and the project was going to envisage changes as well.

#### **5.5.3 Period 3: From SICEX to the Single Window (2008-2012)**

The opening of this new phase starts with a new norm that the government approved in March 2008. Concomitantly with previous changes in SICEX, the government envisaged the creation of a digital Single Window to process all trade procedures in a single entry point.<sup>66</sup> Later in August 2008, a new Minister was appointed and further changes occurred in the next hierarchical lines. A new Vice-Minister of Trade and Industry was appointed in 2008, which later appointed a new General Director for the DGCE. The new team followed the idea of seriously building a Single Window for foreign trade, and pushed the project on the competitiveness agenda even further.

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<sup>66</sup> “Decreto por el que se otorgan facilidades administrativas en materia aduanera y de comercio exterior” (Decree that grants administrative facilities concerning customs and foreign trade), published in the Federal Official Diary, 31 of March 2008.

A number of institutional forces contributed to this vision. The first one came from a ‘technical opinion’<sup>67</sup> that the Mexican Competition Authority (*Comisión Federal de Competencia*, in short CFC) produced in May 2008 regarding issues affecting Mexico’s performance in foreign trade. In this opinion, which was grounded in economic language and backed with international statistics, the CFC identified that Mexico could achieve a significantly better performance of economic growth and competitiveness by investing in foreign trade facilitation policies (Comisión Federal de Competencia 2008, pp. 4–5). The CFC recommended reducing the levels and dispersion of tariff regulations, to simplify and deregulate customs clearance procedures and to build institutional capabilities for government agencies that regulate foreign trade (Comisión Federal de Competencia 2008). The use of new ICT to support processes of simplification of trade procedures, especially for customs clearance, was also highlighted. The opinion was particularly opportune as Mexico’s volume of exports to the USA was superseded for the first time by China. This episode was a non-trivial concern considering Mexico’s geographical position and its natural comparative advantage to trade not only with North but also Central and South American countries. The Ministry of Economy took this opinion—in conjunction with others coming from international bodies (i.e. World Bank, CEPAL, OECD see section one of this chapter)—to support an ambitious trade reform that included a massive reduction in tariffs, and a more strategic use of networked technologies to support the trade facilitation process. These policies are precisely those I commented earlier on under the label of “Programme for Trade Facilitation” (see the green box in the figure of the case timeline).

A further fact, also related to the CFC’s opinion, had to do with Mexico’s poor performance in world competitiveness and trade facilitation indexes as indicated at the beginning of this chapter. The World Bank’s report *Doing Business* positioned Mexico number 41 across 183 economies for doing business in 2010. Yet, in terms of trading

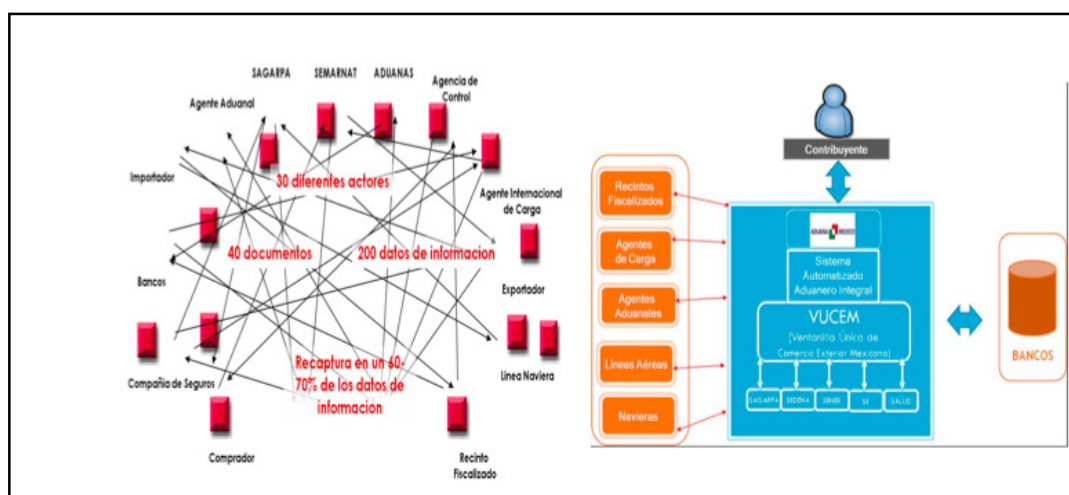
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<sup>67</sup> In Mexico, certain bodies are empowered to provide advice on given aspects of the economic and public life. They are called ‘technical opinions’ to reflect the expertise and neutrality of the opinion. One of these bodies that do so is the Federal Competition Commission (CFC), Mexico’s Competition Authority. Besides its mandate to promote competition policies, the CFC also issues opinions on current regulatory framework and public policies regarding competition and free access to markets (see CFC’s main website: <http://www.cfc.gob.mx/index.php/en/%C2%BFQUE-HACEMOS/opinions.html>). In this case, the opinion was no-binding and issued by the Chairman of CFC.

across borders (a sub category in which the total score is built), Mexico scored number 69. Given the complexity of the current system of trade procedures, according to ME's data, Mexico could advance at least 40 positions with the one-stop-shop put in place, *ceteris paribus* all other countries' progress (Secretaría de Economía (SE) 2010). Not surprisingly, escalating positions in a world ranking such as the World Bank *Doing Business* or the WEF Competitiveness Report translates in a strong political incentive, given their publicity and visibility both nationally and in global trade forums.

Within this context, after a series of informal meetings between Customs, the Ministry of Economy and other members of the *Foreign Trade Commission*, a working group for the simplification of trade procedures was set up in July 2009. The people participating in the sub-group did know each other well—at least in their majority. In some cases, they have worked together in setting up the first steps towards coordination mechanisms between Customs and the ME, and certainly kept working together during period 2. In other words, there was a history of collaboration or coordination that started several years. Yet, it was not until 2009 that this sub-group gained a rather more formal status.

The following figures offer a better grasp of the main policy ideas in designing the Single Window. The left hand side of figure 9 depicts the complexity of foreign trade procedures as per the year 2010. It involves at least 30 different actors (exporters, importers, custom clearance agents, public agencies such as the ME and Customs, etc.), up to approximately 40 different documents in a single process chain, up to 200 data points of which over 60% are captured more than once, and more than 165 procedures to comply with all Mexico's trade regulations. More than 10 thousands documents are processed per day by Customs. On average, a single customs clearance lasts 5 days (maritime trade operation).



**Figure 9: Mexican Single Window for Foreign Trade (VUCEM): Before and after scenario**

Source: Secretaria de Economía (SE) 2010

The right-side figure portrays the government’s adopted model for the Single Window. It is based on the United Nations Centre for Trade Facilitation and E-Business (UN/CEFACT), and exhibits a much cleaner, transparent and parsimonious view on trading across borders. Based on the recommendations of UN/CEFACT, the Mexican Single Window is defined as follows:

The Mexican Single Window is a facility that allows parties involved in trade to send electronic information via a single entry point, submitted only once, to fulfil all import, export, and transit-related regulatory requirements. This is possible through the simplification, standardisation and automation of management processes. (Source: VUCEM website, own translation)

In practical terms, the Single Window includes two main components: (i) the inter-agency coordination; (ii) the contract of services, including the technological platform (catalogue of services).

**Interagency coordination.** The single entry point requires identifying and aligning the work of the relevant agencies with jurisdiction in international trade regulation. Besides the ME and Customs, these include: the Ministry of Agriculture (SAGARPA), the Ministry of Foreign Affairs (SRE), the Ministry of Health (SALUD), the Ministry of the Environment (SEMARNAT) and the Tax Administration Authority (SAT). Together with SHCP, all of them met in the International Commerce Commission, which main role was suggesting and negotiating changes to the existent legal framework. Other

agencies to be incorporated in the Single Window include: the Ministry of National Defence (SEDENA), the Ministry of Energy (SENER), the Ministry of Education (SEP), the National Institute of Anthropology and History (INAH), the National Institute of Fine Arts (INBAL), and the Mexican Council of Coffee (AMECAFE).

Since 2009, the interagency working group for trade facilitation held more than 30 coordination meetings. Their main activities entailed working together to harmonize processes, obtain consensus on required data elements and to work on proposals to simplify (or eliminate) trade procedures. These coordination meetings “entail reaching an agreement on synonyms, terms of foreign trade, definitions, and data fields with a strong component of de-regulation and reengineering of procedures” (interview with ME official, 2012, #40). In sum, the Single Window effort represents the “biggest effort of inter-agency coordination at the Federal level in Mexico” (interview with ME official, 2012, #40), supported with a web-based technological platform.

**Catalogue of services.** In June 2010, Customs set forth an open tender to outsource the project, which was awarded later in October (same year). The contract —of 811 million Mexican pesos (US\$ 67 million)—follows a typical public-private partnership (PPP) initially awarded for 60 months with a possibility of renewal subject to performance. The contract also put forth tough deadlines and goals to be achieved before the end of 2012. The following are the main services that have been outsourced:

1. **Consultancy:** an in depth review and modelling of the flows of trade procedures in government agencies and the private sector;
2. The provision of the **information technology infrastructure** and the Single Window solution, based on web (design of information management, implementation of modules and the automation of procedures). The technological infrastructure also includes the provision of a mobile network in the 49 customs in the country, tablets for customs clearance and digital clearance procedures, secure communication infrastructure between agencies, the operation, maintenance and support for the Single Window;
3. The **digitalisation** of 5 years of paper-based procedures (archival information of Customs daily operations, about 150 millions of sheets of paper);



4. **Disaggregated services:** provision of training and e-learning modules (for distance learning) available for trade regulators, and organisational change management.

The services contracted require public servants working in close association with external consultants in an effort that goes beyond developing a technological platform. The project means an exhaustive revision of trade procedures, the design and implementation of the technological platform and the digitalisation of archives in paper-based format to be available for digital queries, as well as transforming customs clearance into a fully mobile operation.

Soon after the contract was awarded, another visible milestone for the project leaders has been the passage of the Presidential Decree on January 2011. In order to avoid relying on the “good will” of the governmental agencies involved in the project, the passage of a Presidential Decree gave a strong political and legal support to the Single Window for Foreign Trade. The legal tool, entitled “Decree that establishes the Mexican Digital Single Window for Foreign Trade” put firm deadlines for interagency integration and explicitly required that each authority must facilitate the necessary infrastructure required. In addition, it established three phases for the project implementation (article III) on a progressive calendar of integration, due to be finished by the end of 2012.<sup>68</sup> The Decree also gave legal support to the above-mentioned working group for trade facilitation, by settling it officially as an Inter-Secretariat Commission for the Single Window. The Commission meets once a month, and has been the basis for negotiating, debating and coordinating the tight deadlines that the project set forth. The Ministry of the Economy chairs the Committee, which is also a salient feature: even when the funds for building and contracting out the Single Window are coming from the budget of Customs, the effective leadership comes from the team in the Ministry of the Economy.

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<sup>68</sup> The phases of implementation were described according to the actors that should be operating in different points in time. Thus, phase I establishes that the ME and Customs start operating no later than 30 September 2011; by phase II SEDENA, SEMARNAT, SAGARPA and SALUD should be on the platform (by 30 January 2012) and phase III, included SENER and SEP (no later than 30 June 2012).

<b>ACTOR</b>	<b>TYPE OF PARTICIPATION</b>
<b>Presidency of Mexico</b>	Political and legal support
<b>Ministry of Economy</b> Vice-Ministry of Trade and Industry DGCE COCEX: International Trade Commission	Project coordination and leadership
<b>Ministry of Finance and Public Credit</b> Tax Administration (SAT) <b>Customs Administration</b>	Operation and budget
<b>Ministry of Public Administration</b> Unit of Internal control	Facilitator and supervisor of procedures
<b>Other Federal Ministries</b> SAGARPA (Agriculture) SENASICA (Food safety agency) SALUD (Health) COFEPRIS (Protection against Sanitary Risk) SEMARNAT (Environment) SEDENA (Defence) SENER (Energy) SEP (Education)	Direct participation on trade procedures and inter- agency coordination
INAH and INBAL (Anthropology and Fine Arts)	
<b>External IT provider</b> <i>Integradores de Tecnología SA</i>	Building and operating the technical platform, providing consulting services (5 year contract)
<b>Custom agents, brokers and private sector</b> CAAAREM (Association of Custom agents) Private sector; AMECAFE (Coffee Association)	Direct users of e-services

**Table5.3: Main Participants in the Single Window project and key responsibilities**

Two further events in regulatory compliance helped the progress of the Single Window. From 2009, the Mexican government made the final steps towards the implementation of the Advanced Electronic Signature (FIEL for its acronym in Spanish) for tax compliance and other administrative services. In June 2009, the Mexican Tax Authority made the compliance of patrimonial tax declaration mandatory in digital format for all public servants. That was the starting point for making the use of FIEL a reality and yet another example of the public sector relying on the monopoly of the use of authority (Moore 1995). For this case, it meant a strategic step; from 2009, the rollout of authorized digital signatures amongst public servants became pervasive. The second event came from a Presidential directive. In 2010 the President announced a big step towards regulatory clearance, which set forth to automate 70% of all government

services by 2012. These two episodes in conjunction with other measures (such as the increasing importance of the Digital Government Agenda and the Austerity Decree), gave political and material support to the ME-Customs Single Window initiative.

In January 2012, the President formally inaugurated the Single Window for foreign trade, which has been on a trial period since October 2011 and still limited to only some locations and 21 trade procedures. The next picture shows the Single Window as it is operating.



**Figure 10: Screenshot of the Mexican Single Window for Foreign Trade as February 2012**

By March 2012, more than 24 thousand companies have registered as potential users of the Single Window (half of the entire universe of users). There have been around 25 thousands of electronic value vouchers (COVE for its acronym in Spanish), even when they are optional until the 1<sup>st</sup> of June 2012. The process of digitalisation of the paper-based archive of ME and customs has reached around 70% of completion while the website has had more than 280 thousands visits since its launch in October 2011. From the 1<sup>st</sup> of June, the use of the digital Single Window became obligatory for all trade operations with Customs, being no longer possible to make foreign trade transactions using other channels (i.e. paper based).

## 5.6 Conclusions of Part Two of the Chapter

While at first glance the progress and results that the project achieved from 2009 to 2012 look impressive, a more detailed understanding shows that the Single Window

project has been immersed within a long history of broader institutional dynamics. For example, the constant work towards simplifying and eliminating unnecessary regulation has been a salient feature within the Ministry of the Economy during the whole period. The modernisation reforms oriented to achieve more openness to trade, and particularly, the enforcement of NAFTA from 1995, changed remarkably the scenario of foreign trade in Mexico. As a high-level Mexican official of foreign affairs puts it:

the changes that NAFTA brought into the economy of Mexico were impressive... it made mandatory to adapt trade practices to the new pressures of competing in international markets... You could not explain Mexico's trade today [2012] without considering NAFTA and all the concomitant changes that it meant for trade regulation

Even when the case may seem smooth, there have been notable tensions and over time and particularly, in the latest three years. A salient and visible feature is the strong political support that the Single Window project achieved. But many other more 'invisible' factors contributed to what at first glance could be seen as a miracle. The strong process of knowing each other, the leadership position of certain figures, together with a strong political mandate that pushed for more open and competitive trade are very important contextual factors. The presence of international bodies, whether providing technical support (i.e. OECD, World Bank) or by opening platforms for sharing knowledge (SELA, IADB), has also shaped the trajectory of the project. This is not to say that the international bodies were imposing their views and agendas. I rather claim, in light of the project history, that Mexico's government embraced some of their views to achieve their own policy on trade.

The conclusions of the 3<sup>rd</sup> Latin American and Caribbean Regional Meeting on International Trade Single Windows held in November 2011 summarized what the Mexican project seemed to have achieved so far:

The plans to establish International Trade Single Windows form an integral part of the structure of public services and promotion of competitiveness... Such projects should take due account of fundamental variables, such as: support from governments, formulation of public policies on the matter, the consolidation of a legal and regulatory framework, the linkage of the agencies involved with trade processes, and the establishment of the Single Windows architecture, based on an all-encompassing vision of the institutional framework for foreign trade and its stakeholders (SELA 2011, p. 3)

Although we are yet to see the implementation effects on trade flows and on competitive indexes, the steps that the Mexican federal government put forward are remarkable. In the next chapter, I analyse the main discourses on public values and technology innovation.

## 5.7 **Postscript**

On Friday 1 June 2012, the Single Window became mandatory for all trade operations. This meant that, from that day onwards, *every* Customs clearance shall be done on digital means through the digital platform. Just one day before, the government released the contingency plans in case of failure. On that Friday, the Single Window crashed several times, and the contingency plan—using the old means—was authorised accordingly. The atmosphere was tense. On the night of 1 June 2012, top government officials and project leaders held a meeting with the consultants. In that meeting, they discussed whether they should extend the transition period for some more weeks. The logic was simple: if the electronic platform was amenable to crashes, then the whole project would be at risk. Despite the tensions, the government was very clear: there would be no extensions.

On July 1, 2012 a general election was held in Mexico. The incumbent party lost the elections, and PRI would return to power in December. The political risks were therefore anticipated too.

By September 2012, the Single Window continues operating. Apart from the crash on 1 June, there were only two more instances in which the system crashed and the contingency plan was put to work. Despite the system is far from being ‘optimal’, it keeps working and accommodating from one day to the other. There are no signs for the Single Window to go away.

## 6 Chapter Six: Eliciting discourses on public values and technology in Mexico

The aim of this chapter is to assess empirically what discourses on public values and technology can be traced over time, and to elaborate on their structural characteristics. The latter means an analysis on their meanings, historicity and relation of the discourses and the different ways it has been enacted and operationalized. It does so by focusing on the trajectory of key texts of the design and pre-implementation of the Mexican Digital Single Window for Foreign Trade (hereafter Single Window).

Context should be also taken into account: as I have already discussed, Mexico's foreign trade occupies a fundamental place in economic and political terms, a priority that has been materialised over the last 25 years through the design and implementation of policies to achieve greater gains from trade. These policies include the numerous free trade agreements as well as improvements in trade regulatory policy, being the Single Window its "most important one".<sup>69</sup> Reforms in foreign trade were also accompanied with a series of broader institutional changes aimed at creating a more professional, transparent and less burdensome public administration, that serve to emphasise and put the discussion of public values in context.

This chapter is organized as follows. I present an excerpt of the presidential Decree that establishes the Single Window for Foreign Trade—the key text that I have selected as my anchoring point for the case analysis.<sup>70</sup> Based on the role of texts as a mediating instance of reality (Chouliaraki and Fairclough 1999, Fairclough 2005a, 2010) and drawing on analysis on genre and intertextuality, I identify the *general* discourse within the case—competitiveness—. From there, I present the four different discourses that I find in the case, and elaborate on their structural characteristics. The rest of the chapter offers an in-depth elaboration of each of the discourses on public values and technology in a systematic way: I present the common discursive features of each cluster (content), I offer evidence on where they emanate from (conditions of production), and show how these discourses are consumed and materialised in technology (operationalisation)

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<sup>69</sup> Interview with a senior government official (Area director, Ministry of the Economy, #40).

<sup>70</sup> See section 4.3 of my methodology chapter.

(Fairclough 2005, p. 932-3, Phillips *et al.* p. 646, Munir and Phillips 2005, p. 1667). I focus my analysis on the specific discourses that emerge from the Single Window project. In addition, and in order to tackle temporality, the previous and smaller technological system that the government developed from 1995—SICEX—is used systematically to trace how these discourses were conceived, preserved, or marginalised over time. Further material from fieldwork (interviews, news and archival information) complements the analysis. At the end of the chapter, I present a summary of the main findings.

### 6.1 The nodal discourse on competitiveness and free trade

A key achievement for the development of the Mexican Single Window has been the passage of the Presidential Decree in January 2011. To facilitate the presentation of my analysis, I bring here an excerpt from the first part of this bill, which is particularly useful for unfolding a series of value assumptions and the main discourses within the case.<sup>71</sup>

<p><b>Felipe de Jesus Calderon Hinojosa</b>, President of the United Mexican States, in exercise of the authority vested in me by the Article 89, fraction I, of the National Constitution (...) and,  <b>Whereas</b></p> <ol style="list-style-type: none"> <li>1 The 2007-2012 National Development Plan indicates that a more competitive national economy will bring better investment conditions and job creation, for which it is indispensable to consolidate and enhance the institutional framework;</li> <li>2 These days, foreign trade demands measures of trade facilitation and commercial simplification that grant legal certainty and the reduction of transaction costs for Mexican enterprises, measures that will increase competitiveness;</li> <li>3 With the aim of supporting enterprise development in our country, it is necessary that the Federal Public Administration drives the use of information technologies, as they optimize the interaction between individuals (<i>particulares</i>) and government, together with the fact that they constitute a fundamental tool for the development of trade facilitation and offer a viable opportunity to achieve an effective and efficient foreign trade</li> </ol>
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<sup>71</sup> As a whole, the Decree comprises three sections: the expert in itself is the opening part and contains what it is usually known in the legal jargon as “legal reasons” (“*considerandos*” in Spanish) of the order. The second part includes twelve articles that set forth definitions and the responsibilities and actions to be executed by the agencies involved. The final and remaining part adds two “transitory” articles and the signatures of the President and ten Ministers from his Cabinet. I have drawn on these twelve plus two articles in the empirical chapter to explain the responsibilities, phases and specifics of the project and how they were actually produced, consumed and met (or otherwise).

- regulation;
- 4 In addition to the paragraph above, the use of information technologies in the operation of foreign trade reduces costs substantially, promotes the incorporation of small and medium enterprises to export activities, offers a transparent and equitable service, and strengthens the security for the users;
  - 5 It is convenient that the competent authorities concerning foreign trade coordinate and implement actions of simplification, automation and improvement of foreign trade processes that lead to, among other improvements, the reduction of time and costs of international trade operations;
  - 6 In conformity with the Foreign Trade Law, it is the responsibility of the Federal Executive, through the Secretary of the Economy, to coordinate the participation of the other agencies of the Federal Public Administration in the activities of foreign trade promotion, as well as to coordinate those [agencies] that administrate or control non-tariff regulations, with the aim of interconnecting them electronically with the aforementioned Secretary and with the Secretary of Public Finance and Public Credit;
  - 7 The Decree that grants administrative facilities concerning Customs and Foreign Trade, published in the Federal Official Diary the 31 of March 2008, foresees the establishment of a digital window for electronic procedures, to which the dependencies of the Federal Public Administration that operate instruments, programmes and (...) to be interconnected electronically with the Secretary of the Economy and the Secretary of Public Finance and Public Credit;
  - 8 Based on the trade simplification and facilitation policy that has already been instrumented inside the Federal Public Administration, the Federal Executive Branch under my duties considers necessary to issue, throughout the present Decree, the general dispositions for the establishment of the Mexican Digital Window of Foreign Trade (...);
  - 9 For the above effects, it is considered convenient to establish stages of implementation for the referred Digital Window, to which the individuals (*(particulares)*) will be able to carry out promotions or applications related to imports, exports or transit of foreign trade goods, as well as to comply with non-tariff regulations referred in this Decree;
  - 10 The present instrument counts with the favourable opinion of the Foreign Trade Commission, I hereby issue this **Decree**

**Figure 11: Excerpt from the Mexican Decree that establishes the Single Window for Foreign Trade**

DOF, 14 January 2011

In light of the contextual features of Mexico and its trade policy, the text of the Decree offers an important first indication towards the main discursive grounds—nodal or general discourse—on which the Mexican Single Window has been built and planned. The general discourse can be best regarded as one on *global competitiveness* in which countries must compete for investment and growth in order to reach development (see for example Moreno-Brid *et al.* 2009 and Part One of chapter Five). The grounds of the general discourse are based on the country's commitment to free trade and the path that



Mexico chose as its route for economic development since the early 1980s.<sup>72</sup>The increase in the participation of foreign trade as percentage of Mexico's GDP during the last 25 years, for instance, illustrates how this general discourse has been *materially promoted* and *materially enacted*. That is, the push for an increasing participation in the global markets has not *just* been a discourse but a discourse that has been accompanied with specific actions—such as joining NAFTA, signing multiple free trade agreements with other countries, and several industrial policies to promote foreign trade and foreign investment. By the same token, *building technological platforms for trade procedures*—whether SICEX from 1995 to 2008 or the current Single Window project—are also actions that have materialised the overall argument for greater competitiveness.

