

**THE ROLE OF INFORMATION SYSTEMS IN LEGISLATION  
LED REFORM: A CASE STUDY IN THE CONTEXT OF THE  
NEW MUNICIPAL RATES ACT OF SOUTH AFRICA**

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**Michael Twum-Darko**

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## LIST OF ACRONYMS USED

LLR	Legislation Led Reform
ANT	Actor Network Theory
DPM	Due Process Model
ST	Structuration Theory
PRA	Property Rates Act
CAMA	Computer Assisted Mass Appraisal
ICT	Information and Communication Technology
BCC	Bangalore City Corporation
PTS	Property Tax System
SAS	Self-Assessment Scheme
TVR	Total Value Rating
SVR	Site Value Rating
MDP	Municipal Development Programme
RFI	Request For Information
RFP	Request For Proposal/Product
PDR	Project Definition Report
PIR	Project Identification Report
ExCo	Executive Committee
UniCom	Unicity Commission
CCT	City of Cape Town
OPP	Obligatory Passage Point
GenVal	General Valuation
RST	Regional Service/Sales Tax
KMC	Karnataka Municipal Corporation
ARV	Annual Rental Value
ADB	Asian Development Bank
ILC	Iowa League of Cities
ISAC	Iowa State Association of Counties
IMF	International Monetary Fund

NA	National Parliament
NCOP	National Council of Provinces
MEC	Executive Council Members
SADC	Southern Africa Development Community
GIS	Geographical Information System
BATF	Bangalore Agenda Task Force
INI	Information Infrastructure
MPLG	Ministry of Provincial and Local Government
SAPOA	South Africa Property Owners Association
VD	Valuation Department
BC	Buffalo City

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## **Abstract**

This thesis examines the role of an information system in the implementation of the new Property (Municipal) Rates Act (PRA) 2004 of South Africa as an example of Legislation Led Reform using, as the case study, the property rates policy reform framework implemented as the General Valuation (GenVal) 2000 project at the City of Cape Town. The study applies a range of social theories such as Actor-Network Theory, the Due Process Model, and Structuration Theory. These theories were utilised in conjunction with historical and contextual analysis, tracing the emergence of the explicit socio-political conditions, within which the information system was to be deployed.

Legislation led reform is viewed from three different perspectives. First, by examining the network of aligned interests; second, by analysing the inclusion of a new actor in an existing network; and third, by focusing on the institutionalisation of the network. The research approach is interpretive, using a single-case study as the research methodology. The rationale and justification for this particular approach, along with the empirical processes followed for data collection, are discussed. A conceptual framework is used to guide and direct the research process.

The empirical results are discussed in three parts. The first part analyses and interprets the case study from the perspective of Actor Network Theory by drawing on the concept of the four 'moments of translation'. The analysis focuses on the formation, growth and stability of the network of aligned interests, *i.e.*, the 'actor-network' created because of the reform of the old Municipal Ordinances of apartheid South Africa to a new property valuation and rates policy at the City of Cape Town. The second part analyses the inclusion of an information system as an actor in the existing network and discusses its ability to contribute towards the stability

of the network. The third and final part analyses the extent to which the institutionalisation of the use of the information system contributes towards the institutionalisation of the network.

The analysis and interpretation of the Case Study results show that the inclusion of a new actor in an existing and stable network of aligned interests follows a process where interactions between key actors are instrumental. These interactions focus on the interest of the new candidate actor and its proposed value to the network, and support the collective assessment of these through consultation/debate to determine the new actor's legitimacy. This is validated collectively by the actors in the network to ensure its relative importance in relation to the priorities of the actor-network.

The findings also support the notion that the institutionalisation of a network of actors with aligned interests can be supported by an appropriate information system. Such an information system would have, as inscribed program of action, the functionality which would be derived from the appropriate legislation. When enrolled as an actor into the existing network, the information system ensures, through its routine use, that all actors in the network interpret certain collective interests (related to the inscribed program of action) consistently and apply them uniformly. As the information system becomes entrenched in the network, it has an increasing reciprocal influence on the network. In terms of actors' interests, standardisation and new ways of communication, the information system becomes a definitive source and organisational memory. This increases the stability of the network and the institutionalisation of the system as technology-in-practice, leading to increased irreversibility, and therefore increased institutionalisation of the network.

These results are captured in a general framework which can be regarded as a refinement of the original conceptual framework. Based on the general framework, a normative approach to introduce information system support for legislation led reform is proposed and discussed.

# CHAPTER 1: INTRODUCTION

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### 1.1 INTRODUCTION

This Chapter of the thesis introduces the research problem and discusses three relevant theories to be used as lenses to understand and interpret the problem. The key aim of this thesis is to examine the influence of an information system on the implementation of the new Property (Municipal) Rates Act (PRA) 2004 of South Africa as an example of Legislation Led Reform using, as the case study, the General Valuation (GenVal) 2000 project at the City of Cape Town (see Chapter 5). The study further investigates the more general role an information system can play in implementing reform driven by legislation. From the findings, generally applicable guidelines for legislation led reform in South Africa, and more generally Africa, are developed during the study and are discussed in Chapters 6 and 7.

This Chapter contains five sections. The first section presents the justification of the topic and the motivation for studying the problem. The second section discusses the research problem and introduces the research questions. The third section describes the significance of this research and the fourth section outlines the road map of the rest of the thesis, followed by the fifth and final section, which provides a summary of the Chapter.

### 1.2 THE RESEARCH TOPIC AND RATIONALE FOR THE RESEARCH

#### 1.2.1 The research topic in context

South Africa's post-apartheid context has led to a heavy emphasis on reform initiatives which democratise the state and which empower and develop local communities [Benjamin in Heeks (ed.), 2000]. The political

changes since 1994 have had significant impact on the social structures of South African society. They are mostly driven by legislation whose purpose is to institutionalise change across the country.

Legislation by its nature usually creates interactions and association between different agents such as civil society, advocacy groups and government agents at different levels, *e.g.*, at the National Government (Macro) level, the Provincial Government (Meso) level, and the Municipal and Local Councils (Micro) level, and within each level.

Some of these interactions are so complex that they create new political processes and social networks of association not only at the implementation level but also at the strategy planning level and have technological and social implications. Such implications create different scenarios some of which are listed below:

- a) The coming together of advocacy groups, private and public institutions and individuals to address concerns arising from the design, promulgation and implementation of legislation;
- b) The implementation of such legislation which may require an information system not thought of during the legislation design and promulgation to ensure its provisions and procedures are interpreted consistently and uniformly applied across the country; and
- c) Where scenario (a) creates networks of associations, members of such associations continuously interact and negotiate to align diverse interests to ensure the continuous stability of the associations across time and space.

The above scenarios are what the researcher seeks to study which is discussed in section 1.3 of this Chapter. The study seeks to examine the relationship between legislation and the approach needed to implement it where an information system is considered as a major player in the implementation.

The study involves bringing together socio-technical approaches such as those found in the work of Latour [1991], Orlikowski [1991], and Akrich and Latour [1992]. The approach by Latour [1991], Orlikowski [1991] Applegate [1994], and others has over the years been considered and applied to understand and interpret technology and its influence on human actions and organisational reforms [Monteiro in Ciborra *et al.*: 2001; Holmstrom and Robey, 2002].

The research uses the Moments of Translation and Inscription concepts of Actor-Network Theory (ANT) as an analytical framework useful to study the interactions between human and non-human actors. The theory is described in Chapter 2 and also discussed in Chapter 6. The study applies these concepts to understand the processes involved in building a network of actors with aligned diverse interests to implement a solution to a problem identified by a network initiator.

The Due Process Model (DPM) is used as a tool to understand and interpret the inclusion of 'new interest' into an existing and perceived to be stable social network of association and the influence the inclusion has on the network's stability. The theory is described in Chapter 2 and discussed in Chapter 6. The study further uses Structuration Theory (ST) as a lens through which we can understand and interpret human actions resulting from their consciousness and the structural conditions which make their activities possible [Giddens, 1984]. This theory is introduced in Chapter 2 and further discussed in Chapter 6 of this thesis.

As part of this research, a literature review which is discussed in Chapter 3 is provided in order to identify the main stream of academic and professional thinking relating to the role of an information system in reform. The literature review is used to develop the research question as well as to provide the basis for an interpretive case study. The field research phase of the project which is discussed in Chapter 5 employs:

- (a) A theoretical framework developed from the literature review and prior investigation which provides a structure for the collection and analysis of data to be carried out in the field research, and
- (b) A strategy of interpretive research for data collection, analysis and interpretation with the intention to contribute towards answering the research question.