Examples of the presence of the general discourse can be traced back to middle 1990s when the previous and smaller project SICEX was being designed and implemented. Hence, competitiveness and trade liberalisation were central among the reasons to established SICEX, as it is shown below:

The **increasing economic globalisation** has created the **imperative need** among countries to count with more **competitive markets**, which has translated into an increasing **requirement** for foreign trade **efficiency**. **Mexico has opted** for a **greater participation** in **global world trade** flows for which has negotiated trade agreements with several countries in the world; the present administration **has captured this strategy** in the National Development Plan 1995-2000. *SICEX: A history of Success in foreign Trade Regulations, Ministry of the Economy, 1999 p. 1-2* (Emphasis added)

Paragraph 7 of the excerpt of the Decree serves as a connecting line as well:

[Whereas] The **Decree** that grants administrative facilities concerning Customs and Foreign Trade, published in the Federal Official Diary the 31 of **March 2008**, **foresees** the establishment of a **digital [Single] Window** for electronic procedures

The presence of this reference suggests that the establishment of the Single Window was foreseen earlier and appears as a result of previous planning (an explicit claim).<sup>73</sup>

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<sup>72</sup> See specially the first two sections of the previous chapter.

<sup>73</sup> The opening paragraphs of the refereed Decree of 2008 Decree are indeed very similar to those in the text under study. This fact provides further support to the established trajectory of the overall strategy in Mexico. These are the actual paragraphs (DOF, 31 March 2008, p. 1)

The 2007-2012 National Development Plan foresees that a more competitive national economy will bring better investment conditions and job creation, for which is indispensable to consolidate and enhance the institutional framework;

Taken together, these two quotes illustrate a historical trajectory and rather common finding in the texts: increasing competitiveness and promoting concomitant changes in trade regulation—including the use of technology—have been at the core of the government’s trade strategy for the last 25 years.

All in all, the general discourse is not about technology or e-government but rather about competitiveness, openness to trade and modernisation reforms. In other words, *competitiveness* is the general discourse that “subsume[s] and articulate[s] in a particular way a great many other discourses” (Fairclough 2005b, p. 10). I turn now the attention to elicit these instrumental discourses, their meanings and their trajectory over time.

## 6.2 Eliciting discourses on public values, technology and their trajectory

In connection with the debate offered in Beck Jørgensen and Bozeman (2007, p.376-7), the general discourse—increase competitiveness to contribute to job creation and economic growth—can be reasonably assumed as the *prime* value in the case, which suggests an end in itself.<sup>74</sup> Identifying competitiveness as the prime value, or general discourse, is useful as it opens up space to deal with the clusters of instrumental public values, their relationships and implications with technology in greater detail.

I turn attention again to paragraphs 2 to 5 of the Decree (see below for the emphasis on words). From a closer screening, a family of words refers quite explicitly to the ideas on competitiveness and the economic rationale that motivated the Single Window project. The use of the words ***reduction of costs***, whether explicitly as transaction costs or more implicitly in terms of time and other costs, appears several times in the four paragraphs. Other terms that can be clustered as part of the same vocabulary are the use of the verbs ‘demand’ and ‘optimize’ or the adverb ‘substantially’ to qualify the

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Whereas with the aim to support the development of the enterprises, it is considered convenient to provide administrative facilities to foreign trade users, so those operations [of trade] become more agile and simplified.

<sup>74</sup> As I have commented in chapter 2, Beck Jørgensen and Bozeman (2007, p. 373) offer a common distinction in social sciences between prime and instrumental values. While the former are ends in themselves, the latter functions as tools to achieve other values. Instrumental values, in turn, may themselves be prime values, depending on the socio-political complex they are immersed in. Recall that this dissertation shares the view that there are no indisputable prime values, as there are no indisputable or self-evident truths.

reduction of costs. In conjunction, the use of technology is portrayed as the ‘viable’ and most cost effective tool to support these goals:

- 2 These days, foreign trade **demands** measures of trade facilitation and commercial **simplification** that grant legal certainty and the **reduction of transaction costs** for Mexican **enterprises**, measures that will **increase competitiveness**;
- 3 With the aim of **supporting enterprise** development in our country, it is **necessary** that the Federal Public Administration drives the use of information technologies, as they **optimize** the interaction between **individuals** and **government**, together with the fact that they **constitute** a **fundamental tool** for the development of trade facilitation and **offer** a **viable** opportunity to **achieve** an **effective** and **efficient** foreign trade regulation;
- 4 In addition to the paragraph above, the use of information technologies in the operation of foreign trade **reduces costs substantially**, **promotes** the incorporation of small and medium enterprises to export activities, offers a transparent and equitable service, and strengthens the security for the users;
- 5 It is convenient that the competent authorities concerning foreign trade coordinate and implement actions of **simplification**, **automation** and **improvement** of foreign trade processes that lead to, *among other improvements*, the **reduction of time and costs** of international trade operations;

A first read of these paragraphs would suggest that public values usually associated to NPM are very dominant in the text and, as an extension, within the project. Paragraph 5, however, offers a less explicit reading. When the text refers to “reduction of time and costs”, it largely implies economic costs and technical efficiency, although not exclusively. For example, there were many instances in which actors suggested less tangible costs, such as a loss in public trust or government legitimacy as a result of abuse of office or dishonesty when dealing with regulatory procedures. In addition, the use of the phrase “*among other improvements*” leaves itself space for ambiguity. These other improvements may refer to different value assumptions, such as transparency and internal accountabilities political loyalty, the rule of law, robustness, and so on (I have underlined the words accordingly). In sum, the fifth paragraph shows the possibility of a variety of linkages between public values and technology in the design and implementation of the Single Window.

Building on these examples, the analysis I have conducted reveals four discourses on public values and technology that, with differences of degree, are apparent in the trajectory of the Single Window:

1. **Technical efficiency:** This cluster consists of typical new public management values: productivity, parsimony, effectiveness and references to business-like approach. It also consists of timeliness and user orientation. Usually, references of assumed values within this cluster are associated with economic thinking, a cost reduction as driving force and a focus on ratios of resource and results. The link of this cluster to the nodal discourse of competitiveness is very strong.
2. **Legality, justice and accountability:** This cluster includes three subgroups of related values. First, legality, as the overall umbrella to other similar and related values, such as the protection of the rights of the individual, equal treatment and the rule of law. In particular, it discusses ideas on procedural fairness. The second subgroup includes notions of distributive justice. The third one, accountability, refers to the behaviour of public sector employees; it includes references to other values, such as professionalism, honesty and integrity. Overall, discourses in this cluster relate to values more traditionally associated to public bureaucracies.
3. **Robustness and resilience:** within this cluster, common public values are robustness, adaptability and reliability. In turn, these are public values captured by the *machine* metaphor (Beck Jørgensen and Bozeman 2007, p.366). Related values are timeliness and security, and usually, the main concerns in this cluster centres in keeping the system up and running.
4. **(Forced) cooperation:** within this cluster, I define cooperation as the opposite to competition amongst public agencies (another typical mechanism that the NPM promoted);traditionally, because of lack of market forces within the public administration, the agencies have to be coordinated by cooperation (Beck Jørgensen and Bozeman 2007, p.366). An emphasis within this cluster relates to the use of authority to drive cooperation; an implicated value within this cluster is political loyalty, and I shall discuss it accordingly.

I claim that these discourses on families of values are *analytically separable*, although they should not be understood as neat separations. At first glance, public values pertaining to

technical efficiency (i.e. parsimony, productivity, user orientation) are quite prominent in the text of the Decree, a claim that goes in line with the focus of the general discourse on competitiveness. Yet, achieving parsimony and reduction of costs may depend crucially on the enforcement of legality. In sum, the relations between discourses are multifaceted and dialectical (Fairclough 2003, 2005, 2010), and while different, they are not totally discrete. In the following sections, I elaborate on each of these four prominent discourses, their trajectories and historicity, and the ways they have been interpreted and consumed over time.

### 6.3 Four clusters of public values

#### 6.3.1 **Technical efficiency and business-like approach: the economic rationality and the productivity discourse**

##### **Content/Discursive features**

Usually, NPM and its influence on e-government has been criticised for its shift of focus from effectiveness to efficiency, and market type mechanisms over equality and impartiality (Cordella 2007, p. 267-9, Persson and Goldkhul 2010). However, as Andrews (2011) suggests, very little research has gone beyond theoretical speculation about the relation and effects of NPM on efficiency and cost reduction more generally. Scholars in public administration have shown that the term efficiency is in itself ambiguous and many times confused with other values such as effectiveness or economy (i.e. Stokes and Clegg 2002, pp. 226–7 also Andrews 2011). Based on the work of Musgrave (1959), Andrews (2011, p. 283-4) proposes three different types of public sector efficiency: allocative, distributive and productive.<sup>75</sup> While the first two may relate to responsiveness and equity respectively, only the productive efficiency reflects the classic notion of the maximization of outputs and minimisation of inputs that NPM research seem to have focused on (Andrews 2011). In a similar idea to what Andrews defines as productive efficiency, Rutgers and van der Meer(2010) suggest that within the last decades, the notion of efficiency has been predominately understood narrowly as

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<sup>75</sup> Allocative efficiency is characterised as “the most efficient allocation of resources to reflect the wishes of recipients” (Andrews 2011, p.284), while distributive efficiency refers to the most efficient processes to distribute goods or services amongst those that need them most.

*technical efficiency*. Technical efficiency can be characterised as “a technical term concerning the relation between resources and results”, (Rutgers and van der Meer 2010, p. 757).<sup>76</sup> Drawing on the idea of *technical efficiency* is useful here, as it represents the main spirit within this cluster of values. References to reduction of economic and transaction costs, including those derived from all sort of activities related to trade procedure compliance, are very common during the whole trajectory of the project.

If we accept that the nodal discourse on competitiveness is strongly related to economic thinking, it could be reasonable to expect that a great number of the discursive features in this cluster will relate to technical efficiency. I have already shown that terms like reduction of costs, and similar references to economic thinking (i.e. *to demand, to optimize, to promote*) are salient expressions in the text of the Decree. In general, gains in technical efficiencies, such as an increase in the ratio of trade procedures processed and resolved per day, have a central place in the trajectory of the case. In the same line, references to actions to reduce excessive burdensome regulation (also known as “red tape”) are also significant within the materials analysed. Technology, in turn, is related in the cluster by linking its potential to generate cost savings in two related areas: the back and the front office (i.e. paragraph 3 of the Decree). The argument relies on the capabilities of new networked technologies to allow the automation of services in highly process-oriented agencies, in manners that were not possible before (Fountain 2001, chap. 3, Dunleavy *et al.* 2006, pp.10-2, Yildiz 2007, p.655). In turn, the internet and related technologies can lower costs and facilitate access and service provision to citizens, a well-known feature in the e-government literature (i.e. Fountain 2001, Bellamy and Taylor 1998, Andersen *et al* 2010). In sum, within this cluster, the choice of wording is rather explicit in the official texts and talks covering the project.

## **Conditions of Production**

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<sup>76</sup> Rutgers and van der Meer (2010) elaborate on the historical origins of the word “efficiency” and discuss how it has changed within public administration thinking. They differentiate the notion of “technical efficiency” to “substantial efficiency”, the latter comprising of those professional actions and organisation of the public sector to ensuring compliance with the execution of legal rules and regulations (Rutgers and van der Meer 2010, p.757).

The discourse on technical efficiency, and its associated values (i.e. user orientation, parsimony and productivity), has been very prominent not only during the current Single Window phase but also in earlier phases of SICEX. Let me go back to the initial text of SICEX. Back then, in order to deal with the *imperative need* to make trade regulations more efficient, the government claimed that the use of technology was mandatory to cope with a number of problems:

The **problematization** (...) in 1994 was that users' requirements were **not served adequately** in terms of **efficiency, simplification** and **quality** mainly because [existing] information systems did not conduce to **achieving** a better internal administration of trade procedures (...) In sum, we were not able to **satisfy our clients with efficacy** in terms of their **demands**. (...) The decentralisation, deregulation and simplification of trade procedures **cannot be achieved optimally** when the administrative procedures are managed **without information systems** that administer, control, store, and report the necessary information for the correct operation of trade procedures. *SICEX: A history of Success in Foreign Trade Regulations, Ministry of the Economy, 1999 p. 13*(emphasis added)

A similar efficiency and economic rationale of public values is also apparent in the 2006 text, when the government explains why more trade regulations should be dealt with over the internet:

The recent world trend has marked a **rapid integration** of governmental services over the **internet**, through which government seek to **facilitate citizen access** via **more efficient** channels to comply with procedures, that are available in the **most convenient place and time**, and with **lower administrative costs**. *Memoirs 'Towards a Paperless Administration', Ministry of the Economy, 2006, p.11* (emphasis added)

An emphasis on user orientation, offering timely and cheaper service to clients (businesses in trade) is visible from this quote, which in turn resonates with paragraph 2 and 3 of the Decree. This offers an ambiguity in what the government means by efficiency and productivity: organisational aspects of public administration are intertwined with the effects on the relationship between government and citizens (or clients). The latter, often includes other less tangible aspects of that relationship, such as legality, flexibility and the rule of law.<sup>77</sup>All in all, the prevalence of technical efficiency—

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<sup>77</sup> In the section that presents the advantages of SICEX, the text outlines six main categories: efficiency, transparency, security, control, flexibility and homogeneity; all categories are given a similar space in the text (i.e. same number of pages). Later, in the 'results section', however, there is a notorious emphasis on

approximated by references to reduction of costs as well as parsimony in the form of simplification of procedures—has been present since the days SICEX was designed and implemented, and constantly reproduced during the Single Window phase.<sup>78</sup>

1994-2000	2000-2006	2008-2012
<ul style="list-style-type: none"> <li>• <b>National Development Plan</b> (p.158): established that to promote economic growth Mexico “requires (...) simple administrative procedures”</li> <li>• <b>Modernisation Programme for the Public Administration</b>(<i>PROMAP</i>): “To transform the Federal Public Administration into an effective and efficient organisation to fully meet society’s needs”</li> </ul>	<ul style="list-style-type: none"> <li>• <b>National Development Plan:</b> set the objective to increase Mexico’s competitiveness and included two specific strategies for foreign trade regulations: to create public services of <i>quality</i>, and to promote the use of information technology</li> <li>• <b>Good Government Agenda:</b> the use of ICT is presented as the fourth out of six strategies; ICT are seen as tools to support broader modernisation strategies, such as achieving more efficiency, quality, transparency and honesty</li> </ul>	<ul style="list-style-type: none"> <li>• <b>National Development Plan</b> (chapter 5, objective 5): established the need for improving government’s efficacy and efficiency to meet citizens needs via better regulation, administration and results of the federal civil service</li> <li>• <b>Special Programme for Management Improvement</b>(<i>PMI</i>): included four lines of action: to make better public services, to increment public sector productivity, to reduce costs by streamlining resources efficiently and optimally, with a strong focus on results and performance indicators</li> </ul>

**Table 11: Examples of broader institutional forces in the trajectory of the case**

These discourses—as I have suggested in the theory chapters and the narrative of the case— do not appear in a vacuum. In addition to the pressures to do better in international rankings (i.e the World Bank *Doing Business* ranking), broader institutional discourses at national level (i.e. Mexico’s National Development Plans, and modernisation programmes) use vocabulary that promoted and inculcated public values related to technical efficiency, parsimony and productivity as well as a business-like approach.

the achievements in terms of reduction of compliance costs (i.e. travelling) for businesses, and gains in internal efficiency measured in reduction of processing and response times.

<sup>78</sup> In addition to analysis of intertextuality (see methodological chapter), I have conducted a number of word cruncher analyses of key government texts that, although preliminary, are useful to illustrate this point. The qualitative software that I use for my data analysis--Atlas.ti-- offers a Word Cruncher tool, which counts all words in a selected document. I paid particular attention to the results of the word cruncher of the 1999 document that explains SICEX (“SICEX: A history of success”). The analysis shows that the word *efficiency* (and related adverbs or verbs) appeared at the top of the list of words resembling public values (25 times), followed by the word *security* (18 times); the word *quality* appears in third place (14 times). The other documents (i.e. Memoirs 2006, the Presidential Decree) did not yield to such obvious results and will need further analysis.



I refer here to the institutional programmes covered in the previous chapter, such as *PROMAP*, the *Good Government Agenda*, and the *Special Programme for Management Improvement*. For example, the fact that SICEX pursued the decentralisation of procedures is concomitant with PROMAP's objectives for "decentralizing functions and not concentrating powers, so that regional development and economic decentralization is promoted, public services are improved, costs are lowered, and decisions are made where required, in order to provide a better service for the population" (SECODAM 1995, pp N/A).

The importation of business sector techniques within the public administration—a typical claimed characteristic of NPM—has been also apparent since the early days of SICEX. Narratives from the field confirm the emphasis of the technical efficiency discourses (emphasis added):

For the current Minister [year 2009], who has worked for the **private sector** for many years, the use of **technology** is a constant to **increase productivity and competitiveness**. These are the objectives we want to achieve in the Ministry. Those are the **motivators** and the **actual reasons** to use technology in the public sector. *Main IT Advisor to the Minister*

We need to be more **efficient** in our duties. We need to be able to perform **as e-business companies** do. That's what is crucial for competitiveness. *Area Director, Ministry of the Economy*

This vocabulary is also echoed by representatives of companies in the trade sector. When asked about the overall benefits that the Single Window would bring to Mexico, a partner from Deloitte in Mexico said:

There are a number of different benefits from the Single Window... we can say that the overall benefit is an **increase in Mexico's competitiveness**... But then, you have a **varied range of benefits**... For example, the **reduction of costs** to comply with trade procedures... now, some procedures are going **to be cheaper or even free** in some cases... (...) you also have more **agility and speed**... **times of response are reduced**, because many trade procedures will have been **eliminated** or **simplified**, which translates **in a slimmer bureaucratic structure** for the government. *Foreign trade Partner, Deloitte Mexico; interview in Radio Formula, March 2012 (Emphasis added)*

Other references to business-like vocabulary within government have been prominent over the years of both projects—SICEX and the Single Window. For instance, references to business process reengineering (BPR) exercises go back to early days of SICEX (1995), and continue to be a recurring theme within the developments of the digital Single Window. In a similar fashion, total quality management systems (TQM) were in vogue during the early phases of the project, although lately slightly abandoned.<sup>79</sup>

So far, I have showed examples of what constitute general findings in the data; a common and prominent vocabulary on technical efficiency that has been promoted over time. I now turn attention to the ways these discourses have been materialised and consumed.

### **Consumption and materialisation**

One of the most salient features of introducing technologies in the case—from the novel database in 1995 to the current Single Window—has been the facilities and gains from the automation of tasks often classified as ‘information work’ (Fountain 2001, p.38). The analysis of the texts suggests a direction towards well-known functions of ICT and networked technologies within public sector organising. The Mexican government seemed quite aware of the “viable” opportunities for collaboration and coordination at distance that new ICT could bring for the administration of trade procedures and trade regulations more in general. In the case of SICEX, the use of technology proved helpful for reducing waiting times, and accelerating processes via its automation features (see section 5.5.1 of chapter 5). The design and preparation of the Single Window offer further examples on the ways the discourses on technical efficiency, productivity and parsimony internalise (and are internalised by) technology. The Single Window has a number of technical features that aim at addressing directly the quest for costs reduction, parsimony and productivity of trade regulations. Bearing in mind that the technological artifact—Single Window—is still under way, one example should suffice to illustrate how technology has served to push the values associated with technical efficiency much further. The next table presents a comparison

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<sup>79</sup> See my previous footnote; references to quality and total quality systems were very explicit in the early phases of SICEX. They then become abandoned. I expand more under the cluster of robustness.

across relevant productivity indicators of trade procedures before and after the Single Window.

Indicator	Old (SICEX)	New (Single Window)	Change
Number of procedures	54	22	-60%
Data entry points	770	435	-44%
Average waiting time	15-20 days	1-5 days	
Average number of requirements per procedure	104	61	-41%
Total number of activities	127	25	-80%
Total number of tasks	867	282	-67%

**Table 12: Quantification of simplification of procedures. Trade regulations administered by the Ministry of Economy**

Source: ME. Note: trade regulations of ME represents 55% of all procedures in foreign trade.

These numbers suggest that, on average, the Single Window eliminates several trade procedures, allowing also for a great deal of automation. This means that, all other things held constant, the Single Window reduces substantially waiting and processing times of trade regulations, as well as decreasing their associated compliance costs (i.e. travel costs). A case in point are the new and automated procedures to obtain a certificate of origin, which represents the largest group of trade regulations that the Ministry of Economy administrates. A certificate of origin (hereafter COO) is a document used in international trade to get the duty free benefits for a trade agreement (i.e. within NAFTA).<sup>80</sup> In its current format—before entering into the Single Window processing—in order to obtain a COO, businesses are required to fill in different forms and attend the government office at least four times. The Single Window reduces the number of visits to only one, which potentially indicates a first reduction of costs (transportation costs). In addition, by automating the majority of the processes, the Single Window potentially reduces the waiting time from days to the actual time it takes to fill in the data on the web portal.<sup>81</sup> Furthermore, some countries have already signed agreements with Mexico to accept COOs in digital format (i.e. Colombia), which means

<sup>80</sup> As Mexico has signed a great number of trade agreements, the COO are very important to get trade benefits such as a tariff exemption or a quota.

<sup>81</sup> On average, pilot tests reported that it takes about 25 seconds to load a screen and from 2 to 5 minutes to upload a document. For a COO, it may take up to 20 minutes to complete the whole process. Data: webinar March 2012.

that the use of paper is eliminated completely. When otherwise, the government decided to cover the costs of issuing a paper-based COO.<sup>82</sup> The next table provides detailed examples on COO simplification and other similar trade procedures that the Ministry of Economy administers.

Trade procedure	Response time (days)		Type	Reduction
	Old	New		
1 Questionnaire registry	2	1	Manual	50%
Certificate of origin	1	Actual data capture time	Automatic	N/A
2 Drawback (tax returns)	10	Actual data capture time	Automatic	N/A
3 Imports/exports quota (worldwide)	7	5	Manual	29%
Imports/exports quota (worldwide)	7	Actual data capture time	Automatic	N/A
4 Import and export permit	5	3	Manual	40%
Import and export permit	5	Actual data capture time	Automatic	N/A

**Table 13: *Estimated gains in efficiency and productivity - selected trade procedures***

Source: ME 2010. Note: trade procedures may involve different activities. For example, the COO requires first submitting a completed questionnaire; and that is why the rows show two different procedures. The column “old” and “new” show the average response time (days) that before and after the use of Single Window respectively. The column “*type*” distinguishes between possibilities of decision-making; manual indicates that a visit or authorisation is needed from a public servant; automatic means that, as long as the submission meets the system rules, response is given automatically with no need to further assistance.

Evidence from pilot tests shows concerns with the speed of the system. During a course offered by customs agents in Mexico City, a real time import operation crashed at least three times before it was possible to finish with the entire operation.<sup>83</sup> While no further data is available at the moment, concerns with the speed operation and the system robustness were raised by users (I expand more on this in the robustness cluster).<sup>84</sup>

<sup>82</sup> Due to regulations, for example, the EU requires the COO in printed form; since 2010, Mexico has been issuing and accepting fully digital COO with its Colombian partners.

<sup>83</sup> Reports on the “Ventanilla Unica” facebook page; <http://www.facebook.com/VUCEM>. This page does not belong to the government, but to a group of custom agents and trade users.

<sup>84</sup> I draw here on concerns raised in blogs and newspaper articles, as I could not get access to further data from the government yet. I am not suggesting the government is unwilling to provide this data; they have been particularly helpful and collaborative with all my data inquiries.

In terms of internal efficiencies, the government claimed explicit gains: an optimisation of human resources of 21%, which represents about 1.25 US\$ million in administrative savings for all the ministries involved in the Single Window, and 43 US\$ thousand for Customs annually.<sup>85</sup>

### **Summary of the cluster**

There has been an extensive and systematic use of vocabulary that is related to technical efficiency in the design and pre-implementation phases of the Single Window. I have shown that this pattern is also similar in the earlier and smaller scale project (SICEX). Even further, the discourses in this cluster are well mapped within the contextual priorities related to competitiveness and openness to trade that Mexico has promoted for the last 25 years. In terms of consumption, the discourses on efficiency, parsimony and business-like approach have been materialised in the Single Window—as well as in SICEX in due time—by using automation and changes in regulation accordingly. Automation, in turn, has been highly dependent on standardisation, formalisation of rules and an intense work on process redesign, which leads us to the next cluster.

#### **6.3.2 Legality, justice and accountability**

This cluster is perhaps the most difficult to grasp, given the ambiguous character and multiple relations of the implicated public values within this group. The notion of accountability, for example, is well known for being an elusive concept (Bovens 2005, 2007); the same applies to fairness or justice. What is fair, for example, depends on the socio-political context, value and moral judgments of a given group (i.e. Bozeman 2000, 2007).<sup>86</sup> To deal with these issues, I elaborate on the discourses on public values and technology in this cluster into three *related* themes: (i) legality, the rule of law and

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<sup>85</sup> These numbers are based in actual human resources costs that the Ministries dedicate for the actual administration and management of trade procedures, which are 5.1 US\$ million for all the Ministries and 348 US\$ thousands for Customs. Source: Customs figures, internal report (Hernandez, 2011). The take up and usage of the Single Window (see epilogue of chapter Five) serves also as proxy for its effectiveness.

<sup>86</sup> Mingers and Walsham (2010, pp. 848–9) touch on similar points when they review the complexities of dealing with pragmatic, moral, and ethical issues on IS research; while in theory it is possible to elaborate on the distinctive aspects of each category, in practice, things are not so clear cut.

procedural fairness, (ii) internal accountability of public servants, and (iii) distributive justice. I separate the themes for a better grasp of the argument, although I will cross-reference them when necessary.

### **(i) Legality, the rule of law and procedural fairness**

#### **Content/Discursive features**

Legality generally refers to the fundamental principle that the relationship between public administration and the citizen should be regulated by law instead of the arbitrary exercise of power or discretionary administration (Beck Jørgensen and Bozeman 2007, p.368). Within this sub-cluster, values such as the rule of law and the protection of the individual rights as well as equal treatment are related in a systematic fashion. Families of words that resemble these values in the texts correspond to “legal certainty”, “transparency of procedures”, “clear rules and regulations”, “homogeneity of decision criteria”, and “adherence to law” (in Spanish, *apego a la ley*—a phrase that describes that a process is legal). In addition, I also use the notion of *procedural fairness*, a concept that is used in the management literature on trust (Culnan and Armstrong 1999, Brockner *et al.* 2000, Brockner 2002). The notion of procedural fairness is concerned with the way processes and rules are used by a decision-maker. Thus, a fair procedure would require a lack of bias, clear criteria to support a decision, and a hearing appropriate to the circumstances.

The first paragraphs of the Decree offer a glimpse into these values, although it is rather less explicit if compared to what I have just discussed for the case on technical efficiency. For example, I have already shown that the use of the phrase “among other improvements” in paragraph 5 of the Decree is an implicit ground that may well relate to the use of technology as an opportunity to improve legality and the rule of law. In a more explicit fashion, paragraphs 2 and 4, mentions legal certainty, transparency, equity and security—all words resembling the spirit of this cluster:

These days, foreign trade demands **measures of trade facilitation** and commercial simplification that **grant legal certainty** and the reduction of transaction costs (...);

In addition (...) **the use of information technologies** in the operation of foreign trade offers a **transparent** and **equitable** service, and strengthens the **security** for the users;

So far, our textual entry point (the Decree) is relatively brief in terms of legality and related values, but this does not mean that these values were marginal in the case. In the call for tenders for the Single Window that the government put forward in October 2010, the fourth objective specified the following<sup>87</sup>:

The objectives of the Single Window are (...):

**To increase legal certainty:** To ensure transparency in the administration; to develop a fair and equal Customs framework; to increase the effectiveness of the rule of law.  
*Terms of Reference, International Public Tender of the Mexican Single Window for Foreign Trade, September 2010*

If taking the textual object (the Decree) as its face value, legality could be seen as marginalised, but the history and origins of these discourses offer more details.

### Conditions of Production

Preoccupations with enforcing legality have been very prominent in the discourses of broader modernisation reforms that have shaped both technologically induced projects (SICEX and the Single Window), as table 11 has shown before. A further example of the presence of discourses on legality and associated values is offered in the starting point of the text that describes the origins of SICEX back in 1995:

In conformity with the objectives of the National Development Plan of 1995-2000, which establish the need to broaden the **legal security** for the companies throughout actions of deregulation and administrative simplification, oriented to improve the [administrative] efficiency (...) and to eliminate the **unnecessary discretionary acts** from the authorities and the **excess of bureaucratic procedures**, (...) several actions have been put in place, such as the implementation of a novel information system [SICEX]

In the same document, the government stated that increasing transparency was the second most important benefit listed and achieved when SICEX was designed and implemented during the 1990s.<sup>88</sup> *Transparency* can be understood in the text, and in this occasion, as the existence of clear and standardised rules, shared across all federal

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<sup>87</sup> The document addresses four objectives: (i) to reduced time and cost, (ii) to improve logistics, (iii) to eradicate corruption, and (iv) to increase legal certainty. These objectives are also crystallised in the benefits published in the Single Window website, available here: [www.ventanillaunica.gob.mx/envucem/AboutVU/Benefits/index.htm](http://www.ventanillaunica.gob.mx/envucem/AboutVU/Benefits/index.htm)

<sup>88</sup> Source: *SICEX: A history of Success in Foreign Trade Regulations*, Ministry of the Economy, 1999, p. 20.

agencies, for decision making. Narratives from the field expressed similar value associations. When asked about the most important value creation delivered by the system to administrate trade procedures, a senior official says:

The most important [value] is [legal] **certainty**.. this is, that the dude knows he is going to seat with certain information in a certain place, and in exchange and at a given time, he is going to obtain the [foreign trade] **authorization in a clear and secure way**, without surprises. *Director, International Trade Commission, Ministry of Economy (#8)*

Although the vocabulary presented here is not necessarily using the words legality or fairness, the priorities and the broader institutional context in which SICEX was launched, implemented and used, meant “leaving the *albur* to entering a world of clearer rules”<sup>89</sup> (interview #15 with senior government official).

In sum, concerns with legality and the rule of law as well as procedural fairness have been prominent discursive features over time. As suggested earlier, efforts to improve legal certainty—and legality, more broadly—come from existent institutionalised discourses at national level. Since 1990s, Mexico has put forward a series of modernisation reforms to incrementally change from a society governed through the exercise of personal discretion into one based on legal norms (Pardo 2009, Philip *et al* 2011, p.11, also section 5.2 of this thesis). Despite the reforms, perceptions on legality and the rule of law still appear as a weak point in Mexico. According to Kaufmann *et al* (2010), Mexico ranks quite poorly in the rule of law indicator when compared to other countries and the Latin America average (see figure below).<sup>90,91</sup> This is, on its face, a result that can lead us to be at least suspicious about the level of enactment of these values. In other words, the discourse on legality has been in the government texts (and especially in modernisation reform plans) for many years, without necessarily obtaining improvements.

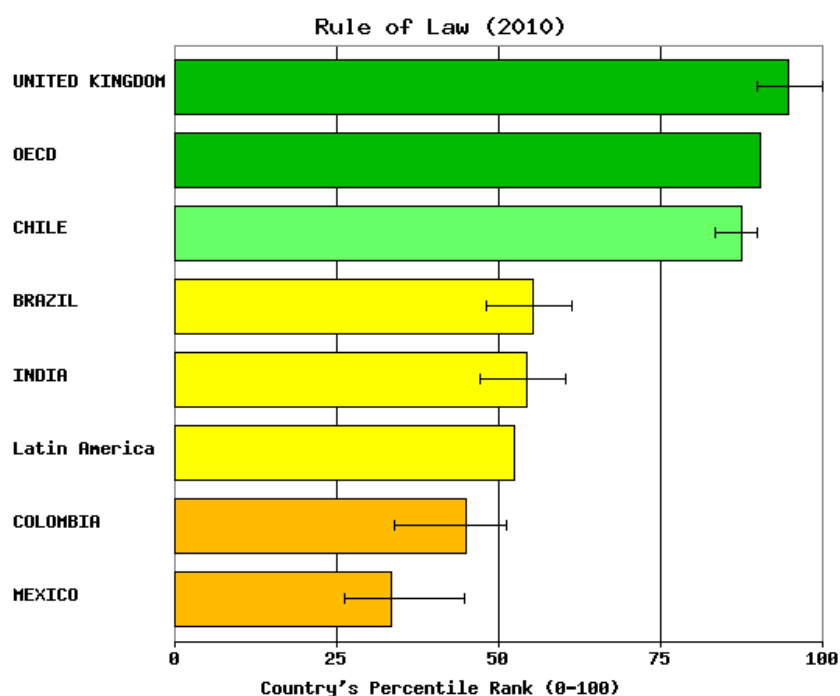
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<sup>89</sup> In Mexico, an “*albur*” is a double entendre in which one of the possible meanings usually carries sexual undertones. In the case it is used here, it refers to the lack of a clear meaning and obligations of procedures.

<sup>90</sup> Similar results (low scores in legality and the rule of law in Mexico) are reported in the Sustainable Governance Indicators in 2009 and 2011. See Philip *et al* (2011) and Bertelsmann Foundation (2009). Available at: <http://www.sgi-network.org/index.php>

<sup>91</sup> The indicator “rule of law” measures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence (Kaufmann *et al* 2010).





Source: Kaufmann D., A. Kraay, and M. Mastruzzi (2010), *The Worldwide Governance Indicators: Methodology and Analytical Issues*

Note: The governance indicators presented here aggregate the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, and international organizations. The WGI do not reflect the official views of the World Bank, its Executive Directors, or the countries they represent. The WGI are not used by the World Bank Group to allocate resources.

Despite these ambiguities, one may recall that aggregate measures may not provide the full picture. In particular, it is important to recognize that the indicator constructed by the World Bank includes perceptions on the quality of police and likelihood of crime and violence, areas that have hampered efforts to enhance the rule of law in Mexico in recent years due to the ongoing drug war (Phillip *et al.* 2011, p. 11). The process of enforcing the rule of law is therefore uneven, and I shall discuss in what ways the discourses on legality have been interpreted and materialised in the design of the Single Window.

### **Consumption and materialisation**

Automation and standardised procedures can be considered good proxies for equal treatment and fair treatment, if fair is understood as a non-discriminatory handling of information and services. In other words, as long as rules are the same for everyone, fairness can be ensured. Initially, SICEX was a pioneer in creating baseline rules, and procedures for all. The next quote offers an explicit entry to this claim:

**Clear and transparent criteria for administrative decisions:** (...) it is indispensable that **decision criteria** to authorise or reject procedures are **written** into the system in an **explicit** and **simple** way. *SICEX: A history of Success in Foreign Trade Regulations, Ministry of the Economy, 1999 p. 1* (emphasis added)

In turn, the design of Single Window emphasises this functionality too. In line with the efforts to automate trade regulation procedures as much as possible, data suggests that the number of rules *inscribed* in the system has increased significantly. The next table summarises the quantification process that the government has concluded, as part of their process redesign.

	Trade procedure	Number of rules			
		Old	New	Difference	Change
1	Questionnaire registry	115	120	5	+4%
	Certificate of origin	28	54	26	+93%
2	Drawback (tax returns)	34	27	-7	-21%
3	Imports and exports quota (worldwide)	34	68	34	+100%
	Imports and exports quota (regional)	10	68	58	+580%
4	Import and export permits	19	61	42	+221%

**Table 14: Change in the number of rules-Selected procedures of the ME**

Source: ME.

The table shows that the number of rules, that is to say, the number of ‘decision steps’ inscribed in the software, are significantly greater than before. Of course, the increase in a number of rules does not guarantee the full elimination of discretion or the complete achievement of legal certainty. The argument here is that both efforts—the reduction of the number of procedures and the concomitant increase in rules—are the consequence of the government’s longstanding efforts to assure legality via more transparent and clear rules for everyone (internal and external). As an example an Area Director from the Ministry of Economy explains during a webinar in February 2012:

There are lots of advantages in terms of resolutions that **you don’t see..** but I can assure you that we have set up many internal ‘locks’ [in the software] (...) the internal responsibility is much stronger (...) [the Single Window] gives parsimony and order to our internal process, but it also makes the process much more efficient. *Area Director, SE (webinar, 2012)*

Another way to see the materialisation and consumption of the discourse is by the issuing of new laws and regulations itself. As a senior public servant puts it:

In public administration, you can only do what you are specifically empowered to do, via a Law or a Decree. *Former Deputy Minister, Ministry of the Economy (#15)*

The Single Window entailed a number of legal changes, being the Decree itself a good example of it. In addition, laws and regulations have been put forward to allow for changes in rules. It was sometimes technology itself the one driving changes. For example, a project leader from Customs reflects on the operation of SICEX:

In general, it's easier to change the [legal] regulations than the system... but it has happened the other way around; sometimes we were ready to make changes to the system, to upgrade it, and the regulations were not there yet... *Director/Project Leader, Customs (#17)*

Other interviews suggested similar viewpoints. For example, when I talked to technical areas in the Ministry of the Economy, some actors at first suggested that the main barrier was to get the regulations approved to release the technical updates, and then provided examples on the pressures they received to get things done in few hours because a new regulation was passed.<sup>92</sup>In sum, these examples show how technology internalises and is internalised by legality and further modernisation contexts. The implementation of the Single Window experienced delays precisely because of absences of legal norms supporting certain phases of its operations.

## **(ii) 'Internal' Accountability: responsibility and behaviour of public managers**

Standardisation and rationalisation of procedures were many times mentioned as ways to eliminate arbitrary and unnecessary discretion of public servants. This second subgroup elaborates on a particular aspect of accountability and public servant's unnecessary discretion.

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<sup>92</sup> Interviews with senior officials and middle managers in the Ministry's IT Department (#9, #11 and #20).

## Content/Discursive features

Accountability is best regarded as one of those golden concepts that no one can be against because it conveys an image of trustworthiness and transparency (Bovens 2007, p.448). Yet, as it is the case with notions of fairness or justice, accountability remains elusive as a concept and has little substance without its institutional and historical context (Stone 1995, Mulgan 2000, Bovens 2005, 2007). For example, an actor can be accountable or responsible to a wide range of other subjects at the same time (Beck Jørgensen and Bozeman 2007, p. 364), and for different reasons. In turn, the *actor* can be either an individual (i.e. an official or civil servant) or an organisation, such as a public institution (Bovens 2007, p. 449). For the purpose of my analysis, I shall be looking particularly at the notion of *administrative accountability* (Stone 1995), that is to say, the values associated to the *behaviour of public servants in their administrative functions* of government. In this sense, when I coded accountability, the most common references were grouped in transparency of processes, honesty, professionalism and competent behaviour of public servants as well as ideas on vertical accountability<sup>93</sup> of public servants to central government. These ideas would be therefore more closely associated to what Bovens (2005, p.187) refers as ‘organisational accountability’ and ‘responsibility’.<sup>94,95</sup> In turn, this sub-cluster is very close to some ideas that I have already discussed in the group of legality and fairness, such as the formalisation of rules and transparency of criteria. While there are unavoidable overlaps, the focus here is more related to the role of public servants as administrators of formalised transactions (procedures).

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<sup>93</sup> In projects that involve the participation of different government agencies (and contractors), Sullivan (2003) makes the distinction between vertical accountability upwards to central government, downwards to citizens, and horizontal accountabilities to partners. In the author’s terms, I would be referring mainly to the first type of accountability (vertical upwards to central government).

<sup>94</sup> Organisational accountability refers to the relation between public managers and their superiors, the latter being those that will ask the former to account for their assignments. This, in general terms, involves compliance with the organisational rules and procedures as well as a reliance on a strong hierarchical relationships. It is usually referred as an ‘internal’ type of accountability as this form of accountability is not usually available to the public at large (Bovens 2005, p.287).

<sup>95</sup> In Spanish, there is no exact equivalent to accountability; responsibility is usually used as a synonym.

## Conditions of production

References to increasing vertical accountabilities, and explicitly in the form of “reducing discretion”, has been a common and salient discourse in both projects (SICEX and the Single Window). I have already presented some of these references within the analysis of legality. For example, the need to *establish clear rules* appeared very often accompanied with the idea of *reducing discretion*. I shall provide a further example, this time from SICEX, which illustrates this common finding:

[SICEX] includes certain decision criteria, and in some cases, it can make **automatic** decisions. Thus, using certain parameters, **it is the system rather** than the **public servant** who **decides** if the procedure gets **authorised**. *SICEX: A history of Success in Foreign Trade Regulations, Ministry of the Economy, 1999* (emphasis added)

There is a common pattern that relates *transparency* and the need to *reduce administrative discretion* in trade regulations with technological functionalities, which have been present in the trajectory of the case. The reasons for its discursive production and consumption are similar to those that I have already discussed in the legality subgroup: technology provides not only automation but also a record of activities and data that can be traced and monitor over time, and therefore forms of control. Ideas on transparency and control appear, thus, intertwined. Moreover, transparency *is* control. For example, back in 1999, the government claimed that the electronic platform had achieved the following benefits:

CONTROL. There is a log of operations to **audit** in the system each of the resolutions (...), that is, **we know exactly who did what** and at what time. That allowed us to go deeper with our decentralisation strategy (...) as well as to perform a **strict management control** at a national level. *SICEX: A history of Success in Foreign Trade Regulations, Ministry of the Economy, 1999 p. 21* (emphasis added)

## Consumption and materialisation

There is no doubt that SICEX have conducted a big step in providing more transparency and internal visibility of certain decisions. In the initial phases, SICEX achieved mechanisms of transparency that were very innovative. Such is the case for the use of magnetic cards to clear procedures between Customs and the Ministry of Economy:

[**The magnetic cards**] worked similarly to that of a public telephone; it allocated certain credit that you could use for a given foreign trade procedure... Now it seems obvious, but at that time it was not [1998]... The card was indestructible and it had a cool 'logbook'.. **Anything** that you'd have done would be **recorded... even those things that you shouldn't be doing**. *Former Deputy Minister, Ministry of the Economy(#15)*

SICEX provided a record of trade procedures in the system as well, but according to the government officials, it did not provide space for stating in detail the reasons and justifications that would justify certain approvals, rejections or authorisations. This explains why the Deputy Minister (and champion of the Single Window project) argues:<sup>96</sup>

[2009] We need to do much better. We have a great amount of [trade] programmes, and it is **really complicated to know** under which **conditions they were granted** or under **which rules**... Who knows where that information is... When you have this information in electronic systems, it becomes much easier to review that everything was done in adequate terms.. *Deputy Minister, Ministry of the Economy (#19)*

What these quotes illustrate are a number of tensions between honesty, control, internal accountabilities and flexibility to deal with complex issues. The central *vs* local tension can be seen as a corollary of the discourses on internal accountabilities, and the shifting power relations. That is, SICEX ought to decentralise the administrative procedures, at least in practice, giving more control over decisions to their local offices. A case in point is the total decentralisation of procedures that the Ministry of Economy achieved in 2002. With the design of the Single Window under way, a shift in control “back-to-centre” becomes apparent.

As far as honesty and integrity of public servants is concerned, there were conflicting perceptions about the level of corruption (usually an intentional avoided word) in the public service. Higher officials usually reported high trustworthiness to their own

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<sup>96</sup> From a CDA perspective, this paragraph shows why it is important to zoom in into the relation of words. Taken it in relation to the excerpt I quoted earlier from SICEX (Control), both paragraphs have very similar vocabulary and similar subjects although expressing very different suggestions.

people<sup>97</sup>, despite the fact that public perceptions about the level of corruption in government are worst in Mexico than the average for the Latin American countries (Kaufman *et al* 2010). It is not my aim to argue about honesty and corruption *per se*, but rather to emphasise that the discourses related to internal accountability and responsibility highlight the potential of electronic technologies to imbed rules and to reduce spaces for discretion as well as to shift (or enhance) the points of power in certain areas of government action.