### 1.2.2 Rationale of research

Legislation Led Reform (LLR) has after the 1994 democratic elections gained significant popularity among many South Africans. The difficult and historical past of South Africa, particularly in the area of property valuation and rating by municipalities, contributed to this type of reform. However, the promises of reform driven by legislation in the new South Africa have not always been realised.

There is now a new constitution and several new government structures (e.g., in 1994 South Africa went from four provinces to nine), with at times unclear distribution of powers between national, provincial and local levels of government [Benjamin in Heeks 2000:194]. For instance, prior investigation into the readiness of municipalities and local authorities to implement reform in property valuation and rating policies and make it equitable across the country indicates that:

- South Africa has 2227 registered Valuers; 461 are professionals, 903 are associates and 863 are candidates. That is, only 1364 are certified Valuers who can value the at least 10 million properties in South Africa [Marten, 1999; Franzsen and McCluskey, 2000].
- South Africa currently has different property valuation systems, which involve many different agencies or actors framing and administering the value of properties which are highly inconsistent. With the exception of Cape Town UniCity, valuation rolls do not distinguish between commercial, agricultural and residential properties [Franzsen, 2003:28 -29].
- In 2000, out of a total of R61.8 billion annual revenue collected by the 284 municipalities and local councils in South Africa, only 16.3% (R10.1bn in 2000-01 financial year) was derived from property rates [National Budget Review, 2001:160-162] and about 90% of the municipalities have, during the past 20 years, never conducted a property valuation roll [MPLG, 2002].
- In the 2000/01 financial year, the service delivery budget in each of the 284 municipalities and district councils, when consolidated at the national level, accounted for 26% of the total budget [National Budget Review, 2001:160].

These observations are an indication of the extent of inadequate capacity in the majority of the 284 municipalities in South Africa to manage the implementation of the new property (municipal) rates Act of 2004. This capacity inadequacy also undermines local government in general, to fulfil its critical role in rebuilding local communities and environments, as the basis of a democratic, integrated, prosperous and truly non-racial society.

To address some of these concerns, Bell and John [2000] noted that the government embarked on a five-year process of restructuring local governments. The government started initially by diversifying local government institutions around the country, and re-demarcating all local authorities. This initiative of the government reduced the number of authorities and created a fundamentally new kind of municipality responsible for several towns and extensive rural areas. The initiative diminished the latitude for local diversity [op.cit.].

Furthermore, the amalgamation of municipalities after the December 2000 elections also brought new areas into the property tax base. According to Bell and John [op.cit.], the new municipal structures encompass all the land area in South Africa and, as required by law, all land within a local authority must be taxed under a system which applies throughout that municipality. To support these changes, Bell and John indicate that it was necessary to develop the information and administrative infrastructure needed to value properties, determine tax liabilities, distribute tax bills to those responsible, and collect the taxes due, all in an equitable manner.

The new Property (Municipal) Rate Act (PRA) is a piece of legislation designed to drive property valuation and rating reform in South Africa. Signed into law in May 2004, the new PRA is meant to

*“regulate the power of a municipality to impose rates on property; to amend the Local Government: Municipal Systems Act, 2000, so as to make further provision for the serving of documents by municipalities; to amend or repeal certain legislation; and to provide for matters connected therewith” [Government Gazette No. 26357, 2004].*

The government of South Africa identified property valuation and rating as crucial for urban and city planning and as such its intention in the new PRA is to empower municipalities and local authorities to deliver better services and to address the imbalances in infrastructure and systems for the majority of the population who were disadvantaged by the previous dispensation. This will certainly also lead to increase in revenue collection in the form of property taxes.

The implementation of the new PRA is likely to be problematic because it is being introduced in the context of inadequate capacity: No proper IT-based support system, inadequate human resources and, in the majority of municipalities and local authorities, no adequate IT strategy to scientifically relate economic development to revenue collection and a property based taxation system.

In some urban centres, the municipalities are experiencing very rapid growth in property development brought about by large-scale growth in the hospitality industry [Franzsen, 2001]. Foreign investments in the property development industry and increased ownership of residential and commercial properties by the growing middle class of South Africans have made it even more critical to implement the new PRA [ibid.]. The responsibility for the implementation of the new PRA rests with the municipalities. Many municipalities typically do not have the institutional structures or the financial and manpower resources to carry out this responsibility [Franzsen and McCluskey, 2000].

The crux of the situation is that there are stakeholders, *e.g.*, relevant municipal departments, ratepayers and property owners, and valuers, policies, *e.g.*, by-laws, and procedures such as property valuation rolls, municipal cash flow through municipal rates, utilisation of amenities, and Regional Services/Sales Tax (RST). All these have tremendous influence

on any discussions and negotiations with an outcome that will impact on the new PRA implementation. These contextual conditions make the objective of implementing the new PRA even more problematic.

Given the above observations and in the context of this research, the study sought an understanding of the implementation challenges of the new PRA as an example of legislation led reform. The understanding is achieved through an in-depth analysis of the Cape Town Unicity property valuation and rates policy reform framework that was implemented through the General Valuation Roll (GenVal) 2000 project which many regarded as a well-implemented legislation led reform. The GenVal 2000 project as a case study is a computer-based general property valuation project designed to generate a common property valuation roll to eradicate inequity in property valuations from which property rates could be generated which are equitable across the new Cape Town Unicity [Weichardt, 2003]. The new property (municipal) rates Act of South Africa and the GenVal 2000 project at City of Cape Town are discussed in Chapter 5.

The GenVal 2000 project was also used to determine the revenue base of the new Unicity. The project was implemented using a computer-assisted mass appraisal (CAMA) system, developed and used mainly in the United States of America. The CAMA system had never been used in the developing world except in Cape Town in South Africa and Mavodo in Kenya [Ward, 2000].

### **1.3 THE RESEARCH PROBLEM**

The relationship between an information system and organisational reform as a concept has been recognised for some time and there is a fair amount of mainstream literature on the topic. In the views of Applegate

[1994] and Orlikowski [1991] and in the context of this study, an information system plays a crucial role in enabling and amplifying the dominating trends for the transformation of organisations or society.

The literature reviewed, which is discussed in Chapter 3, highlights the fact that further work still needs to be done to investigate the relationship between legislation (as aligned diverse interests of different constituencies) and an information system as a social structure. This is despite years of investigative efforts into entities and how they interact in a social network [Akrich and Latour, 1992]. Furthermore, the literature review brings to light the need for further investigation into the institutionalisation of social networks of association.

Also, from the literature review, there is an area in legislation that drives social reform and in the context of South Africa, namely, the municipal systems Act 2000 (which provides for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of communities, and ensure universal access to essential services that are affordable to all), and other large-scale legislation where the exact approach (in the form of guidelines) which include(s) the role of an information system to implement such legislation have not been well chronicled.

In view of the above discussion, there is a need to address this gap and to contribute to the body of knowledge. This means further research study into the area of networks of associations from the perspective of aligned diverse interests already started by Latour [1991], Orlikowski [1991], and Akrich and Latour [1992]. As already mentioned, the approach by these authors and others has over the years been considered and applied to understand and interpret technology and its influence on social entities and the reform of organisations.

The work of Latour, Orlikowski, and Akrich further point to the fact that the use of information systems has become pervasive in organisations and society whereby they are often viewed as a means to create and sustain effectiveness. In view of this, we should therefore expect a variety of outcomes even from the same information system [Robey and Boudreau, 2000]. This is because the outcomes from the use of most information systems are dependent on the social contexts in which they are enacted [Orlikowski, 2000].

We argue that most legislation has been used by some governments as a means to align diverse interests of stakeholders and to implement these interests. There clearly is, however, still a problem with the rollout of some of the legislation (particularly the ones that drive reform) that ensures standardisation, control, efficiency and communication in the social network the reform creates.

The research further argues that legislation that is aimed at reform, particularly in property valuation and rating in many developing countries, has been implemented without broad based participation of concerned and affected role players and as such has had very little chance of success [Madon and Sahay, 2004]. This broad based participation concept is elaborated in Chapter 3 and discussed in Chapter 6. Therefore, legislation formulation in the general sense should be seen as a means to ensure inclusiveness where government, civil society, advocacy groups and private institutions participate. The process of legislation formulation and inclusiveness is described in Chapter 3 and discussed in Chapter 6.

The research considers the new property (municipal) rates Act 2004 by the Government of South Africa as an example of legislation (or an artefact) that drives reform, which embodies the interest of the government

and other role players to achieve a certain reform agenda. Hence in the context and history of this study (see section 1.2), the government has become the initiator of a network of association of certain role players in driving reform through an Act of parliament. This process is further discussed in Chapter 3.