The tensions in accountability versus flexibility can be important. Let me go back to SICEX. While within the old system the decentralisation of trade procedures included rules and automated mechanisms to avoid discretion, the technological platform gave certain flexibility to the local officers of the Ministry. The new Single Window, on the other hand, takes automation and control much further (see numbers shown in table 14). Not only because the new technological system behind the Single Window automates and reduces the flexibility of actions in a considerable number of procedures, but also because it does so in a larger number of government agencies. While there is no available disaggregated data on corruption per administrative office, informants usually suggested that the perceived discretion (corruption) in the Ministry of the Economy is nominal, particularly, at the central level.<sup>98</sup> On the other hand, for agencies like Customs—one of the worst public agencies in terms of perceptions of corruption—the expectations to reduce spaces for discretion are rather high. Of course, corruption is a dialectic activity and it may not be considered as the sole responsibility of government officials. Indeed, in many cases, insights from interviews suggested that tighter rules and transparent systems—enabled by networked technologies—*protected* their own public servants from the possibilities of being bribed.<sup>99</sup>

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<sup>97</sup> Interviews with senior officials (#15, #38, #39).

<sup>98</sup> I have searched and reviewed different available indexes on perception of corruption in Mexico (INEGI, The World Bank Governance indicators, and Transparency International). While useful, these indexes usually provide a general indication of corruption at national and state level. I gather additional views from relevant stakeholders, such as public servants that have worked for different agencies including the Ministry of the Economy. These informants usually suggested that corruption in trade regulation—understood generally as bribery—are not a cause for concern in the Ministry. In addition, I also reviewed available audits performed to SICEX in the period 2004-2006, with similar findings.

<sup>99</sup> In some instances, local government officers could no longer take control over certain administrative decisions. For example, in certain Mexican borders, Customs installed a system of automated doors controlled from the Central offices as a way to avoid extortions and violence in local offices. (Interview with stakeholders of the Single Window, #39).

The tensions within this cluster also provide useful explanations for resistances. The central government was interested in standardized and homogeneous information that they could use to control if local agencies were complying with the law. In relation to rules, discretion and resistances, this quote serve to illustrate this point:

When you do not have rules, administrators can do whatever they want and nobody will punish them... Then, to convince administrators that they need to follow rules, that with those rules they will be audited, and if they do not do things according to those rules they will be punished... well, who's going to like that! So, we did have strong personal resistances. (...) but then, little by little, everyone was using the system. *Former Deputy Minister, Ministry of the Economy (#15)*

This quote illustrates an interesting tension: technology and its standardised procedures bring the possibilities of centralised control and punishment; yet, even though the potential resistances and different workarounds, the system was rolled out and used.

### **(iii) Distributive justice: equality and SMEs**

#### **Content/Discursive features**

The last sub-group relates to the concept of justice. The Merriam Webster dictionary defines justice as “the quality of being just, impartial, or fair”. What is fair, or just, however, is subject to contestation and must be considered in the context of policy assumptions (Bozeman 2007, p.79), something I have already suggested in the legality theme. Related notions to justice are equity and equality. For example, justice may mean offering the same benefits to all (i.e. strict egalitarianism), or it can mean distributing more services or help to those groups in society that are underserved, disadvantaged or underrepresented (i.e. Andrews and Entwistle 2010, p. 686).<sup>100</sup> In light of the empirical materials, the notion of distributive justice in the case resonates with the latter view, that is, with the efforts to include small, medium and micro enterprises (SMEs) into foreign

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<sup>100</sup> The Stanford Encyclopedia of Philosophy contains detailed review on the different conceptions, definitions and debates on distributive justice (Lamont and Favor 2008). I use a rather simpler definition—here approximated as distributing services to the underrepresented—based on what it emerges from the production of the texts and the contextual features of the case. I also want to note that, in some cases, scholars seem to assume a rather univocal understanding; for example, Andrews and Entwistle (2010, p. 686) assume that equity is precisely distributing services to disadvantaged and hard-to-reach groups.



trade activities. SMEs are usually underrepresented in comparison to the big corporations that dominate the foreign trade scenario in Mexico.

### **Conditions of production**

The use of networked technologies to promote the participation of SMEs within trade has been explicitly cited in paragraph 4 of the Decree. This claim has not been a prominent discursive fact before the design of the Single Window. The reasons for this inclusion may be traced back to 2002, when the Mexican Congress passed a law for the promotion and development of SMEs' competitiveness (DOF 2002). In addition, given the fact that one of the champions of the Single Window is also the agency in charge to lead the policies for SMEs competitiveness, this finding may not be surprising. According to the government, the design of the Single Window helps to include SMEs into trade by helping them to reduce material and transport costs to comply with trade procedures. But more importantly, by using a web-based platform, it puts all companies in equal terms: "You only need an internet connection"<sup>101</sup>.

### **Consumption and materialisation**

Opinions of actors that know the sector suggest that the discourse on redistributive justice may be less materialised than the others. A senior government official of the Ministry provides an example of the contradictory nature of the previous statements:

When you are talking about foreign trade [in Mexico], you are talking about an **elitist** material... they are very big companies... **SMEs do not have the intention**, because of lack of buying capacities or costs... so, those who enter into foreign trade are big corporations.. and these big companies were the ones asking for less discretion, more certainty and transparent rules. *Former General Director, Ministry of Economy*

This claim is echoed in a media article, which reports that the SMEs in Mexico face a number of additional barriers to engage in foreign trade activities (Camacho 2011). These barriers are mainly related to lack of access to relevant information and market intelligence, such as proper tools to approach a foreign market, the right assessment of

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<sup>101</sup> Interview with senior public servants from the Ministry of Economy (#26, 40).

available financial resources and proper knowledge on how to expand distribution channels. In turn, the article adds that “it is not lack of quality products but lack of information and resources to acquire market intelligence” what prevents more SMEs to get on board international trading activities.

In line with concerns for SMEs, recent media reactions also pointed out that the implementation of the Single Window would produce negative effects on the SMEs operations. SMEs represent 22% of the total export companies and only 5% of the total value of exports. These companies, it is been argued, may face higher costs rather than reductions when using the Single Window. To start with, companies must have a computer with internet connection. A consultant from one of the big international firms mentions that “[the Single Window] is going to cost money (...), we foresee that costs may vary in between 7,500 to 75,000 US\$”, which is a particular high burden for SMEs (Camacho 2011).

Analyzing the different voices that are versed in the text of the Decree (and other prominent texts of the government) provides a further useful point. While it is clear that the Decree (as well as other the government texts under analysis) reflects the voice of the Executive, it also represents the position of big and multinational companies and those sectors that benefit from trade in the country, leaving SMEs as a second priority at best.

In sum, the effects of the Single Window are yet to be seen in this respect. What it can be argued, though, is that references to inclusion of SMEs (or other underserved actors) into trade have not been common in previous phases of SICEX. The discursive features, and the way the Decree was produced, may suggest that a genuine preoccupation with equality is put forward in the project. At the same time, the ways this discourse have been materialised suggests two interpretations: either is purely rhetoric (because SMEs won't engage in trade anyway), or that the Single Window may indeed contribute to engaging more SMEs into foreign trade and the digital economy. At least in the short run, it appears that the Single Window creates even more inequalities: big companies are better prepared to act and pay for complying with the newer digital services (i.e. COVE).

## **Summary of the cluster: legality, accountability and justice**

The related public values in this cluster shares common discursive feature: an emphasis on the need of clear and transparent rules, notion of inclusion and fair treatment and implicated notions of fairness and distributive justice. The insistence on transparency as a goal of electronic information systems—either as a tool for procedural fairness or as a measure to enforce surveillance and internal accountability—has been paramount within the case. Public values such as legality and accountability of public servants are as prominent as those in technical efficiency. Matters of justice, and specifically, distribute justice, are more ambiguous and less salient, yet present in textual features. In general, the conditions of the production of these discourses are well grounded in a preoccupation with broader agendas of democratisation in Mexico, such as a shift from governing through the exercise of personal discretion to a system more based on legality and common legal norms. The materialisation and consumption of these discourses, in turn, has suggested more ambiguous interpretations.

### **6.3.3 Resilience and robustness**

#### **Content/Discursive features**

Beck-Jørgensen and Bozeman (2007, p.366) suggests that a public organisation that based its organising on values such as robustness, adaptability and reliability, may not be fun but rather trustworthy. This idea is also associated to what Hood (1991, p.14) describes as lambda-type administrative values. If robustness and reliability are placed at centre stage of an administrative design, “the central concern is to avoid system failure, ‘down time’, paralysis in the face of threat or challenge” (Hood 1991, p.14). Technology, in particular, its infrastructure, security and way of functioning, is germane to this cluster. In this cluster, I pay particular attention to those measures that have been put in place—discursively and operationalized—as back-up plans, also referred in the case usually as “contingency plans”.

#### **Conditions of production**

Paragraph 4 of the Decree offers our first indication on the presence of a discourse about robustness:

(...)the use of information technologies in the operation of foreign trade (...) strengthens the security for the users;

The expression entails an ambiguity: the idea of security for users is not clear from the point of view of who users are, and what type of security they are referring to. Security may be implicated in terms of legality (i.e. security as protection of the rights of the individual) as well as protecting public sector employees from abuses of imbalance power (i.e. lobbying companies). A different read could lead to understanding ‘security’ as a proxy for reliability and a robust system. The reasons to suppose so rely on the presence of concerns with system failure during the trajectory of the projects. For example, resilience, security and system robustness are contained in the following quote:

Once [year 2007] we **lost one hard drive**, and we were off-line for a couple of hours... it only lasted couple of hours, but it was **shocking**... that episode made us to designed new backup procedures... and we have been working in that line. *Director, Information Technology Unit, Ministry of the Economy (Emphasis as per the conversation)*

This quote illustrates that the loss of a piece of hardware—and its associated fears of bigger failure effects—triggered further actions to minimise potential future issues. My point is that even though the text of the Decree may place a minimal space for public values related to robustness and resilience, on many occasions, actors repeatedly emphasised the need to have a back-up plan and security measures. Concerns in terms of system failure were evident in interviews with public servants operating SICEX, in which potential technical problems that could emerge in the interconnectivity with Customs were emphasised. A project leader from Customs said:

Every time we have to install a new update [between Economy and Customs] is problematic and we have to **stabilize** it. If it were off-line, it wouldn't be a drama... But as we're online, if that thing doesn't work **we are in a big troubles**... We cannot allow that to happen. That **cannot happen**. *Director/Project Leader, Customs (Emphasis as per the conversation)*

The rationale for assuring robustness and systems integrity is quite obvious: foreign trade operations depend critically on the well-functioning of its information infrastructure—whether SICEX or the Single Window. In addition, there are many reasons to think that these concerns cannot be but bigger for the Single Window, given

the larger scale of the latter compared to SICEX. Within the texts of the Single Window, issues on security and resilience are presented in rather positive ways:

**Improved information security.** Using information technologies prevent damage or data loss, even in case of disaster. *Single Window website*<sup>102</sup>

The idea of information technologies as *secure* tools is somehow overemphasised in the quote. Protecting information from destruction or loss is only one aspect of information security, and while information technologies may help reducing potential information security breaches, they cannot eliminate them completely. Yet, the government discourse places the focus on looking at their benefits rather than risks.

### **Consumption and materialisation**

From the point of view of the consumption of these discourses, a shift can be traced when comparing SICEX and the Single Window. Given the larger scale of the Single Window, the government decided to build the Single Window using a public private partnership (PPP) contract. Among other components (i.e. process redesign, consultancy services, and providing the physical technological infrastructure), the contractor is the one that administers the Single Window, and obtains a payment per procedure completed. For the government, this is the way they can “secure” the system:

The contractor is interested in the **money**... they do have the interest in making the system work... It's simple... If [the Single Window] doesn't work, they don't get paid *Area Director, Ministry of the Economy*

The contract established clear performance indicators and tough penalties according to possible failures, which functions here as further evidence of the monetary incentives to make the system work. However, it is not yet clear who would be accountable for in case of disaster. The problem of accountabilities and outsourcing deals is far from resolved, despite the clauses that the contract may have included.

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<sup>102</sup> Available at <https://www.ventanillaunica.gob.mx/vncem/SobreVU/Beneficios/index.htm> Accessed: 22 May 2012.

The concerns with resilience and system robustness has been materialised in texts in the form of “contingency plans”. The way the contingency plan for the Single Window was produced and negotiated provides further clues on two related issues: first, that robustness is considered important; but even so, robustness may have been marginalised from the government priorities at the expense of releasing the system sooner rather than later.<sup>103</sup> By March 2012—just two months before the Single Window became mandatory—there was no agreed contingency plan yet and discussions were ongoing amongst the government and stakeholders such as customs agents and trade associations.<sup>104</sup> In fact, the contingency plan was released on the Single Window website on May 30<sup>th</sup> 2012, just few hours before the entry into force of the digital platform. In simple terms, what the contingency plan says is that, in case of failure or too-long waiting times, the government should accept the older paper-based procedures. Concerns from the private sector were also raised:

The digital [Single window] system will have serious **problems** because of the volume of transactions that it pretends to deal with, that is **not sufficiently prepared** for. *President, Association of Maquiladora Industry, Mexico (in the news)*<sup>105</sup>

The main shift in comparison to SICEX, I claim, relies on the outsourcing deal: from internal to external forces. If the system does not work, the private company is to blame. In SICEX, solving system failures was a matter of internal capabilities. Issues of information security such as confidentiality, integrity and prevention of data leaks are also left to the contractor.

A related finding of this shift relates to the relative abandonment of a *quality* discourse. Back in 1995, SICEX was built in a complementary fashion to a total quality management (TQM) system<sup>106</sup> that the government was adopting. During the 1990s, TQM systems were envisaged as useful tools for increasing government effectiveness and performance, based on spirit of the reinvention reforms (Gruening 2001, Moynihan

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<sup>103</sup> Political timings were very important for this to happen, given the upcoming election in July 2012 and changes in government that the main actors in the implementation process foresee.

<sup>104</sup> Interview with a project leader of the Single Window, March 2012.

<sup>105</sup> Source: Suarez, E., “La ventanilla unica sera rebasada”, *El Mexicano*, 22 May 2012.

<sup>106</sup> In brief, TQM is a management practice that focuses on continuously improving the quality of processes (or products, when applicable). It is based on the premise that quality processes and outputs are the responsibility of all actors involved in the creation or provision of services.

and Pandey 2005, p. 422). In particular, the Mexican office opted for an ISO 9000 certification, which is a type of quality management system, designed to ensure the quality of organisational processes via preventive actions. SICEX was complementary in the following ways:

SICEX is a basic tool to **consolidate** and **comply** with some of the **ISO 9000** requirements. *SICEX: A history of Success in Foreign Trade Regulations, Ministry of the Economy, 1999 p. 31 (emphasis added)*

Among other things, the ISO 9000 standard requires the organisation to document its procedures, to maintain a control of records and internal audits and to issue a Quality Manual with the organisation's quality policies. The implementation of SICEX contributed to the quality system in the following ways: it helped maintaining a record of the processes, ensuring that there is available data for auditing purposes and providing some level of statistics for performance purposes (i.e. number of procedures processes, analysed, types of responses, etc.).

Despite the acclaimed benefits and complementarity of SICEX and the ISO standards, the push for *quality* (in the sense I have described it) has diminished over the years. The reason may be found in the potential incompatibility of sustaining quality and at the same time achieving disparate goals. For example, during the period 2000-2006, while the Ministry was pushing for a paperless administration, the presence of quality checks ended in an increased number of required documents and more paperwork.<sup>107</sup> In other words, a focus with simplifying regulations via reducing the use of paper co-existed with pressures to assure quality and error minimisation via broader information checks. This contradiction has also been documented in other e-government programmes (see for example Margetts 1999), which may explain why parsimony and efficiency may be at odds with robustness. As a matter of fact, the word *quality* has been dropped from more recent texts, and there is no explicit reference to *quality* of services in the Decree either.<sup>108</sup>

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<sup>107</sup> When comparing a set of 5 administrative procedures, whilst all of them reduced the number of required activities (or steps) in the process, two of them resulted in an increase of supporting paperwork required to complete the regulation.

<sup>108</sup> I do not suggest that the government did drop the preoccupations with providing good and better services to their clients; on the contrary, the push for simplification of trade procedures as well as with enabling competitiveness denotes the government's effort to reduce unnecessary regulations in trade. In

## Summary of the cluster

Along the trajectory of the project, there have been explicit and implicit references to issues on resilience, robustness and security, mostly grasped in references to different contingency plans for both, SICEX and the Single Window. The reasons of the production of this discourse are related to the importance of trade in Mexico's economy. Thus, foreign trade operations are increasingly depending on the well-functioning of information systems. From the point of view of its consumption and materialisation, the discourse on robustness has shifted in two directions: an abandonment of a parallel yet obsolete total quality system, and the 'outsourcing' of robustness via a third party (the contractor). The Single Window just started operating by the time this thesis goes to press. As in the other cases, effects remain to be seen in this respect.

### 6.3.4 (Forced) Cooperation

#### Content/Discursive features

This cluster is perhaps the least obvious although it remains an important one, particularly, because it reflects on the challenges of organising technology-led processes and its implications for broader structural reforms. The idea of *cooperation* as a value is defined as the opposite of competition into the public administration, the latter understood as one of the market mechanism that the NPM seek to promote as a way to increase public sector performance (Andrews 2011, p.286, Christnesen and Laegreid 2011, p. 4). In turn, cooperation is traditionally associated to a mechanism for coordination within government agencies (Beck Jørgensen and Bozeman 2007, p.366). My evidence shows that in this case, while agencies do indeed cooperate, there is an

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terms of discourse features, the abandonment of references to quality should be seen as a distance to TQM approaches.



*obligatory modality*<sup>109</sup> presented in the texts that suggests the co-existence of two processes: a longstanding collaboration and a *forced* consensus.

I shall begin once more with the excerpt of the Presidential Decree, and a closer look to paragraphs 5 to 9, as starting point:

- 5 **It is convenient that** the competent authorities concerning foreign trade coordinate and implement actions of simplification, automation and improvement of foreign trade processes (...)
- 6 **In conformity with the Foreign Trade Law** corresponds to the Federal Executive, through the Secretary of the Economy, **to coordinate the participation** of the other agencies of the Federal Public Administration (...)
- 8 Based on the trade simplification and facilitation policy that has already been instrumented (...) the **Federal Executive Branch** under my duties **considers necessary** to issue, throughout the present Decree, the general dispositions for the establishment of the Mexican Digital Window of Foreign Trade (...)
- 9 For the above effects, **it is considered convenient to establish stages of implementation** for the referred Digital Window (...);

The use of the words “in conformity” with the Law (par. 6), “considers necessary to issue” (par. 8) and “it is convenient” (par. 5 and 9) are legal utterances that refer to rather *obligatory* statements. For example, instead of saying ‘it is convenient’ the text could have said ‘it is mandatory’ that the agencies coordinate actions toward trade regulation simplifications. In other words, although they may look subtle, the way the Decree was produced opens up some further interpretations. Let me expand.

### **Conditions of production**

The design and implementation of the Single Window rely on inter-agency collaboration; collaboration constitutes a *necessary* mechanism for the project to have any viable future. The voices that are being reported in the Decree suggest a monological, or consensual, state of affairs. I have expressed earlier on that the language of politics generally implicate a discourse of contestation (se methodological chapter). Even so, the

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<sup>109</sup> As I explained in the methodology chapter, the modality of a clause or sentence reflects what people commit themselves to when they make statements, declarations, make demands or offers (Fairclough 2003, p.165). I look at the modality of government texts to trace the discourses on consensus.

text of the Decree exposes a version from a unified voice or protagonist. It may be literally the President's voice and the agencies involved in trade. In this case, the conditions under which Decrees and executive orders are produced reveal that the main voice in the text represents those who are leading the initiative.

A unified voice is the one of the Ministry of Economy<sup>110</sup>, whose team has a long history of mutual adjustments and negotiations with their counterparts in Customs. At the same time, the Ministry of the Economy's mission is to serve and promote the industry, that is, the companies involved in foreign trade operations, which practically means big and multinational companies. Customs, on the other hand, are better defined as guardians of the Mexican borders whose goal is to invigilate and secure lawful trade operations.

On many occasions, informants suggested that the main actors of the project (Customs and the Ministry of the Economy) had goals that were at odds with the overall aim of the project. These contested goals refer to the battle between *facilitation* of trade versus *control* that appear continually in different phases of the project. In May 2010, when the project design was advanced and closer to its formalisation, an Area Director and project leader from Economy, comments:

[May 2010] We are very clear where we all want to be... the point is that we [areas of Customs and Economy] are areas with very different goals... and we have realized that; it cannot be all facilitation of trade as Economy wants, nor it can all be regulation as Customs wants... we need to reach a middle point, and we are working on it. *Area Director, Ministry of the Economy (#25)*

This quote is useful because it shows a common pattern in the conversations, and, at the same time, it allows for more reflection on how both central government agencies managed to combine these initially contested aims. The reasons of the production of the Decree in the way it is written (emphasizing the need for trade *facilitation* instead of focusing on *control*), and the role given to the Ministry of the Economy, responds to a larger and yet less evident mechanism of collaboration among these two main actors. The following quotes exemplify not only the existence of disagreements, but more

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<sup>110</sup> Vice-Ministry for Trade and Industry and General Direction of Foreign Trade (DGCE).

subtly, a trajectory of a quite stable team of public servants working together for many years<sup>111</sup> (emphasis in the original):

[May 2009] I don't know how we did not end up punching each other... We shout at each other over the phone... There were so many issues! [giggles] But don't think this is personal.. it's just work! This is about sooo much negotiation, and soo much work.. that is why we want the Single Window to start with Economy... the way we have worked together have no comparison with any other agency... *Director/Project Leader, Customs (#13)*

I think the project has been working because my counterpart in Customs is very technical, and she really wants this project to work... and without entering into racings for medals or political credit... this maturity is transcending people... and I think that is a good achievement... we have worked very well with them... I cannot tell you we haven't argued! Indeed, we have.. There were occasions that we didn't speak for a week... but then, we came back and kept going. *Area Director, Ministry of the Economy (#25)*

The conditions of the production of the Presidential Decree of 2011 can be traced back to a history of strong leadership in the Ministry of the Economy. The responsible for setting up SICEX was a visionary public servant that knew the intricacies of foreign trade in detail. She built a career in the Ministry starting from the operational levels, until taking office as Deputy Minister 35 years later. By the time SICEX was first thought of in 1996, she had to convince her political superiors about implementing a system that was not only novel but also unique in scale in Mexico's central government. Back then, foreign trade was enjoying a particular momentum: the NAFTA was driving many changes, substantiated in strong modernisation discourses in the national economy. Because of its scale, SICEX did not need a Presidential Decree but the support from the heads of the Ministry—politically, discursively but also in material resources—which was obtained. SICEX did produce acclaimed results in the first years of its implementation although later faded away, due, in part, to the failed upgrades that happened between 2003 and 2006. For the champion of SICEX and Deputy Minister since 2000, the potential benefits of extending the pay offs from SICEX into a bigger and more comprehensive technological platform did not vanish. In March 2008, a Presidential Decree (2008) endorsed by the Minister of the Economy and the Minister of Finance, set the basis for giving more facilities in trade regulations, including the

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<sup>111</sup> This point was also reinforced in several interviews with senior public officials in trade.

design and implementation of *a* digital single window.<sup>112</sup> This Decree, and the history of its negotiations, was therefore an important intermediate step.