As a case study, the research uses the property rates policy reform framework of the City of Cape Town, which was implemented as the general valuation roll (GenVal) 2000 project. The case was selected to investigate an established and stable network of aligned interests (property valuation and rating at the City) and how the inclusion of a new role player in the network, as a result of the policy reform framework, contributed to the continued stability of the network. The intention here is also to establish how the contribution by this new role player facilitated uniform application and consistent interpretation of the property rates policy reform framework. A major interest in the case study is its achievement and how lessons learnt from it could be applied in the rollout of the new property (municipal) rates Act across the country.

The main aim of this research is to investigate the role of an information system in the implementation of Legislation Led Reform. It investigates how a new interest in the form of an information system is included in the network of collective interests of concerned parties to facilitate the consolidation of the collective interests and the subsequent expansion and stability of the network. It further investigates how the stability of the network promotes consistent interpretation and uniform application of the collective interests across time and space. In view of the above, the following working questions are proposed for this research:

- a) How can new actors (human and non-human) and their interests be included in a complex heterogeneous network of actors with aligned diverse interests resulting from legislation?
- b) What is the role of an information system as an actor in consolidating the collective interests of actors in a social network resulting from reform driven by legislation?
- c) Which general guidelines are required to enable an information system to play a major role in implementing legislation led reform such as the new property (municipal) rates Act of South Africa?

In view of the above questions, the research focuses on the review of the provisions and procedures of the GenVal 2000 project which lay a solid foundation for effective rollout of the new property (municipal) rates Act 2004 of South Africa from the following perspectives:

- The review of the specific policy and administrative reform of property valuation and rating at the City of Cape Town in 1998 that led to the development and introduction of the GenVal project in 2000 at the City.
- Using actor-network theory (ANT) as a lens to understand and interpret the interactions between actors with diverse interests in a complex heterogeneous network driven by legislation towards reform.
- The use of the Due Process Model (DPM) as an analytical tool to understand and interpret how a new actor and its interest (an information system) was accommodated (if not included) in the existing actor network and ensured its stability across time and space;

- Using Structuration Theory (ST) as a means to understand and interpret the unintended consequences of actions by actors as they acquire new knowledge and interact within and out of the network across time and space.
- The need to provide general guidelines for the role of an information system in legislation led reform in South Africa.

Given these focus areas, theories were identified to support the collection and analysis of data to understand and interpret the research problem. The next chapter discusses these identified theories. For now, the next section discusses the significance of the research.

### 1.4 SIGNIFICANCE OF THE RESEARCH

A detailed discussion of the significance of this study is given in Chapter 7. This section just briefly highlights some of the contributions this study will make to the body of knowledge in information systems research.

Essentially, the research will contribute to the body of knowledge from the perspective of the understanding and interpretation of the role of an information system in reform driven by legislation. The first contribution of this thesis is a conceptual contribution. It is a “normative” framework (extensively discussed in Chapter 6, subsection 6.4.3) to serve as a guide to the use of Information Systems to institutionalize the provisions and systems procedure of policy frameworks in the public sector organisation. It comes from the description and analysis of the new property (municipal) rate Act 2004 as an example of legislation led reform. The contextualisation of the Act or legislation contributes to an increased understanding of some legislation as collective interests of actors interacting in a social network. The nature of the interaction towards the

implementation of legislation led reform using an information system is essentially not understood in the context of municipal structures.

The second contribution arises from the experience of the GenVal 2000 project at Cape Town Unicity as a case study. It uses the project experience and generalises from that to the situation faced by other municipalities and local councils in South Africa who all have to implement the new property (municipal) rates Act. The experience from the project demonstrates the need to formulate guidelines to help facilitate the implementation of legislation led reform that can be influenced by the use of an information system across the country. For example, a number of projects that are meant to address policy reform in developing countries fail because institutions such as municipalities do not have the appropriate blend of both technical and social skills [Bada, 2000; Yahaya, 2000] to make it happen the way it is meant to happen. Scaling [Sahay and Walsham, 2005:43] as described in Chapter 6, subsection 6.4.5, is put forward as a way to address these shortcomings.