Later in 2008, a new Deputy Minister took office as part of a Cabinet reshuffle. Among other policies, she put forward an intense foreign trade facilitation program to reduce trade tariffs to levels that many analysts considered “impossible”.<sup>113</sup> And even though there were strong initial confrontations with several industries, the policy proceeded and remains ongoing (year 2012). It comes as no surprise, then, that a strong commitment with opening to trade and concurrent policies that would increase Mexico’s competitiveness was in the Ministry’s agenda. But further factors helped the development of the Single Window and the challenges of negotiating with Customs and their seemingly different value missions. First, given her personal career, the Deputy Minister hold strong ties with the heads of the Ministry of Finance—where Customs belongs. This facilitated a negotiating phase with Customs by securing support from the Ministry of Finance. Second, the Minister of the Economy at that time (2008) was regarded as one of the closest persons to President Calderón. Once the Deputy Minister was able to convince him about the importance of the trade facilitation programme—including the Single Window—the Presidential support was closer. The hierarchical nature of the Mexican Executive branch, and the strong ties between the Minister of the Economy and the President, made the realisation of the trade facilitation programme possible. In addition, it also gave the Deputy Minister an additional advantage to retain the “ownership” of the Single Window under her duties, after being negotiated with a different area of the Ministry.

In terms of the negotiation with Customs, important tensions emerged to agree on different phases of the tendering process during 2010. Customs hold a stronger power to control the terms and conditions of the contract and the selection of the provider, given its expertise but also because they were the ones compromising the budget. It emerged during interviews in the field that this was perhaps the cost to face, to avoid

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<sup>112</sup> Recall that Presidential Decrees differ in levels of commitments according to the Ministers that signed the bill. In this sense, the 2008 Decree had a smaller reach in responsibilities compared to the one that established the single Window in 2011, that was signed by 11 Ministers.

<sup>113</sup> I refer here to the trade facilitation programme highlighted in the timeline of the case as part of the context features of the case.

delays in releasing the Single Window within sensitive political timescales; that is, before the end of the Presidential Administration in 2012.

By the time the contract was open to tender in 2010, the leaders from Customs and the Ministry of Economy were already discussing the ways to backing the Single Window politically. In addition to the idea of the Presidential Decree, there were other alternatives, such as signing a *Ministerial Agreement*. Comparatively, a Presidential Decree is stronger than an Agreement, especially if the Decree is endorsed by all Ministers with jurisdiction in foreign trade. Negotiations reached consensus and the Decree was passed on January 2011, establishing formally the Single Window, its timeline, responsibilities and political endorsements.

### **Consumption and materialisation**

The challenges in terms of cooperation (and its obligatory modality) are more salient when considering the overall number of agencies involved. A concrete mechanism to enhance (if not *force*) coordination has been obtaining the support from the highest levels possible—the President. The idea of *forced* cooperation is then related to the public value of political loyalty, that is, the relationship between public servants as implementers of given policies designed (and decided) by politicians. An initial cue on the need to make the Single Window a reality can be illustrated by the claim that one of the project leaders from Customs suggested in 2009, when the first ‘serious’ meeting about the project:

They [other central government agencies] will need clear instructions... the Single Window is more political than technical... Agencies simply won't respond to me... they need formal instructions... They [Ministry of Economy] need to convince the President... without that, without being at that level, this is going nowhere. *Director/Project Leader, Customs (#13)*

The Decree *itself* then represents an important materialisation of this discourse and, in light of the events in 2012, reinforces the view of this piece as capable of triggering

actions.<sup>114</sup> It serves, for example, as a motivator in public servant's behaviour, at least from the viewpoint of the project leaders:

The project has become a presidential priority and it has been in all our policy presentations... (...) So, when you work on something that is important, that also motivates you... because you are doing something that is in the Presidential Agenda. *Deputy Minister, Ministry of the Economy (2010, #26)*

While there may be spaces for resistances and workarounds, technology *reinforces* the 'forced' cooperation discourse. In part, because the Single Window pushes for data standardisation across agencies, but also, because roles and routines are inscribed into software in such a way that it structures what may be possible and what may be not. From our internal comparison case, SICEX, technology did contribute to some form of forced cooperation too, by overcoming initial resistances. The Deputy Minister illustrates:

At the beginning [of SICEX], it took us lots of time to make it work... and there were many resistances. Little by little, one month went through, then a year, and so on... Today [2009], the Ministry [of the Economy] could not explain to live without SICEX *Former Deputy Minister, Ministry of the Economy (#15)*

A similar argument can be put forward in the power of technology to standardise and reinforce the discourse on inter-agency cooperation. In a webinar that the government offered to businesses and consultants when the Single Window was about to be launched, a project leader addressed that a remarkable benefit of the Single Window was its level of data standardisation. In his words:

We are talking about screens, resolutions, steps that are uniform.. if you learn to comply with a procedure from us [Ministry of Economy], you will then be able to do any other, because the screens and procedures will be exactly the same. *Area Director, Ministry of the Economy (webinar 2012)*

Thus, from a design perspective, the Single Window reifies a significant rationalisation of agencies and interagency processes through data standardisation, and the uniformity of processes. By the time this thesis goes to press, only Customs and Economy were operating procedures; the other agencies involved are expected to start releasing theirs

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<sup>114</sup> This is better reflected in the theory of CDA as textual agency, and I shall come back to this point in the discussion chapter (Chapter Seven).

by the end of 2012. A further change in the operationalisation of this discourse (and the others more generally), is the disappearance of SICEX as technical platform. By the time new procedures are released in the Single Window, the functionalities in SICEX are turned off. After the 1<sup>st</sup> of June, SICEX becomes only a historic database for organisational memory. As one of the leaders of the project puts it:

we have secure the future of the project [Single Window]... now, there is no way back to continue operating with the legacy system *General Director* (#42)

This is recall as one of the main achievements of the initiative. The Single Window is said to go beyond political timings, such as a change in the Presidential Administration.

### **Summary of the cluster**

Within the discourse on cooperation, common textual features (from text and talk) refer to the use of authority, obligatory statements and forcing inter-agency cooperation. The hierarchical structure of government in Mexico and the importance of getting the Presidential support have been sensible reasons behind the production of this discourse. The role of technology, even when subtly presented, has contributed to the materialisation of the discourse by setting up the rules in the software and by creating new ways of working and interacting. The single entry point and inter-agency operation becomes a reality in the Single Window, yet it is early to address the potential effects on inter-agency collaboration.

## **6.4 Conclusions and summary of the findings**

Using a discursive lens based on critical discourse analysis, in this chapter I have elaborated on the dominant discourses on public values and technology innovation in the process of change in trade regulations in Mexico. I have followed a systematic approach to elicit these discourses: elaborating on their content (discursive characteristics), tracing their origins and reasons of production, and spelling out the ways they have been consumed and operationalised over time. Many overlaps emerged, although I kept the four clusters separated for analytical purposes. Finally, a number of tensions—whether intended or not—were found in the trajectories of production,

interpretation and consumptions of the discourses. The central findings are summarised in the table below. They demonstrate the complex, dynamic and conflicting character of the relation between public values and technology innovation in government.

The analysis of the case shows that the production and negotiation of the meaning of public values and technology innovation in the public sector, as well as their operationalisation, draw from broader discourses and imperatives that shape the dynamics of the case. But also, that technology materialised these discourses in different degrees, reinforcing them over time. In the next chapter, I elaborate on these findings to reflect more generally on the lessons that can be learnt.



Value Cluster	Discursive features	Conditions of production (where do they stem from)	Examples on consumption and materialisation	Salient Tensions
<b>Technical efficiency: Productivity and user orientation</b>	Frequent references to economic thinking, a cost reduction as driving force	Nodal discourse of competitiveness as driving force	ICT streamline internal processes; reduce waiting times and compliance costs (i.e. transport and paper costs)	Improved internal capabilities imply staff redundancies in the long-term; internal resistances
	Presence of vocabulary typically associated with private sector rationale of economic performance	Emphasis on making trade regulations less burdensome  To perform better on world indicators on competitiveness	Expected reduction of 21% in internal human resources  Incentives in response time reductions if complying online	Using the system to control for performance
<b>Legality, accountability and justice</b>	Explicit and implicit references on honesty, fairness and equal treatment of clients; emphasis on incorporating underrepresented groups in trade (SMEs)	Government's perceived need of clear and transparent rules to reduce discretion; (based on historical <i>clientelist</i> relations in Mexico)	Increase automation and number of rules embedded in the software;	Redistribute tasks across federal agencies giving raise to potential central-local tensions
	Examples are references to legal certainty, transparency of procedures, clear rules and regulations, adherence to law, (avoidance of) discretion	Emphasis on transparency as a mechanism to obtain better centralised control	Reduced discretion and reduced flexibility of civil servants;	Depersonalization of services
		Promote access to foreign trade to SMEs	Design a platform that provides equal treatment for all	Digital platform gives more advantage to big companies (initially)
<b>Robustness and resilience</b>	Explicit and implicit references to security, robustness and reliability.	Government's emphasis on the need to avoid failure	Robustness is 'outsourced' via the PPP contract	No clear accountability system in place, potential increase in discretion
	Common references to avoidance of errors, quality systems and contingency plans	Trade depends critically on the well-functioning of the digital platform	Monetary incentives put in place to maintain the service ongoing (monetary penalties if the service is down)	Shift of control to a third (private sector) and possible loss of values (fairness and justice)

<b>(Forced) cooperation</b>	Explicit and implicit references to authority. Frequent use of obligatory statements, and agency responsibilities	Focus on hierarchical structure of the Mexican bureaucracy; leaders relying on presidential support to make the system work; large number of agencies involved in the Single Window	Networked technologies driving (forcing) cooperation (“there is no way back”)	Increased centralized power over decentralized operation
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**Table 15: Summary of findings: four discourses on public values and technology innovation**

7 **Chapter Seven. Implications: the interdependent, political and dialectical relation between public values and e-government**

The longitudinal case that I studied provides a rich account of the production, dissemination and consumption of discourses on public values and technology. Building on the findings from the case this chapter derives general implications for an increased understanding of the relation between public values and technology. The chapter is divided into two parts. In the first part, I discuss the different public values found in the case and their relation with technology as well as their *interdependence*. In the discussion I draw theoretical propositions on the relationship between public values and e-government.

The second part builds on the interdependences between different public values and related tensions identified in the analysis. I discuss more broadly the implications of the case in light of what I define as a *dynamic, political and dialectical* relation between public values and technology. To elaborate this in more detail, I discuss the role of broader institutional agendas, the political imperatives and the language of change that underlie the design and implementation of e-government initiatives.

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**Key themes**

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From dichotomy to interdependence	Multiple discourses on public values and technology It is <i>not either or</i> , public values are interdependent Possible alignments, tensions and conflicts
Dynamic, political and dialectical relation	Dynamic: negotiating meanings in context Political imperatives and broader context; type of change Dialectic: Technology <i>internalises</i> and <i>is internalised by</i> public values discourses

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**Table 16: A dialectical relation between public values and technology**

7.1 **Public values and technology: from dichotomy to interdependence**

The critical discourse analysis of the case of e-government in Mexico showed that there are multiple public values linked to technology, which are related, and at times

contesting each other. The list of public values compiled by Beck Jørgensen and Bozeman (2007) and the clusters of administrative values posited in the work of Hood (1991) proved useful guidance to trace the most prominent public values in the case. Yet, it has been only by examining manifestations of public values in their empirical context that their relations, tensions and characterisation could be distilled and analysed. That is, critical discourse analysis provided the means not only to elicit those emergent public values but also to understand them in an analytically useful way.

The analysis revealed four discourses on public values and technology: (i) technical efficiency, (ii) legality, accountability and justice, (iii) robustness, and (iv) (forced) cooperation. In turn, the analysis showed that certain discourses on public values have been more prominent than others, generating tensions over time.

<b>Discourse clusters</b>	<b>Associated Public Values</b>
Technical efficiency	Productivity, efficiency Effectiveness, parsimony, business-like approach User orientation, timeliness
Legality, accountability, Justice	Legality, Rule of Law, Equal Treatment, Fairness (procedural fairness) Accountability, professionalism, integrity Justice (distributive justice)
Robustness	Robustness Adaptability, reliability, timeliness
(Forced) Cooperation	Cooperativeness Political loyalty

**Table 17: Summary of discourses and associated public values**

The most salient and explicit set of public values—approximated by their discourses—have been those associated with technical efficiency. Elaborating on the structural characteristics of the cluster, I found that preoccupations with cost reductions, internal efficiencies, and providing a quicker, timely and cheaper service to clients have been a hallmark in the case. These priorities, usually claimed as driven by new public management approaches, have been very explicit in the materials analysed in the case study. The role of technology, in turn, has been salient for reducing response times and resource costs for both government and clients. In sum, my case study shows how the discourse on technical efficiency takes centre stage during the trajectory of an e-government initiative.

The second cluster includes three sub-groups of neighbouring public values, all related to commonly associated values of traditional public administration. The first one, legality, is used here as an umbrella of other similar public values (rule of law, equal treatment, fairness) to indicate that the relation between public administration and citizens should be regulated by law instead of the arbitrary exercise of power. The second subgroup mapped public values related to the behaviour of public servants, such as accountability, rectitude and honesty. Put together, these two sub-groups of public values (legality and accountability) appeared in this case to be as important as the discourses on technical efficiency. Concerns with reducing unnecessary discretion, promoting transparent and clear rules and legal norms, were salient preoccupations and at the same time, motivators to use technology within the whole trajectory of the case. The reasons of their prominence were found in a longstanding history of broader agendas on democratisation and the elimination of *clientelism* in the public sector in Mexico. Even though in my textual oriented analysis the discourses on legality and accountability were not as explicit as those of technical efficiency, these two groups of public values were very salient and emerged stronger over time.

Distributive justice, the third sub-group of values in the second cluster, was approximated in my analysis by the role of government in distributing more services to underserved groups—small, medium and micro enterprises (SMEs) in foreign trade activities. In contrast to the findings on technical efficiency and legality, this discourse proved not only ambiguous but less materialized or non-existent during the early phases of the case study. Moreover, at least in the short run, the implementation of the Single Window appeared to create more disadvantages for SMEs. That is, the implementation of the Single Window created higher comparative costs to smaller firms, as they have to invest in new technologies or new resources. The general lesson that can be derived from this is that certain public values, although crystallised in the discourses of e-government and held by several stakeholders, may lead to opposite results in the course of e-government action.

Robustness and related public values such as adaptability, resilience and timeliness also proved to have their space in the project. During the trajectory of the case, concerns with ensuring that the digital platform worked effectively appeared repeatedly. However, the main change has been in shifting the role of government as builder and

provider of the technological services to one of monitoring for the services contracted to a third party. An abandonment of the discourse and practices of total quality management systems inside government has also emphasised a shift from internal robustness to one that privileges cost reduction and the benefits on relying on external expertise.

The last cluster, forced cooperation, was demonstrated to be more slippery than the others, yet salient. This discourse—and especially its forced consensus part—became more dominant during the phases of design and construction of the Single Window. The reasons, I claim, are rooted in the need to have strong political support when attempting to enforce a programme encompassing a large number of public agencies with diverse regulatory interests.

### **7.1.1 Multiple public values in e-government**

My study confirms the existence of multiple public values in e-government suggested in the literature of public value and related streams (Bozeman 2002, 2007, Beck Jørgensen and Bozeman 2007, Moore 1995, Hogget 2006, Rainey et al 1976, Rainey and Chun 2005). However, an important corollary of the existence of multiple public values in my case study is their *interdependence*. This thesis clearly illustrates that public values become intertwined in multiple dimensions: within and between their clusters, across different phases of discourse production, its interpretation and materialisation. On several occasions public values were also shown to be co-occurring. The case study showed that some public values were related to one another and appearing at the same time, an idea that is referred to in the literature as *covalues* (Beck Jørgensen and Bozeman 2007, p. 370). The notion of interdependence is closely related to *covalues* in the sense that certain public values—and the way they became materialised—reinforced or restrained the presence and materialisation of other values.

To elaborate on this in more detail, I point to a number of identifiable public value co-occurrences as well as tensions that, while building on my findings, can be of more general understanding.

The power of networked and novel ICT relies on its capacity to automate information processes allowing for rapid or real-time handling of information (Fountain 2001, p. 61). In addition, technology has the capacity not only to automate but to process information in a meaningful way, leading to potential changes in coordination and the ways clerical tasks are conducted (Fountain 2001, p. 35-40). The process of automation, therefore, requires in some extent the definition of information processes, organisational roles and responsibilities in government. In order to achieve gains in various aspects of technical efficiency, establishing clear rules through standardization and homogenization was considered as a necessary prior requirement for the implementation of technology—whether in SICEX or more intensively, for the Single Window. During the case study, a persistent phrase resonated among interviewees: “we need clear rules and processes and *only after* apply technology to them.”<sup>115</sup> The capacity of technology to automate, handle and process large and complex amount of data was also seen as a valuable mechanism to improve trade regulations. At the same time, it seemed clear for the leaders of the project that automation *alone* was not going to support their complex network of regulations or reduce duplicities and redundancies in their processes. This is why I claim that standardisation and simplification of procedures can be understood as necessary preconditions to system design. In turn, this has been illustrated in the case by the series of business process reengineering (BPR) exercises over time.<sup>116</sup>

The automation and standardisation of processes have been essential features to achieve two related set of public values: technical efficiency and internal accountability. That is, automation and standardisation served as a precondition to make trade procedures less burdensome and costly (technical efficiency), and as a way to reduce discretion of public servants. Automation and standardisation are thus highly intertwined in the production

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<sup>115</sup> The main IT Advisor to the Minister provides an illustration to this persistent claim in the case:

One thing is to have a designed process, that is working, and say “I’m going to automate this”... And a rather different thing is to conduct a process reengineering to make that process an optimal one, and only after, systematise it... the latter is the way it should be... I am against systemising the inefficiency! *Main IT Advisor to the Minister (LA)*

<sup>116</sup> The case also shows that, as widely studied in information systems research, conducting BPR exercises and only after applying technologies presupposes a linear and rational practice that is unrealistic (i.e. Avgerou 2002, Robey *et al.* 2002). This is no different in the public sector.

and materialisation of technical efficiency, legality and accountability. As such, these values can be broadly associated with the bureaucratic principles of public administration. The emphasis on standardisation resonates well with broader findings in the literature, which suggest that standardised data, structures and procedures are used to create order out of organisational ‘messiness’ through the rationalisation of agency and interagency processes (Fountain 2001, p. 27 and chaps. 8, 9, Kallinikos 2006b, chap. 2, Hasselbladh and Kallinikos 2000, Introna *et al.* 2009, p. 19, Townley *et al.* 2003, pp. 1056–7). Therefore, the actions of automation and standardisation worked as an overall mechanism to create discipline and force cooperation both amongst agencies and within them.

#### *Standardised rules, discretion and flexibility*

Some technology innovations used in e-government can bring benefits in procedural fairness by hard-coding standardised rules and procedures (Bovens and Zouridis 2002, Reddick 2005, Reddick *et al.* 2011). However, standardisation and automation may bring additional tensions. Once automation of rules and procedures is in place, the computer system becomes closed and rather inaccessible to its ordinary users (Mutch 2010, p. 514, Kallinikos 2006, chap. 2). As has been demonstrated in similar cases (i.e. Volkoff *et al.* 2007, Fountain 2001, Mutch 2010, Ciborra and Patriotta 1996), roles, routines and responsibilities are inscribed into software in such ways that it remains difficult to work outside them.<sup>117</sup> Foreign trade regulations in Mexico are reputed for its complexity. The more automation in place, the less flexibility employees may retain to deal with cases that need special attention (i.e. outside hours). That is, preoccupations with legality and its encapsulation in technology innovation can be either an enabler for achieving technical efficiency (the previous example), or a constraint (as in this illustration). Overall, this is in line with previous research in the public sector, which suggests that tensions between flexibility and discretion are hard to balance and tend to persist over time (Smith 2011, Feldman and Khademian 2001).

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<sup>117</sup> These authors refer either to groupware technologies, data warehouses, or enterprise systems. The Single Window, while it is not necessarily labelled as such, in broad terms entails a comprehensive design of software to support and integrate cross-functional organisational processes (i.e. ERP as defined in Davenport 1998). In addition, similarly to data warehouses systems, it is designed to handle and store large volumes of historical data that can be retrieve for analysis.



### *Robustness and accountability*

The Single Window, as a technological infrastructure, holds vital importance for the overall operation of foreign trade activities in Mexico. If the system fails, then the efficiency of trade operations is compromised—a rather obvious effect. An additional tension comes from the way that the technological platform has been designed and built. The model of the Single Window is based on a public-private-partnership (PPP), and it is the private sector that runs the Single Window operations for the first five years. Even though the contract includes tough penalties to avoid system failures, it is not yet clear who would be accountable in case of failed procedures or other malfunctions. Shifting the technological control to a third party complicates matters of accountability (Smith et al 2010). Tensions between the parties are related to general concerns about partnerships with the private sector, especially the changing nature of accountabilities in such partnerships. On this matter, Willems and van Dooren (2011) hypothesise that the shift from bureaucratic to collaborative arrangements with joint public and private involvement erodes traditional notions of accountability and blurs responsibilities, opening the need for new mechanisms (2011, pp. 524-5). In the case of the Single Window, the idea of ‘contingency plans’ exemplifies a type of mechanism. However, given their limited scope, it also illuminates an area for future tensions.

### *Equality, customer orientation and outsourcing*

Studies in e-government have noted that there is an increasing tendency towards differentiation and personalization (Bellamy and Taylor 1998, p. 88). Digital technologies provide a platform that is very appealing to that part of the public that has access and resources to use the internet in more advantageous ways (Fountain 2001, p. 201). In reinforcing the idea of citizen as customers and user orientation, tensions emerge between technical efficiency and distributive justice. While, in principle, the Single Window project offers the same service to all, it tends to favour big companies and powerful stakeholders—whether unintentional or not. In addition, a further tension could emerge when a private company is in charge of operating the Single Window: it was suggested in the case study by a public servant that the private operator sometimes showed more interest in charging for services than actually delivering them. Andrews

and Entwistle (Andrews and Entwistle 2010, pp. 682–3) warns that public-private-partnerships may have particular negative effects on equity, which adds another value conflict between technical efficiency and distributive justice.

### 7.1.2 Implications of public values interdependence

An important theoretical account from the multiple and interdependent relations between different clusters of public values entails the inadequacy of referring to the ethos of new public management (NPM) and bureaucracy as ‘absolute opposites’. This has been suggested in the scholarly literature dealing with e-government (i.e. Persson and Goldkuhl 2010, pp. 51–2).

Scholars have argued that public values usually associated with bureaucracy, democracy and traditional public administration should not be left aside in e-government designs and implementations (i.e. Brewer *et al.* 2006, Cordella 2007). This has been an important claim and a much-needed counter argument for the excessive attention paid to market-based principles for government organising (Bozeman 2007, du Gay 2000, 2003, 2004, Willmott 2011, Olsen 2006). My argument here is that, while value shifts occur and tensions emerge, *a neat separation between public values commonly associated either to NPM or bureaucracy is artificial*. Public values associated with traditional values of bureaucracy, such as a preoccupation with legality, the rule of law and procedural fairness, are not only prominent in the case but co-occurring with values more usually associated to a business-like approach, such as user orientation, a preoccupation with ‘trimming fat’ and avoiding ‘slack’ (Hood 1991, p.12).

In addition, my findings in this area resonate with broader discussions in organisation studies that reject treating bureaucracy and post-bureaucracy as binary oppositions (Harris 2006, pp. 80–2, Bloomfield and Hayes 2009, pp. 480–3).<sup>118</sup> While these discussions do not tend to focus on the role of technology (but see Harris 2006 and Bloomfield and Hayes 2009), the Mexican case supports these more general claims; that

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<sup>118</sup> On this matter, see also (McNulty and Ferlie 2004, Olsen 2006, Bolin and Härenstam 2008, Johnson *et al.* 2009, Clegg *et al.* 2011, chap. 1). For a discussion on the artificial distinction between Bureaucracy *versus* Enterprise, see du Gay (2004). And for the myths of NPM versus post-NPM, see (Lodge and Gill 2011, Fattore *et al.* 2012).

is, a multiplicity of public values interacts in e-government, in positive terms (reinforcing each other) or in conflicting ways (competing for dominance).

In part, the way the NPM was conceived and understood in scholarly literature has perpetuated a dichotomist vision of rather intrinsic and interdependent public management properties, such as flexibility and accountability (Feldman and Khademian 2001, p. 341). In e-government research, references to NPM are presented as if there were a coherent set of premises, types of reforms, or public values associated to them. While in general terms the NPM can be largely associated with the use of market-based principles in government with a focus on privatisation and economic individualism (i.e. Salskov-Iversen *et al.* 2000, p. 184, Bozeman 2007, p. 76), the actual *content* of NPM reforms is best regarded as ambiguous, emergent and context-based (Lodge and Gill 2011, Barzelay 1999, 2000, 2001). For example, it could be argued that Mexico has embraced many principles of the Washington Consensus and NPM ideology (such as a preoccupation with efficiency, privatisation of services, and customer orientation). However, the country did not embrace central NPM components such as extreme *managerialism*, or a shift to *disaggregation*, increasing competition and incentivisation amongst public agencies as demonstrated by Cejudo (2008).<sup>119</sup>

In line with these arguments, Lodge and Gill (2011, p. 142) argue that NPM was never as purely implemented as the literature in public management and political science has led us to believe. Overall, I contend that broad labels such as NPM or bureaucracy are usually used in the literature of e-government without reference to their institutional features. The differences in contexts and institutional dimensions therefore lead to flawed generalisations. Based on my findings, I further suggest it is more fruitful to focus on clusters of public values—manifested in discourses—rather than dichotomised visions of NPM *versus* bureaucracy.

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<sup>119</sup> The discourse on forced cooperation that I elaborated in the analysis, for example, is an indication of the absence of competition. In addition, I showed in the case chapter that there were no major changes in the structures of the Ministries involved that could be comparable to those of the disaggregation movement experienced in leading NPM adopters such as the UK, New Zealand or Canada (Dunleavy et al 2006).

## 7.2 The dynamic and political relation between public values and technology

I argued in the previous section that multiple public values co-exists and are interdependent, at times acting as covalues or precondition of others, and at times generating conflicts. These public values *are not simple given* in e-government design. They are *dynamically* construed and negotiated within a context marked by national imperatives (i.e. dominant discourses on trade), the visions of public managers as well as available technical expertise. In these sections, I take the argument further to reflect on two particular dynamics: the political imperatives and previous history of negotiations; and the type and language of change.

The political games and imperatives that I shall discuss in the following are important. They highlight the non-deterministic character of technology within public sector organisations and have an emergent character. Fountain (2001, chaps. 6, 7 and 8) and many others (Danziger *et al.* 1982, Bozeman and Bretschneider 1986, Cordella and Iannacci 2010, Dunleavy *et al.* 2006, Bloomfield and Hayes 2009) have documented that organisational forms and different institutional forces shape the outcomes of e-government initiatives. However, the ways ideological discourses are enacted and materialised in e-government have received less attention (but see Cordella and Iannacci 2010, and Bloomfield and Hayes 2009 for exceptions). Therefore, I argue that reflections on the political imperatives and its nature of change are useful explanations to why certain public values are sustained over time, while others are marginalised or received less attention.

### 7.2.1 Context, political imperatives and negotiations

Broader political and economic agendas have shown to be important factors in the case study. When portraying the four different discourses on public values, I also explained its supporting role for the broader ideals of increased competitiveness and open trade in Mexico. These ideals form a widespread and influential body of discourse that affects perceptions of society and government in general (Mutch 2010, p. 516). From a discourse perspective “it is the texts that reproduce widely held conceptions and ideological assumptions—or create new ones” (Vaara 2010, p. 18).

This thesis provides several examples on the influence of the competitiveness discourse as an overall value mission behind the Single Window initiative. More specifically, the way I elaborated on the production of the different discourses on public values and technology in the case study, shed light on these dynamics. For example, the pursuit of improving Mexico's position in global rankings, such as the *World Bank's Doing Business* or the *Global Competitiveness Index*, framed the design and particular uses of technology innovation among stakeholders. That is, broader concerns with strengthening its global position in trade contributed to the goals of building a Single Window that would reduce the costs for Mexico's firms as well as provide more transparent, efficient and controlled operations of foreign trade.

The particular ways in which the Presidential Decree of 2011 was produced is useful in order to elaborate on the power influences behind the salient discourses on public values. The Presidential Decree and the specific technological choices made for the Single Window may be seen as the new version of an organisational truth (Introna *et al.* 2010, p. 22, Mutch 2010, p. 512). However, this is only *ex-post*; leadership capabilities, the processes of building political support and a history of previous collaborations help to unfold these dynamics. I shall elaborate on this below.

The role of the leaders of the project and their success in building political support is helpful to explain why certain public values are sustained over time. Elaborating on the discourse of forced cooperation, it emerged that once the Single Window became more a concrete possibility than rhetoric, the government looked for mechanisms to endorse the initiative in stronger ways. In the work of Michael Moore and colleagues (Moore 1995, Benington and Moore 2011b), this process is understood as building and sustaining support from the *authorizing environment*. The latter is conceptualized as “a place of contestation where many different views and values struggle for acceptance and hegemony”(Benington and Moore 2011b, p. 6). In order to build stakeholder support, public servants and decision makers can seek for assistance in political superiors, overhead agencies, legislative oversees, the media and interests groups. While the leaders of the Single Window initiative draw on these mechanisms—mainly from political superiors and interest groups—the concrete way to back the Single Window

politically was by obtaining support from the highest political level possible: the President.

It is commonplace that initiatives without strong political support usually tend to fade away in public affairs. As an example the OECD (2011, p. 13) stresses that lack of effective coordination and strong political leadership are the main barriers to e-government initiatives in Mexico in general. Even in the cases of thought-through and well-planned projects. That building a strong *authorizing environment* is important then, is not precisely novel.<sup>120</sup> But it is helpful for understanding that gaining political support was, in part, fuelled by the prominence of a national imperative on trade competitiveness that has been pervasive in Mexico for the last two decades. In addition, leadership capabilities and strong commitment among project champions also played a role in persuading the authorities upwards.

A related factor is the history of previous collaborations and negotiation between the two leading agencies of the project. On many occasions interviewees suggested that the champions of the Single Window initiative hold different value missions; that is, while Customs emphasises a preoccupation with control, the Ministry of the Economy promotes trade facilitation. A history of mutual adjustments<sup>121</sup> between both agencies helps to explain why SICEX made progress and enabled collaborating mechanisms between both agencies.<sup>122</sup> As a consequence, it turned out that public servants in charge of the design and operation of the Single Window did know each other for a long time, assisting (and sometimes constraining) the process of collaboration.<sup>123</sup> The literature on collaboration in the public sector suggests that organisations that engaged in collaboration successfully in the past are likely to continue engaging in inter-

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<sup>120</sup> It is worth to stress that Moore (1995) refers to the authorizing environment as part of a broader managerial tool called the 'strategic triangle' for public value creation. In this sense, I do not claim his ideas are not original, on the contrary. My point is to stress that in public affairs, backing initiatives politically is a rather common condition for policy effectiveness.

<sup>121</sup> I am drawing on Lindblom's (1965) idea here, although in a more relaxed way. In his book, *The intelligence of Democracy*, Lindblom develops the concept of 'Partisan mutual adjustments' to address how coordination can be achieved in absence of a central coordinator. The idea of mutual adjustments entails adaptive adjustments "in which a decision-maker simply adapts to decisions around him" (p. 33).

<sup>122</sup> Recall that one of the features of SICEX was its interconnectivity with Customs.

<sup>123</sup> Most public servants (middle-level) dealing with the practicalities of the Single Window, have worked together since SICEX, and although on smaller scale, did have experience with technology, trade regulation and coordination among the agencies.

organisational projects (Bryson *et al.* 2006). In addition, Ansell and Gash (2008, p. 11) indicate that a history of successful past cooperation can create social capital and high levels of trust and therefore facilitating further collaboration. This thesis argues that organisations working together, sharing a history of cooperation, will tend to build and sustain similar public values over time.

Summing up, the text of the Decree can be seen as a consequence of previous inter-agency negotiations and political imperatives. It is also a result of a previous history of technological developments and collaborations between the champions of the project (Customs and the Ministry of the Economy). The way the Decree was negotiated, and written, was in part because of concerns with broader institutional agendas. However, it was also a result of potential benefits of that technology. In other words, a longstanding history of mutual adjustments and a capability to negotiate contested value missions proved an important mechanism to enforce the general discourse on competitiveness. It also proved important for its associated dominant public values of technical efficiency, internal accountability and legality.

### **7.2.2 The type of change: continuity instead of radical transformation**

The reflections on the history of previous cooperation relates to the type of change implicitly inscribed in the initiative. In part, the discourses of the Single Window suggested a continuous movement towards the incremental changes that both Customs and the Ministry of the Economy have attained. The observed evolution in the vocabulary of the project cannot be described as radical change, transformation or even revolution. Instead, the many examples that I portrayed in the previous chapter are better described as a continuation from previous successes. A history of cooperation as well as utilizing the political environment favoured this path towards more openness to trade through incremental changes. Of course, the Single Window *changes* ways of acting and interacting as well as introducing new objects into the physical world (i.e. technology). However, the point here is to emphasise that the ‘continuation’ discourse of competitiveness seat with the political nature and power structures underlying the case.

My findings are in agreement with those who conceptualise design and implementation of e-government initiatives as characterized by the coexistence of a mixed of distinct factors rather than by fundamental or radical transitions (Harris 2011, p. 116, Introna *et al.* 2010, pp. 22-3, Bloomfield and Hayes 2009, pp. 482-3, McNulty and Ferlie 2004, p. 1389). Unlike these studies, my findings show a *discourse* of continuation rather than radical transformation as is the case in some other contexts (i.e. the UK).<sup>124</sup> Using a language of continuation instead of transformation may be, precisely, another factor contributing to sustaining certain core public values alongside the Mexican initiative. More specifically, resistances are perhaps more likely to happen when a new discourse is inculcated and imposed over previous practices. For example, the tensions emerging from the potential staff redundancies as a consequence of gains in technical efficiency may be better managed if choosing a discourse of continuity rather than transformation.

I want to raise another point here. The idea of sediment and ongoing change instead of revolutionary transformation does not solely pertain to the domain of the public sector. As Suchman's states (2002, p. 10 emphasis added):

New ways of working and new technologies grow out of old ones. They do so neither through a process of *simple* incremental change, nor through wholesale displacement and transformation, but out of an *ongoing interaction* between understandings based in prior experience on the one hand, and leaps of faith inspired by imagination on the other. (...) This statement of continuity provides a corrective to heady pronouncements of so-called 'revolutionary' technological change. Its premise is that through juxtapositions and connections of existing forms new forms emerge.

The idea of a sediment or 'continuous change' serves to illustrate why certain public values were more or less stable over time. The juxtaposition of the dominant discourses of technical efficiency and legality led to the design of a platform that supported control rather than flexibility. Such a development could be seen as a result of the previous historicity and expertise of those involved in the project.

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<sup>124</sup> The language of change in the UK has been about radical transformation, as some of these studies highlight (i.e. Harris 2011, Bloomfield and Hayes 2009, Klecun 2011). While the findings point toward the same direction—the importance of taking the complex history, nature of the organization and power dynamics into account—the empirics of the Mexican case are quite different in the choices of language about the expected changes of ICT.



Reflecting back to the idea of *sedimented* or *melled* change (as Bloomfield and Hayes 2009, p. 482 suggest), brings another important factor into play to explain the trajectory of certain public values in the case. In Mexico, the discourse on SMEs has gained an increasing place in the national agenda if not yet fully materialised. However, it may in the long term contribute to the achievement and articulation of distributive justice in a national context. That is, technology innovation *may* contribute to distributive justice and procedural fairness. After all, the achievement and realisation of public values depends upon the political imperatives, institutional arrangements, technical expertise and organisational capabilities. Tensions are not going to disappear, and technology innovation may change, reinforce or create new centres of tensions between public values.

### 7.3 **The dialectic relation between public values and technology**

Based on the previous discussions the public values associated to a given e-government initiative are resolutions of dynamically constructed discourses that are produced and internalised in different ways. That is, modernisation discourses and ideals *shape* the way e-government processes are designed and implemented. At the same time, technology *feeds back* into these processes. In words of CDA, I claim that while broader discourses on public values do have an influence on technology design and implementation, *technology internalises and is internalised by* discourses on public values.

The literature on e-government and the socio-technical approaches on the dynamics of technology innovation within the public sector has already highlighted that the realisation of intended objectives is not guaranteed (Fountain 2001, chap. 6). That is, organisational forms and institutional arrangements as well as political and rational logics condition technology outcomes. The temporary achievements of SICEX are useful to illustrate this point. Back in 2000, an appealing feature for improving efficiency, timeliness and user orientation of trade regulations was to increase the availability of electronic channels to submit procedures. Yet, when comparing a set of specific procedures, the average process time was higher in the case of using the internet compared to paper based and face to face. With only one exception, using the

internet to submit a given foreign trade procedure resulted in longer waiting time.<sup>125</sup> This is not to say that technical efficiency imperatives were not materialised. I have showed that the *total* average waiting time for trade procedures was systematically reduced since 1999, that is, after the implementation of SICEX. To realise fully the potentials of SICEX in 2006, required government to change legislation on digital signatures. It was not until January 2012 that the Advanced Digital Signature Initiative (*Ley de Firma Electronica Avanzada*) was approved, giving digital signatures the same legal recognition as the written signature.

The example reflects that the realisation of the intended public values is a process that continues to battle with emerging tensions, power dynamics and technological imperatives. Public organisations—and organisations in general—are not just empty containers into which technology innovations are poured (Fountain 2001, chap. 6, Mutch 2010, p. 512, Harris 2011). More attention should thus be paid to the surrounding conditions in which technology innovation happens.

As suggested, technology innovation reinforces broader discourses as well. For example, despite some mixed results, the previous and smaller platform SICEX proved to deliver tangible benefits in terms of technical efficiency, transparency and decentralisation. In turn, the Single Window—even as an ideal before being implemented—was accompanied of imaginaries of certain public value achievements too. Recall that the Single Window has particular functionalities that support automation, standardisation and control at distance. Its operationalisation, therefore, enforces new ways of working in foreign trade, reflecting a step that, while provisional, frames new structural conditions. As Mutch notes (2010, p. 514): “there are clearly choices to be made at certain times, but those choices, once made, commit particular groups of users to something that in practical terms is given”. Therefore, the process of setting up data and information structures in the Single Window was at one point amenable to decision, but once decisions were made, those particular structures will be constraining possibilities of action. This ‘closure’ of the system affects the ability of its users to interact with the platform. What I want to emphasise here is that technology enables and constrain public value realisations. In doing so it has the potential to reinforce

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<sup>125</sup> Source: own elaboration based in the information compiled in Telecom-CIDE (2007).

broader ideological discourses as well as changing government's action. Even when technology may allow for a flexible interpretation (Orlikowski 2000, Walsham 2001, p. 45), the way the technology is chosen and designed fixes some possibilities. The Single Window stresses automation, transparency and control to achieve competitiveness, leaving less room for flexibility, adaptability or participation.

Of course, the realisation of the intended public values behind the Single Window is not only a political process of negotiations, but also a process of striving to make technology deliver (i.e. overcoming technical constraints, making systems work, project management, among other elements). I have not focused on the particular technical mechanisms in a salient way, but those are dialectically related in the process of internalisation and operationalisation of discourses.

I argue that organisations develop discourses that suit their particular interests and advance their preferred technologies (Munir and Phillips 2005, p. 1667, Fairclough 2005, pp. 931-2). Although it is too early to study the effects of the Single Window on the potential tensions that it raises as well as the constraints, the fact that a new technology is already in place, *materialised*, and affecting ways of acting and interacting, can be seen as the result of discourses being dialectically transformed into other sociotechnical elements (Fairclough 2005, p. 934).

#### 7.4 **Conclusions**

I have started this chapter by discussing the types of public values found in the case and its character of interdependence. I shall add that the dominance of the technical efficiency cluster is congruent with previous findings in e-government research, which suggest that the effects of ICT on the internal capabilities of government are the most salient effect (i.e. Andersen *et al.* 2010). This, in part, may be explained by the nature of tasks and the associated benefits that can be traced as a consequence of government action. For example, reductions of time response, and the simplification of burdensome regulation are quite apparent goals to measure, against more ambiguous outcomes in the domain of accountability, fairness and justice. In the specific context of the case, I showed that four clusters of public values cohabit, and that despite the dominance of technical efficiency, other public values co-occur, reinforcing each other and creating

tensions as well. My findings, then, do not support a dichotomist division between public values associated to NPM and traditional public administration as it has been suggested. This artificial division is in part due to the ambiguous ways the NPM has been used in the literature of e-government and public administration more in general. Thus, my findings refute the proposition that e-government tends to favour NPM prescriptions. What is the NPM after all? I claim that it is more fruitful to refer to clusters of public values, and deconstructing their meanings, tensions and possible alignments with technology over time.

My study shows that the way technology internalises and is internalised by public values—and its manifestations in discourse—offers a detailed account on how broader ideological currents are interwoven in technology innovation in public sector organisations. Much of the collective sensemaking surrounding public values and technology innovation in government either manifests in government texts or is reflected in them. Thus, the emergent discourses shape collective understandings of the complex phenomena. The focus of my dissertation, and the theoretical ideas applied using CDA, suggest that broader trends and discourses need to be taken into consideration when assessing the types of public values that e-government initiatives are said to achieve—regardless of the case. In turn, technology innovation feeds back this process bringing its own dynamics as well. Whether reinforcing an overall discourse—as the case shows—or transforming it.

Despite the importance of these broader discourses—as I showed in the analysis—very few authors have provided detailed empirical accounts of technology innovation in the public sector and its linkages with broader political and ideological agendas (but see McNulty and Ferlie 2004, Bloomfield and Hayes 2009, and Harris 2011 for notable exceptions). I claim that by studying public values and technology through a dialectical discursive lens my empirical accounts can contribute to this end and more generally, to our understanding of technology innovation and values.

## 8 **Chapter Eight: Conclusions**

This chapter presents the conclusions and key implications of my research, as a means of bringing together the dominant themes and arguments of my thesis. My main motivation to conduct this inquiry has been a preoccupation with public values and the ways they are presented and eventually incorporated in e-government initiatives over time.

To facilitate the discussion, the chapter is divided into four sections. Section 8.1 provides an overview of the thesis and presents the main themes as they have been organised in my work. Section 8.2 restates the main contributions of the dissertation. It is divided into three sub-sections: contributions to theory, methodological contributions and practical implications. Building on the contributions, section 8.3 reflects on the strengths and limitations of my research approach, paying particular attention to the methodological choices and their implications for conducting critical discourse analysis. My research raised interesting issues that went beyond the scope of this thesis. The final part, section 8.4, elaborates on future research directions that I found promising and interesting for moving along related debates.

### 8.1 **Main themes and overview of the thesis**

This thesis is concerned with understanding and explaining the linkages between public values and technology through critical discourse analysis. In particular, my concern has been with studying empirically *which* public values are presented and operationalised over time, in a longitudinal case of a technology-enabled platform to facilitate foreign trade regulations in Mexico—the Mexican Single Window for Foreign Trade (hereafter Single Window). The main objective was to bring different bodies of knowledge into conversation in order to analyse, understand and explain two related issues, comprised in the main research questions:

What sorts of public values underlie a central e-government initiative in Mexico?  
How does the relation between public values and e-government unfold over time? What can we learn from Mexico?

The overall premise has been that public values shape, and are shaped by, technology; that is, there is a *relational* ontology. Based on the elusive character of public values, I adopted a discursive lens—in particular, critical discourse analysis—to address my research questions, focusing specifically on how public values are presented in key government texts, and how these texts are produced, disseminated and materialised during the trajectory of the case. The overall finding has been that there are *multiple public values* that are a combination of ‘classic’ and new public administration. These multiple public values compete for dominance, are dynamically construed and negotiated over time. Therefore, the relation between public values and technology can be best regarded as *interdependent, political and dialectical*. I shall elaborate accordingly in these sections.

### **8.1.1 Theoretical underpinnings: public values, e-government and critical discourse analysis**

A concern with public values and e-government began with an exploration of the definitions and current debates in research on public values, presented in the first part of Chapter Two. This served the purpose of showing the complexity of public values theory, the different and sometimes disparate views on the subject as well as the challenges to study them empirically. For that reason, I selected the work of Bozeman (2000, 2007) on normative public values, who provides a stable and useful definition that is aligned with the purpose of my research: “public values are those providing normative consensus on the principles on which governments and policies should be based” (Bozeman 2007, pp. 13, 132). To facilitate the analysis of the literature on e-government, I used as a starting point a list of public values commonly found in contemporary literature of public management (Beck-Jørgensen and Bozeman 2007) and complemented it with the work of Hood (1991) and Hood and Jackson (1991) on administrative values. I then showed that e-government research either takes public values for granted or studies them in isolation. I therefore presented two related findings from the critical review on e-government literature in light of public values

theory: (i) that empirical studies mapping multiple public values or public value shifts remain elusive in the literature; and (ii) that e-government research is silent on the relation between public value and its complex influence on technologically enabled public service provision. In sum, Chapter Two provided both the background and informed expectations about the thesis as well as key theoretical foundations of public values research.

A key concern within public values theory is the difficulty of studying public values, given their intangible and elusive character. Thus, in Chapter Three, I presented the theoretical basis for studying public values and their linkages with technology through critical discourse analysis (CDA). This particular choice of theory also led my empirical design. The purpose was not just to search for public values in e-government but also to study them in an analytically useful way. I based my work upon the version of CDA developed by Fairclough and colleagues (Fairclough 1992, 2003, 2005, 2010, Chouliaraki and Fairclough 1999, 2010), which emphasises the importance of a close and detailed analysis of texts, and at the same time, the integration of their analysis into broader social processes, actions and events as well as in relation to other texts. My approach to study discourse in organising is therefore three-dimensional: it links key government texts to broader discourses on public values, locating them within a particular historical and social context. As such, this version of CDA offers a useful theoretical framing and a practical methodology to study how discourse figures within processes of public value production and its realisation in technology. An important corollary that emerged from this particular way of theorising public values and technology is that discourses are not *just* discourses but materialised and operationalised into other elements of social life—such as activities, subjects and their social relations, artifacts, time and place, forms of consciousness. A consistent theorisation of technology was added to CDA drawing from the sociotechnical studies in e-government (Fountain 2001) and the relational character of technology in organising processes (Orlikowski 2000, Markus and Robey 1988, Volkoff *et al.* 2007, Mutch 2010). Technology, then, is said to be relational in the sense that it *internalises* discourses of public values but also has the capacity to constrain, reinforce or transform public values discourses. The theory chapter therefore presented a theorising device that builds from CDA, public values theory and social theory studies of technology innovation in government.

### **8.1.2 Strategy of inquiry: longitudinal single case in light of CDA**

The particular theorisation of public values and technology through CDA implied important methodological choices. The empirical core of my dissertation was a 16-year longitudinal case of a technology-enabled platform for managing foreign trade regulations in Mexico. An extensive methodological chapter (Chapter Four) provided details on the philosophical assumptions underlying my choice of CDA, the way the longitudinal case study was selected and constructed as well as the specific CDA tools that I applied to analyse the data. The aim of my methodology (strategy of inquiry) was to help uncover the way in which public values were *expressed* and *produced* in texts but also to understand how they were *consumed*—that is, how public values were materialised in technology and new ways of acting and interacting. Methodologically, applying a CDA approach required a close analysis of key government texts and talks as well as drawing extensively on data from fieldwork to make sense of the meanings and conditions of production and consumption of those key texts. As is common in CDA and other reflexive approaches to qualitative research, the method of analysis involved an on-going process of moving back and forth between empirical and theoretical concepts. This reflexive process was, in turn, enabled by the richness of the data and the multiplicity of sources that I draw upon.

### **8.1.3 On context and the case**

A key theme that emerged from my choice of theory and methodology—public values, technology and CDA—has been the importance of elaborating *context*. Chapter Five began by providing a detailed history and socioeconomic context of Mexico's modernisation reforms in the area of foreign trade and its administrative central bureaucracy (Part One). From the 1980s to 2012 Mexico has embarked in a profound economic change, from being a closed economy to depending dramatically on foreign trade. In parallel, several initiatives at the federal level have set the path towards a more impartial and professionalized operation of central government agencies. Both trade policies and public administration reforms were regarded as important institutional forces that dynamically formed the historical and economic context for the development of the Single Window for Foreign Trade.



Part Two of Chapter Five documented the construction of the Single Window (2008-2012) and features of the previous technological developments that went back to 1997. The entry point to my case study has been the Ministry of the Economy, which, together with Customs, oversee the biggest part of Mexico's trade regulations. A key component of the case was the construction of a timeline that covered an 16-year period (1997-2012), that served to build the story in three different chronological phases and in light of the contextual developments exposed in Part 1 of the chapter. The timeline documented the key events (in sociotechnical terms) that serve to help understand the process of design and pre-implementation of the Single Window, based on a longstanding story of past developments in the Ministry. The case study therefore provided technical details and described the dynamics and efforts to construct the Single Window, including its technological features and its surrounding institutional forces. With mixed intermediate results and longstanding efforts to make it happen, the case concluded with a series of positive developments: in 2011, a Presidential Decree was enacted, backing the initiative politically. Contrary to initial expectations, the Single Window started operating in pilots from early 2012 and became mandatory on 1<sup>st</sup> June 2012. The chapter included a postscript written in September 2012 to briefly outline the main events that took place after June 2012 as well as future plans.

#### **8.1.4 Findings and implications**

Focusing on discourse was helpful to shed light on the types of public values that were imbued in the case as well as the diverse dynamics behind the discourse production, dissemination and materialisation. Chapter Six therefore empirically assessed what discourses on public values and technology were most prominent in the trajectory of the case and elaborated on their structural characteristics (meanings). The analysis revealed four distinctive discourses on public values and technology: 'technical efficiency', 'legality and honesty', 'robustness' and '(forced) cooperation'. Using the Presidential Decree that established the Single Window in 2011 as my main textual anchoring point, the chapter followed a systematic pattern of analysis to show three related themes for each group of public values: (i) what structural characteristics are associated to each group of public values (textual characteristics), (ii) how these

discourses are produced (where do they stem from), and (iii) how they are reproduced and consumed in technology over time (materialisation). The analysis showed that while the discourse on technical efficiency—commonly associated to the new public management ethos—is dominating, it co-occurs with and is reinforced by other values more broadly related to traditional public administration and the bureaucratic ethos—that is, legality, procedural fairness and honesty. In addition, the analysis showed that these four *analytically distinctive* discourses have been materialised in technology in different degrees, giving rise to tensions and contestation over time.

The extensive empirical analysis presented in Chapter Six led to further implications, raised in Chapter Seven. The case demonstrates that public values are not simply ‘given’ (i.e. as in Heeks 2002). They are dynamically articulated, constructed and materialized within ongoing processes of design and implementation of technology innovation. From this point, I offered two implications: first, the relation between public values and technology is one of *interdependence* and not dichotomy. Therefore, concerns that have tended to dichotomise NPM versus bureaucracy, or old public administration versus new public administration, are not supported empirically. In addition, the findings also showed that key public values associated with bureaucracy were not only prominent in the case but made stronger as a result of the process of technology innovation. Second, working with abstract notions of public values is difficult as public values take meaning in a given context. It has been only by elaborating on the structural characteristics of the discourses on public values and technology that the relation between them unfolds tensions, conflicts and negotiations.

The broader discussion presented in Chapter Seven—in light of the findings of Chapter Six—reinforces the idea that technology is not simply materialising public values in a neutral way; technology also shapes the diverse discourses of public values production, consumption and operationalisation. The way technology innovation is chosen and designed fixes future possibilities. The Single Window stresses automation, transparency and control, reinforcing the broader imperative of competitiveness. In so doing it, it leaves less room for flexibility, adaptability or participation. That certain public values are sustained while others marginalised over time is, in part, a consequence of power struggles, political negotiations and national imperatives—but it is also a result of the dynamics that technology innovation puts in place. This idea led to the theme that the

*relation between public values and technology is dynamic, political and dialectical* in character. The achievement and realisation of public values depends upon the political and national imperatives, institutional arrangements, technical expertise and organisational capabilities. Tensions are not going to disappear, and technology innovation may change, reinforce or create new centres of tensions between public values.

## 8.2 Research Contributions

### **Contributions to theory**

The thesis has brought together different bodies of literature in dialogue: public values theory, e-government and critical discourse analysis. While weak connections were found in the literature, these bodies of knowledge have not been combined before in a systematic way. In bridging these theories together, my contributions to theory are threefold: (i) to extend e-government research by providing a theorisation of the relation between public values and technology over time and in a particular context; (ii) to extend public values theory to account for technology, context and content relations; and (iii) to offer a theoretically driven methodology to study empirically the relation between public values and technology, based on the role of discourse in organising.

The first contribution relates to the knowledge gap that I presented at the beginning of this dissertation. While there have been notable advances in e-government theory, the relation between public values and technology remains particularly under-theorised. I claim that paying attention to the role of discourse in e-government organising is a valuable avenue for unfolding the relation between public values and technology innovation in government. In particular, it emphasises the political nature of the relation, an area that has received less attention in the literature of e-government.

The second theoretical contribution has been to move along the public values debate and the role of context in organising more generally. The inventory of public values compiled by Beck Jørgensen and Bozeman (2007) proved useful to map the most prominent values in the case using CDA. As the authors warned, the main disadvantage

of their approach is that “values are quoted out of context” (Beck Jørgensen and Bozeman 2007, p. 357). Chapter Six offered an extensive elaboration on the characteristics of commonly used—but usually elusive—public values, providing not only content but context and the relations between them. In turn, the particular usage of the CDA method in the study shows a useful theoretically driven methodology to unpack relations between technology and discourse in context. The three-level interlinked approach to study discourses in the particular case of public values and technology has shown that context is dynamically represented (i.e. Hayes and Westrup 2012), or *generative* (Salskov-Iversen *et al.* 2000). The way CDA theorises context proved to be useful to extend these lines of research.

Finally, the three-dimensional approach to analyse discourse offered a particular device to answer my research questions. Studies that seriously consider the discursive elements in e-government are extremely rare, despite the fact that much of the collective sense-making surrounding e-government agendas either manifests in government texts and talks or is reflected in them. In particular, the discursive lens served as a valuable aid to studying how claims about public values and technology draw from broader institutional discourses and country’s priorities, and how they are made to work in specific organisational levels and micro productions of discourses. The way of theorizing public values and technology innovation through CDA provides an analytical framework that can be extrapolated for future comparisons of similar projects and in different contexts. Moreover, this thesis demonstrates that the particular discursive lens that CDA offers can be successfully utilised in the study of technology and organising, despite its low recognition within the information systems field. More specifically, CDA can shed light on the ways technology innovation emerges and evolves over time, and to account for the ways it becomes interwoven with broader socioeconomic contexts and practices more generally (Orlikowski and Iacono 2001, p. 133). While this contribution holds theoretical importance in itself, it has methodological implications, and I shall present them in more detail in the next section.

## **Contributions to research methodology**

The main contribution of this dissertation to research methodology entails the *use of critical discourse analysis (CDA) as a method for studying relations of public values and technology*. CDA has become a well-established research methodology in organisation and management studies, although used in confusing and unarticulated ways (Leitch and Palmer 2010). I claim that my main methodological contribution has been in providing transparent and clear methodological criteria for practicing CDA in studies of public sector organising and technology. In addition, it is important to stress that my overall research design places CDA as part of a longitudinal case study. The latter is not usually found in CDA studies, and proved particularly useful to highlight the historical and social context of the case. Therefore, my methodological choices, in conjunction with their theoretical underpinnings, provide detailed material to inform newcomers into CDA that wish to conduct similar studies.

Despite its increasing popularity, critical discourse analysis—and in particular the textually oriented version I have used in my research—remains largely unknown within the field of public administration and information systems. My study provides a well-grounded research design that can be extended to similar concerns of public sector organising, and more generally, to studies of technology innovation and values. By incorporating a theorisation of other elements that affect the way discourses are produced, consumed and operationalised (i.e. public values and technology), my research design has contributed modestly towards the integration of multidisciplinary approaches that CDA theorists have called upon (Van Dijk 2003, p. 363).

## **Practical implications**

This thesis is about public policy decisions. Governments usually face challenges in several fronts: budgets, organisational capabilities, technical expertise and a pressing environment that will judge their legitimacy. Yet, ultimately, governments should be concerned about creating and delivering public value (Moore 1995, Bozeman 2007, Benington and Moore 2011a). Practically, this thesis informs public managers leading processes of e-government in a number of areas. It highlights the importance of

defining and reasoning about the types of public values that the government wishes to pursue. For example, ideas of transparency as well as efficiency were all raised in the discourses of government, but usually in a loose fashion. In relation, my research informs government leaders of potential inconsistencies that may emerge when trying to accommodate multiple public values. By revealing the complex, emergent and dialectical relation between public values and technology, this thesis raises awareness of the difficulty to align multiple public values in a *single* design. The case shows that while some public values can reinforce each other, it does not mean that they *will always be* aligned. Choices need to be made and trade-offs are likely to occur. My study stresses that public managers and policy makers need peripheral vision (Wright *et al.* 2012). Hence, a broader vision on public values and technology can help them to think more strategically and develop capabilities to help choose and protect public values more consciously.

Another practical contribution comes from documenting the ways in which the Single Window was designed and built from the specific political and historical context. By the time this thesis goes to print, several countries in the region, such as Chile, Peru and Costa Rica, have embarked in similar Single Window projects for foreign trade. Thus, this case should help to reinforce the fact that technology innovation is not neutral and it will not simply lead to expected outcomes. This is not a new finding in theoretical terms, but one that needs more attention in public administration circles: building a network-enabled government is more about the process and politics of institutional change, rather than about a set of technological prescriptions to achieve predetermined results. Some specific lessons emerged can be drawn from the case. First, building a Single Window requires coordination and collaboration; starting with those agencies that hold expertise and that have a history of past collaborations demonstrates to enhance interagency collaboration. Second, sustaining the initiative on previous achievements or technological expertise proves useful to secure the project. Third, leadership capabilities demonstrated to have played a crucial role. Investing in finding those actors that would prove to build more political support may be desirable. Finally, building and sustaining strong political support during the whole trajectory of the project is mandatory—perhaps, one of the strongest points in the case.

### 8.3 Reflection on my research approach

Theorizing public values and e-government through CDA has been fruitful yet challenging. I have tried to convince the reader that CDA offers an analytically useful methodology for understanding the relation between public values and technology (see my previous sections on contributions). Yet, this research approach has its limitations too. One could argue, for instance, that textual analysis is inevitably selective and incomplete (Fairclough 2003, p. 15-6). As a matter of fact, unpacking *all* potential intertextual and interdiscursive aspects of a particular text is not only an impossible task (i.e. Keenoy and Oswick 2003, p. 140), but it would also prove useless: the value of critical discourse analysis relies on illuminating a particular inquiry that is defined by the researcher. This is not to say that any formal analysis of texts is theory-free (Chouliaraki and Fairclough 1999, p. 7). The analyst's theoretical preoccupations define what data is selected and how it is perceived; in other words, the analytical categories that emerge out of the selected texts are defined by the research questions and the research focus (theoretical preoccupations) of a particular project. In the case of my research, my theoretical preoccupations have led me to draw on those linguistic features that could help elicit the linkages between public values and technology innovation, building from existing research on public values (Bozeman 2007) and e-government theory (Fountain 2001).

In addition, I could have covered or selected other texts for the detail-oriented textual analysis. For example, I could have focused on reactions reported in media texts (i.e. Vaara and Tienari 2008), or on selecting a particular public speech or an interview text. However, I do draw on media commentaries as additional material to enhance the ways on how these texts are produced, consumed and interpreted in a broader sense. I shall insist that the texts I selected are only instances of a larger body of texts and social relations that are useful to study the trajectory of the discourses on public values and technology, its reasons for production and consumption over time.

A specific challenge of CDA entailed placing specific texts within their social contexts. This has certainly been the most difficult part of my research inquiry. Even though I have complemented the analysis with additional material gathered in the fieldwork, the

reflexive and interpretative process can be too numb or relative to inform actions. The strengths of CDA in this respect have relied on its tools for identifying interpretations that went beyond the surface level of texts. In sum, applying CDA entailed a longstanding *critical* and *reflexive* research exercise. This is, perhaps, the most powerful feature of the method as well as its main challenge (see for example Phillips *et al.* 2008, p. 786). Working with my empirical data entailed a reflexive process of going back and forth between the theoretical ideas and the empirical analysis, without a clear ‘step-by-step’ method.

I would have ideally liked to construct a comparative analysis that went beyond a single case design. The intense and demanding effort to analyse and get access to data proved far complex. The trade-off would have been losing the richness of the case elaboration as well as its deconstruction using CDA. A further limitation has been in applying only a limited number of linguistic tools, out of the broad range of devices that are available from CDA. In particular, I would have liked to apply more extensively other computational tools to make sense of the relations and discursive features such as vocabulary. For example, specialised software packages, such as *Alceste* and *TLab*, can perform automated content analysis to check for robustness and consistency in large corpora of data (see for example Schonhardt-Bailey 2012). Although I do plan to extend my empirical work using features like these in the future, this exercise would be only complementary, and in any case, it does not imply leaving aside the role of the analyst in making sense of “automated” results.

A further limitation is related to my unit of analysis and its relation with public value theory. I have deliberately centred my analysis on the central government in order to understand how it made sense and operationalised a set of public values. While I have incorporated news articles and opinions from external stakeholders to some extent (i.e. private companies in trade or customs agents), I have limited the scope of my research to observe, talk with and gather information from the champions of the project. Consequently, I have acknowledged this in my research methodology chapter. Further research should expand on the “public” side of public values (see the next sections).



## 8.4 Future research

### **Competing rationalities and institutional logics**

Public values implicated in technology innovation in the public sector may be conflicting at times. Although I have drawn on some aspects of competing rationalities and the work based on institutional theory (i.e. Fountain 2001), I have not particularly discussed interesting concepts coming from the scholarly work on *institutional logics*. Therefore, research on institutional logics and competing rationalities in organising (Friedland and Alford 1991, Townley 1997, 2002, Thornton and Ocasio 1999, Reay and Hinings 2009), and in particular, in studies of organising and technology (Avgerou 2002, Hayes 2008, Hayes and Rajão 2011) appears as a fruitful theoretical lens to apply to the Mexican case. For example, parallels could be traced with the work of Friedland and Alford (1991) and what they refer as “market rationality” and “bureaucratic rationality”. The discourses on technical efficiency and legality that I identified in my work seem closely related to their definitions. In light of the richness of the case I studied, future work could analyse the existence of competing logics for different purposes. For example, to trace the processes of enactment that are not easily uncovered if one places the sole attention on instrumental or market rationality.

### **Legitimation and resistance**

My focus has been in understanding the visions, plans and public value constructs from the point of view of a single federal agency (the Ministry of the Economy) and to a lesser extent, of Customs. Further data could analyse how different discourses become legitimised, contested or resisted by other Ministries and stakeholders. This has been a particularly salient cue from the process of inter-agency cooperation and the discourse on ‘forced’ cooperation that has not been fully materialised among all the participants.

The case leaves room to understand in more detail how people resist technologically-induced institutional changes and what power struggles are experienced by specific actors once the Single Window is fully implemented. In particular, the Mexican case offers an interesting setting to study the power struggles between central and local offices, and between government and certain stakeholders like the Customs Agents

Associations. My dissertation touched only briefly on these points, given my primarily interest in understanding first what and in which ways discourses on public values were articulated by the actors in charge of the design and implementation of the case. Future research could explore how power dynamics influence the enactment of certain public values over others through everyday actions, and how power relations shape institutional change from diverse angles (i.e. local versus central, between different agencies). The work of Thomas and Davies (2005) and Thomas *et al.*(2011) on the micro-politics of power-resistance, or the work on critical genre analysis (Levina and Orlikowski 2009) could be useful resources to complement my critical discourse analysis approach.

### **Broader discussions on public values**

There are a number of current discussions on whether public values vary across countries with different political systems and national cultures (Beck Jørgensen and Vrangbæk 2011), or whether certain public values can be universal (Kamto 1997, p. 303, Kernaghan 2000, p. 100). Usually, these studies rely on the use of surveys as the main method to collect data, and point to the empirical difficulties of comparing results. CDA could be applied to other settings to compare whether one can find similarities or differences with the findings of the Mexican case. For example, a CDA approach could be applied to other similar Single Window initiatives, such as those ongoing in Latin American countries, or to more disparate ones, such as South Korea and Singapore, which have already implemented similar initiatives in the past. In doing so, one could compare if the clusters of public values hold despite the differences in context and to move along public values discussions in the field.

### **Citizen's perceptions**

Public values are ideals about the collective aspirations of citizens (Moore 1995, Benington and Moore 2010). Future studies could focus on citizens' perceptions about the different dimensions of public values implicated in the case. For example, it would be particularly interesting to study public perceptions on the effects that technology has on discretion of street-level bureaucrats to contribute to ongoing debates on the subject (Bovens and Zouridis 2002, Jorna and Wagenaar 2007, Wenger and Wilkins 2009, Smith 2011). The tensions surrounding discretion, procedural fairness and justice in the

Mexican case present an interesting opportunity to study the perceived effects of the programme on different sets of public values.

### **Hybrids in public management**

The findings have revealed that, instead of dichotomies, public values are a result of a mix between traditional public administration (bureaucratic *ethos*), new public management or post-bureaucracy. The idea of *hybridisation* has been at the centre of attention in public administration circles (Olsen 2006, Clegg *et al.* 2011), although more work is needed to understand the consequences of hybridisation on the role of public administration in providing public services (Van Gestel *et al.* 2012 in their call for papers). Future research could build on recent contributions in the particular area of hybridity and e-government (Bloomfield and Hayes 2009) to account for public values. In particular, it would be interesting to study the consequences of new forms of control and accountability that are mediated through technology as well as the hybrid work practices emerging from the public-private-partnership in the case.

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## **Appendix I: Detailed sources and significance of data collection**

This appendix explains the different collection methods that I have used, and their significance for the research inquiry. As such, it complements in detail the data collection section that I have included in Chapter Four. The next sections cover in detail the following categories: in-depth interviews, direct observation, and extensive document and archival collection. Let me just remind the reader that my fieldwork included the following: an initial 8 month-exploratory study that I conducted from August 2006 to March 2007. This initial study was decoupled from the current research and it was part of a project I led as research associated in Telecom-CIDE. With permission from the Mexican government, I do draw on these data as it has been useful for the research. Data collection that was relevant for my current PhD project took place during two fieldwork trips: one in spring of 2009 (March to June), and in the spring of 2010 (May and June). Follow up interviews, index of news and document collection were conducted since then.

### **In depth interviews and fieldwork notes**

As indicated in Chapter Four, I conducted **42 in-depth interviews** with **35 single individuals**, most of them face to face, with an average time of one hour to one hour and half per interview. In all cases, interviewees were informed about the purposes of the project in advanced, either via email or orally at the moment of the interview (i.e. Walsham 2006, p.323).<sup>126</sup> Interviewees were given the option of keeping the interviews confidential and/or anonymous. All interviews were conducted in Spanish, recorded with the participants consent, and transcribed maintaining its original language. Materials were only translated when necessary for quotation.

The process of interviewing during fieldwork was largely an on-going one. Looking at interview materials and relevant literature at the same time was useful for adapting questions and follow up interviews. As well known for qualitative researchers, the time spent in the field was highly consuming and intense. It even included dealing with unexpected events, such as carrying out interviews wearing masks at the time the swine flu surprised Mexico in 2009. A daily summary of the main reflections emerging from

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<sup>126</sup> Following common ethical guidelines on social science research, interviewees were provided with information and the purpose of the study the author was conducting.

the empirical work were kept in the fieldwork diary and then used when recapping the case study.

Given the objectives and focus of the research (eliciting discourses on public values and technology on trade regulations in Mexico), the interviews focused on five key categories of informants: (i) Mexican public managers in charge of international commerce procedures and regulations at the federal (national) level, more precisely, the Vice-Ministry of Economy and the team at the General Direction of Foreign Commerce; (ii) public servants involved in the design and implementation of the Single Window at SAT/Customs; (iii) other public servants involved with the general implementation of the digital agenda in Mexico (E-government Unit at the Ministry of Public Function); (iv) external stakeholders (OECD team, IT providers); and (v) academics with expertise in e-government and technological platforms for trade.

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Ministry of Economy Vice-Ministry of Trade and Industry* DGCE* General Office of Informatics* Sub Offices of Informatics* General Office of International Trade Information* Offices of Norms* General Coordinator of the Federal Agencies* 32 Federal Agencies Other sub-agencies General Direction of Informatics (DGI)* COCEX: International Trade Commission (SHCP, SAGARPA, SEMARNAT, SALUD, SRE, SAT, CFC)*
Ministry of Finance and Public Credit Customs Administration*
Ministry of Public Function (SFP) E-Government Unit*
SAGARPA* SEMARNAT SALUD SEDENA
SENER SEP
INAH INBAL International Trade Associations CAAAREM*
External providers INFOTEC Other IT consultants

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**Table A.1: Participants with direct responsibility in the Single Window project. Note:**

\* Indicates areas/organisations where I have conducted interviews.

The interviews offered key insights in a number of areas: (a) main aims, drivers, and motivations to use networked technologies in government; (b) role and specifications of the main actors involved; (c) key episodes that happened during the different phases of the project; (d) general successes and challenges; (e) main interpretations of value derived from technology according to the actors. Table A.1 summarizes the main actors involved in the project and the areas and organisations covered by the interviews.

**Appendix II** offers a comprehensive list of the interviews carried out as part of the research.

### **Direct Observation and meetings**

During fieldwork I spent most of the time working from an office within the Ministry of Economy. The insights that I gained while being there were particularly useful for constructing the context of the case, making references to culture and also to make sense of the organisational capabilities and features that can be attributable to the Mexican bureaucracy. Informal interviews were also held with a number of public officials during that time. I also participated in three key meetings during spring 2009. These meetings entailed an in-between form of direct and participant observation. The latter, because while on the Ministry, I was invited to intervene with comments and views on different issues. Although these events occurred only in few occasions, I decided to group them under the direct observation category for simplicity.

### **Documentary and archive data**

Texts are particularly important for my research design and data analysis. Hence, additional data were gathered from official annual reports, official documents and speeches, government mission statements, and news from local newspapers and the internet. The following list presents the main internal sources that I count on:

- **History of SICEX:** A 35 pages, internal document from the SE that describes the origins, main drivers and component of the platform that was launched in 1996 and won the national public administration prize in 1999;

- **Memoirs of ‘Towards a paperless administration 2000-2006’**: an internal, 450<sup>127</sup> pages-long document that covers the progress and evolution of SICEX and related ICT infrastructure for foreign trade procedures, its main drivers, logics and actions taken in relation to the project;
- **The presidential Decree** that establishes the creation of the Mexican single window for foreign trade (January 2011) (5 pages long);
- **The Presidential Decree** that gives facilities to foreign trade operation (31 March 2008);
- The **terms of reference** of the open public tender sponsored by Customs (September 2010): a 81 pages long text that offers in detail the terms and conditions for the acquisition of the services to implement the single window; it includes more than 150 pages of technical annexes;
- **Mexico’s National Development Plan 1995-2000**
- **Mexico’s National Development Plan 2001-2006**
- **Mexico’s National Development Plan 2007-2012**
- A **report** from an independent citizen witness procedure (“*Testigo Ciudadano*”), that evaluates the acquisition process for the single window;
- **6 general texts** downloaded from the single window website in January 2012 that explain what the single window is, what the main objectives and benefits are, and how it is operated <https://www.ventanillaunica.gob.mx/vucem/SobreVU/SobrelaVU/index.htm>;
- **13 internal power-point presentations** in electronic format that supports the official strategy and objectives of setting up the unique digital window for foreign trade;
- **7 internal power point presentations** of 50 to 80 slides each and 5 excel files containing the results and analysis of the reengineering exercise of trade procedures that a private consultant conducted for the Ministry of Economy in 2010;

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<sup>127</sup> The document presents a general body of 115 pages and more than 300 additional pages of annexes that expand the main issues covered in the report.

- **15 official presentations and speeches** from the leaders of the one stop-shop project that emphasise goals, benefits and plans (mainly from ME and Customs, from 2010 and 2011);
- **75 informative sheets** downloaded from November 2011 until February 2012 from the digital window website, informing about several themes: changes in law and regulations, user manuals, examples of digitisation, guidelines to use the content of the website, and process flows of some procedures (<http://bit.ly/ybBQgR>);
- **5 workshop presentations** conducted in the Latin American and Caribbean Regional Meeting on International Trade single Windows, organized by the Latin American and Caribbean Economic System (SELA) during 2010 and 2011 (3 from ME, 1 from Customs, and 1 from the private sector).
- **95 news** articles downloaded from local newspapers, covering the period from January 2009 to July 2012 (see Appendix III for a list of sample articles).

Further documents, data and indicators that help contextualizing the initiative include:

- Ministry of the Economy sectoral plans, competitiveness agenda, and other documents that outlines the Ministry value mission and goals in general and in foreign trade;
- The final reports conducted in each of the 3 Latin American and Caribbean Regional Meetings on International Trade Single Windows, organized by the Latin American and Caribbean Economic System (SELA) during 2010 and 2011;<sup>128</sup>
- The World Trade Organisation Trade Policy Review of Mexico (2009): report that outlines the country's main policy, progress and issues of Mexico's regulation of foreign trade;
- The OECD E-Government Survey (2005): designed and conducted between 2002 and 2004, the survey covers federal public servants' attitudes on different

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<sup>128</sup> These reports include the review of the different experiences of international trade single windows in Latin America and represent a useful material for comparison purposes.

e-government dimensions, such as objectives and main drivers, perceptions about collaboration, and role of public officials in embracing change;

- The OECD chapter on E-government and modernisation reforms in Mexico (2011): study conducted during 2010 and published in 2011 on the advances of the digital government agenda in Mexico. The report also mentions the *single window* studied in this research and further updated data from a survey on patterns of collaboration in e-government projects in Mexico. (I have also interviewed the people that participated in this project);
- Mexico E-Government Unit: survey of ICT adoption in federal agencies (2006-2010), and within the Ministry of Economy;

Whilst it has not been possible to collect first hand data of Mexican public opinion, I employ other valuable sources as a general context to institutional and political dimensions in the country. News articles constitute an important source of proxy for the public's reaction to the single window design and implementation. In this respect, I followed to strategies. First, I read a diary newsletter that the Ministry compiled summarizing the headings and relevant info of the main local newspapers. I have done so from June 2010 to July 2011. Second, in October 2011 I scanned the main newspapers in Mexico, following a simple Google search. I collected about 15 news articles with references to the project and customs modernisation. From then on, I set up a Google alert that would scan the news. I usually clicked in all of them and only archive those referring to the Mexican case. I enclose in a separate appendix the complete list of articles.

I also draw from further secondary data from surveys that compile public perceptions on democracy and governance indicators in Mexico. Particularly, the following:

- *The World Bank Governance Indicators, version 2010*: The dataset reports on six broad dimensions of governance for over 200 countries over the period 1996-2010; it includes six categories: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption.



- Mexico at the Latin American Public Opinion Project (LAPOP) -University of Vanderbilt: survey that compiles public perceptions on democracy and political values in regularly conducts on the country.

Finally, I relied on the work of local academics to address the main trends of the administrative and political modernisation in Mexico from mid 1980s to the present (i.e. Arellano-Gault 2000, 2010, Guerrero and Arellano-Gault 2003, Pardo 2009, Moreno-Brid *et al* 2009, Moreno-Brid and Ros 2009, Cejudo 2008).

## Appendix II: List of Interviews

Below is the full list of interviews carried out as part of this research, including when, with whom and for how long the interviews were conducted. This appendix complements the first part of Appendix I, and the information contained in Chapter Four. Names are not included to protect—as much as possible—the anonymity of those interviewed. The numbers in the first column are the keys used in the empirical chapters (notably Chapter Five and Six). The third column is included as in some cases there was more than one person in the interview, but that was not counted as a separate one.

<b>Year 2009</b>				
<b>#</b>	<b>Date</b>	<b>Position</b>	<b># of people</b>	<b>Length of Interview (in minutes)</b>
1	26-Mar-09	Directora Industria Automotriz, Ministry of Economy	1	90
2	30-Mar-09	Director de Industria Metalmecánica, Ministry of Economy	1	30
3	07-Apr-09	Director General de Comercio Exterior (DGCE), Ministry of Economy	1	60
4	14-4-09 to 21-04-09 (various interviews)	Director de Programas de Fomento, Ministry of Economy	1	180
5	24-Apr-09	Director General de Industrias Pesadas y de Alta Tecnología; Director de Industria Metalmecánica; Directora Industria Automotriz, Ministry of Economy	3	50
6	07-May-09	Director Industria Manufacturera Exportacion, Ministry of Economy	1	45
7	07-May-09	Directora de Información de Comercio Exterior (DG CE)	1	60
8	07-May-09	Secretario Tecnico de la COCEX, Ministry of Economy	1	67
9	12-May-09	Direccion General de Informática, Ministry of Economy	2	47
10	12-May-09	Subdirectora-Coordinación General de Delegaciones Federales, Ministry of Economy	2	40

11	12-May-09	Directora de Desarrollo Informático- Dirección General de Informática, Ministry of Economy	1	20
12	13-May-09	Director General de Comercio Exterior, Ministry of Economy	1	47
13	14-May-09	Administradora de Operación Aduanera 7, Customs	1	65
14	14-May-09	Director General de Economía Digital, Ministry of Economy	1	45
15	15-May-09	Vicepresidente, Instituto Nacional de Estadística y Geografía (INEGI) (Former Deputy Minister of Trade and Commerce in the Ministry of Economy)	1	55
16	18-May-09	Former Director General de Comercio Exterior, Ministry of Economy	1	104
17	20-May-09	Former Administrador de operación aduanera 7, Customs	1	32
18	20-May-09	Asesor Informático, Coordinación de Asesores, Ministry of Economy	1	36
19	21-May-09	Subsecretaria de Industria y Comercio, Ministry of Economy	1	20
20	01-May-09	Subdirector de Programa de Fomento, Ministry of Economy	2	90
<b>Year 2010</b>				
<b>#</b>	<b>Date</b>	<b>Position</b>	<b># of people</b>	<b>Length of Interview (in minutes)</b>
21	12-May-10	Director General de Comercio Exterior (DGCE), Ministry of Economy	1	45
22	14-May-10	Director General de Comercio Exterior (DGCE), Ministry of Economy	1	64
23	25-May-10	Director General de Comercio Exterior (DGCE), Ministry of Economy	1	37
24	25-May-10	Directora de Información de Comercio Exterior, Ministry of Economy	1	40
25	25-May-10	Director de Programas de Fomento, Ministry of Economy	1	50
26	26-May-10	Subsecretaria de Industria y Comercio, Ministry of Economy	1	38

27	26-May-10	Director Unidad de Gobierno Digital, Ministry of Public Function	1	42
28	26-May-10	Director de Promoción e Integración de Gobierno Digital, Ministry of Public Function	1	45
29	27-May-10	Subdirector de Negociaciones Multilaterales y Regionales Ministry of Economy	1	45
<b>Year 2011</b>				
<b>#</b>	<b>Date</b>	<b>Position</b>	<b># of people</b>	<b>Length of Interview (in minutes)</b>
30	8-Apr-11	Consultant in red tape and regulatory reform, Expert in Mexico, OECD	1	50
31	31-May-11	Director E-government Unit, OECD	1	30
32	4-May-11	Director Unidad de Gobierno Digital, Ministry of Public Function	1	45
33	6-June-11	Consejero comercial, ProMéxico, Mexican Trade Commission at the United Kingdom	1	50
34	29-Sep-11	Professor FLACSO, Argentina, expert in e-government	1	90
35	30-Sep-11	E-Government Programme Director, Universidad de San Andres	2	45
36	26-Oct-11	Coordinador de Asesores, Dirección General de Minería, Ministry of Economy	1	60
37	07-Nov-11	Director General de Comercio Exterior, Ministry of the Economy	1	87
38	05-Dec-11	Directora de Vinculación Institucional, SAGARPA	1	120
<b>Year 2012</b>				
<b>#</b>	<b>Date</b>	<b>Position</b>	<b># of people</b>	<b>Length of Interview (in minutes)</b>
39	21-Mar-12	Mexican Ambassador to the United Kingdom	1	47
40	26-Mar-12	Director de Programas de Fomento, Ministry of Economy	1	90
41	02-Apr-12	International trader, Mexican private company	1	35

42	12-Jul-12	Director General de Comercio Exterior, Ministry of Economy	1	90
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### Appendix III: Sample of news articles

	Source	Title	Date
1	Uniradio	Ventanilla Única de Comercio Exterior todavía está en proceso de adecuación	16/02/2012
2	Uniradio	Aseguran que se reduce burocracia con VUCEM	14/02/2012
3	El Universal	Dificultades para el CE	14/06/2011
4	El Universal	SAT va tras empresas de comercio exterior	06/04/2011
5	El Universal	Recibe SE propuestas en comercio exterior	04/07/2011
6	El Universal	Aduanas investiga actos de corrupción	09/02/2010
7	El Universal	Comercio representa 61% del PIB	26/07/2011
8	El Universal	Normatividad excesiva limita comercio de México	12/01/2012
9	El Universal	La regulación del comercio exterior, en vía de rediseño	11/09/2008
10	El Universal	Ingreso honesto cierra la puerta a ingreso ilegal	16/01/2012
11	El Universal	Aporta comercio exterior 23% de impuestos al país: Aduanas	16/10/2008
12	Noreste	Tendrán los exportadores ventanilla única obligatoria	02/03/2012
13	El Universal	Cuesta millones proteger aduanas del crimen	16/12/2011
14	El Universal	Apoyarán a 150 Pymes para tener presencia en el exterior	12/02/2012
15	El Universal	Con tan sólo cuatro pasos se agilizan trámites de comercio	20/01/2012
16	CAAAREM Gaceta AAAG: El Tema del Mes	Avances de la Ventanilla Única de Comercio Exterior Mexicano (VUCEM)	01/06/2012
17	El Economista.mx	Apresuran Ventanilla Única	02/04/2012
18	El Universal	Promueven Comercio Exterior entra las Pymes	01/01/2006
19	El Universal	Calderón envía Ley de Firma Electrónica al Senado	09/12/2010
20	CNN	Preocupa el proyecto VUCEM	14/10/2010
21	La Crónica	Aplazan entrada de ventanilla única CAAAREM	24/02/2012
22	El Diario	Explicara SAT aquí su nuevo esquema de certificación	12/04/2012
23	El Economista.mx	Gobierno Prefiere las "rudas" de Panasonic	03/04/2012
24	El Mañana	Buen inicio en foro de Comce	15/03/2012
25	El Mañana	Destacan beneficios de la Ventanilla Única	26/05/2012
26	La Nación	El porqué del trabajo interdisciplinario	15/05/2012
27	El Universal	Exigencias de exportadores	18/05/2012
28	El Universal	Se desacelera el comercio exterior, dice el Comce	17/05/2012
29	El Universal	PRI no apoyara el cierre de secretarías	12/11/2009
30	El Economista.mx	Ven ventanilla única regional	28/05/2012
31	El Economista.mx	Ventanilla única de comercio va sin contratiempos: SE	05/06/2012
32	El Siglo de Torreón	Frenan a Pymes altos costos de ventanilla única	05/03/2012
33	Grupo Formula	Con ventanilla única, se reduce tiempo para la gestión de trámites en 90%: SAT	22/03/2012
34	IDC Online	Primeros resultados de la ventanilla única	04/06/2012

35	Latin America Data Base	President Felipe Calderon Replaces interior Secretary Fernando Gomez Mont Appoints New Economy secretary	21/07/2010
36	Latin America Data Base	World customs organization recognizes Mexico for efforts to combat counterfeit medicines	30/06/2010
37	Latin America Data Base	President Felipe Calderon Appoints Agustin Carstens New Central Bank Head; Two Cabinet Changes Announced	16/12/2009
38	Latin America Data Base	President Felipe Calderon Overhauls Cabinet	09/09/2009
39	Latin America Data Base	Nobel Economist Riles President Felipe Calderon's Administration With Criticism Of Economic Policies	02/12/2009
40	El Universal	La regulación del comercio exterior, en vía de rediseño	11/09/2008
41	Council on Foreign Relations	Latin Americas Moment: North American Competitiveness	18/05/2012
42	ManzanilloXport	Ahorrara 9 Tramites la Ventanilla Única	15/03/2012
43	MexicoXport	Inicia el Viernes ventanilla única	29/05/2012
44	LinkedIn	Problemas en importaciones y exportaciones en Mexico	29/03/2012
45	El Golfo	Daria ventanilla ventaja al País	09/04/2012
46	El Siglo de Torreón	Reclaman por ventanilla única	16/03/2012
47	Reforma	Aplazan inicio a junio de la ventanilla única	24/02/2012
48	El Universal	Normatividad excesiva limita comercio de México	12/01/2010
49	El Economista.mx	Se "cae" el sistema de las aduanas	26/01/2010
50	El Siglo de Torreón	Da STA luz verde a la ventanilla única	29/03/2012
51	El Sol de Tijuana	Ventanilla única del SAT, incapaz de manejar nuestros volumen, dicen	09/05/2012
52	T21.com.mx	Opcional el uso de la ventanilla única hasta junio	29/02/2012
53	T21.com.mx	Sin marcha atrás uso obligatorio de ventanilla única y COVE	06/05/2012
54	Tiempo Logístico	Capacidad informática, vital para la ventanilla única: SDI Cointer	09/03/2012
55	La Nación	Una herramienta con tinte paraarancelario	13/03/2012
56	Uniradio	Continua rezago en aplicación de factura electrónica COVE	08/05/2012
57	El Universal	Diversificación e inclusión de PyMES, logros en comercio exterior	28/08/2007
58	Uniradio	Ventanilla única de comercio exterior todavía está en proceso de adecuación	16/02/2012
59	MexicoXport	Ventanilla única implica mas tramites	30/05/2012
60	El Economista.mx	Volatilidad y corrupción atrasan crecimiento: PwC	25/04/2012
61	Mexico Exporta - Secretaria de Economía	A la Vanguardia con la Ventanilla única de comercio exterior	01/09/2011
62	Yucatán Noticias	Merida sede de la sesión del consejo directivo nacional de la confederación de asociaciones de agencias aduanales	31/05/2012





## Appendix IV: Published work and work in progress (2007-2012)

### Journal Articles

Cordella, A. and **Bonina, C.**, 2012, A Public Value Perspective for ICT Enabled Public Sector Reforms: A theoretical reflection, *Government Information Quarterly*, Volume 29, Issue 4, Pages 512–520.

### Book Chapters

Martin, A. and **Bonina, C.**, Open Government and Citizen Identities: Promise, Peril, and Policy, in *Open Development: Technological, Organizational, and Social Innovation in International Development*, edited by M.L. Smith and K. Reilly, MIT Press, Forthcoming.

**Bonina, C.**, 2012, Building ICT Critical Infrastructures for Trade Regulations: Implications from a National Initiative in Mexico, in *ICT Critical Infrastructures and Society*, M. Hercheui, D. Whitehouse, W. McIver, and J. Phahlamohlaka (Eds.), International Federation for Information Processing (IFIP), Springer, pp. 22-33.

Mariscal, J. and **Bonina, C.**, 2008, Mobile Phone Usage in Mexico: Policy and Popular Dimensions, in *Handbook of Mobile Communication Studies*, James Katz (Ed.), MIT Press, Cambridge: MA.

Mariscal, J., **Bonina, C.** and Luna, J., 2007, New Market Scenarios in Latin America, in *Digital Poverty: Latin American and Caribbean Perspectives*, Mariscal, J. and Galperin, H. (Eds.), Practical Action Publishing/IDRC, Canada.

### Conference Papers

**Bonina, C.**, 2012, Technologies are more than tools: Searching for public values within e-government and public sector reforms, *28<sup>th</sup> European Group of Organisation Studies (EGOS) Colloquium Proceedings*, Sub-theme 6: Organizing the Public Sector, Helsinki, Finland, 5-8 July.

**Bonina, C.**, 2011, The Internet in Government: on bureaucracy, public value and the reorganisation of the state, *The Sixth Organization Studies Summer Workshop*, Abbaye des Vaux de Cernay, France, May 25–28.

**Bonina, C.** and Cordella, A., 2010, The Internet and Public Bureaucracies: towards balancing competing values, *Proceedings of Internet, Politics, and Policy 2010: An Impact Assessment*, Oxford Internet Institute, University of Oxford, 16-17 September.

**Bonina, C.** and Cordella, A., 2010, Public sector and ICT: beyond the private sector rationale, *3rd Latin and European Meeting on Organization Studies (LAEMOS) Proceedings*, Sub-Theme 7, Buenos Aires, April 7-10.

Martin, A., **Bonina, C.** and S. Goldchluk, 2010, Constructing and disrupting transparencies: ICTs and identity management in Latin America, *3rd Latin and European Meeting on Organization Studies Proceedings (LAEMOS)*, Sub-theme 4, Buenos Aires, Argentina, April 7-10.

**Bonina, C.** and Cordella, A., 2009, Public sector reforms and the notion of ‘public value’: implications for e-government deployment, *Proceedings of the 15th Americas Conference on Information Systems (AMCIS 2009)*, San Francisco, August 6-9, 2009.

**Bonina, C.** and Cordella, A., 2008, The new public management, e-government and the notion of 'public value': lessons from Mexico (joint with A. Cordella), *Proceedings Annual Workshop of the AIS Special Interest Group for ICT in Global Development* (GlobDev), Paper 11, Paris.

**Bonina, C.** and Rivero-Illa, M., 2008, Mobile Telephony in Latin America: new opportunities to reduce poverty?, *Proceedings of the 14th Americas Conference on Information Systems* (AMCIS 2008), Toronto, Canada.

### **Work in progress**

Public values, information technology and public sector organizing: a critical discourse analysis of trade regulations in Mexico

Accounting for open data and social media: principles for protecting identity in Latin America (joint with Aaron Martin)

Confronting the elusive: using critical discourse analysis to study public values in context

The *affordances* of transparency and information technology: lessons from Mexico and Argentina