Finally, the study contributes to a deeper understanding of the role that an information system could play in legislation led reform. Such an information system would have, as inscribed program of action, the functionality which would be derived from the appropriate legislation. When enrolled as an actor into the existing network, the information system ensures, through its routine use, that all actors in the network interpret certain collective interests (related to the inscribed program of action) consistently and apply them uniformly. As the information system becomes entrenched in the network, it has an increasing reciprocal influence on the network. In terms of actors' interests, standardisation and new ways of communication, the information system becomes a definitive source and organisational memory. This increases the stability of the network and the institutionalisation of the system as technology-in-practice

[Orlikowski, 2000], leading to increased irreversibility, and therefore increased institutionalisation of the network.

The limitations of the research study are discussed in Chapter 7.

### 1.5 OVERVIEW OF THE REST OF THE THESIS

To provide an overview of the rest of the thesis, a brief discussion of each Chapter is provided below:

#### *Chapter 2: The Underlying Theories*

The Chapter, in the context of the role of an information system in legislation led reform using the new PRA as an example, highlights and contextualises theories already applied in similar areas of study. It describes three such theories that the research applies as a means to understand, interpret and affirm the possible role of an information system in the rollout of the new PRA across South Africa. The chapter also describes a conceptual framework to be used with the identified theories as lenses through which to understand and interpret the research problem.

#### *Chapter 3: Literature Review*

This Chapter introduces and provides the theoretical background for the various concepts which support or assist in understanding the overall topic of “the role of an information system in legislation led reform (LLR)”. It critically reviews and makes a summarised analysis from the literature on topics such as property rate and reform, legislation and reform, and information systems and reform. The literature review attempts to describe the influence of legislation on reform and how an information system influences the delivery of the reform. The review argues that administrative reform is not the only outcome of legislation but also greater

equity and citizen participation (inclusiveness) in urban affairs. The Chapter further argues that an information system reinforces the reform agenda through standardisation, control, efficiency and communication. The Chapter also reviews similar Acts or legislations in selected African countries which pursued transformation in property valuation and rating.

### *Chapter 4: Research Approach*

This Chapter is devoted to an overview of relevant research approaches in information systems, research methodology and the assumptions adopted for the research approach. The Chapter also outlines the general interpretive case study approach adopted to guide the analysis of the process and interactions between actors which resulted in the alignment of diverse interests. The view is that the social world can only be understood from the point of view of individuals and how they assign meaning to their everyday experiences. The Chapter further explains why the case was selected for the studies. The initial framework for the analysis of the field results is also discussed.

### *Chapter 5: Investigation into the implementation of property valuation and rating reform*

In this Chapter, the case study concerned with the implementation of property rates policy reform framework at City of Cape Town is described. The case study analyses the role of an information system in the implementation of the property rates policy reform framework. The first section describes the fieldwork. The second section outlines the case study including a historical perspective of the City of Cape Town property valuation and rating reform framework. The section also describes the role of an information system in the implementation of the reform framework.

The third section describes the new PRA including a historical background of how this piece of legislation was identified as an example of the role of an information system in legislation led reform implementation. The section also highlights the Act's provisions. To support the discussions which have focused on South Africa on the need for social reform that is driven by legislation.

### *Chapter 6: Analysis and Interpretation of the case study*

This Chapter uses the 'Moments of Translation' concept of Actor-Network Theory as a lens to understand and interpret the process and interactions between actors which led to the new legislation and the formation of the network and the Due Process Model to analyse the inclusion of a new actor in the network. The first section analyses the case study from the perspective of ANT by drawing on the concept of the four 'moments of translation'. The analysis focuses on the formation, growth and stability of the network of aligned interests, *i.e.*, the 'actor-network' created as a result of the new rates policy. The second section analyses the inclusion of an information system as an actor and social structure in the network and discusses its ability to further stabilise and eventually institutionalise the network.

### *Chapter 7: Conclusion*

Chapter 7 reviews and concludes the study. The theoretical, methodological and practical contributions are discussed as well as the larger relevance and value of this study (*i.e.*, its contribution). The Chapter also indicates various limitations of this study and points out areas for further research.

### *References*

A comprehensive list of references is supplied which substantiates various concepts and/or theories used in this research.

### **1.6 SUMMARY**

This Chapter briefly introduced an area of study referred to as the role of an information system in reform driven by legislation. The question asked has been whether the current approach to introducing reform driven by legislation has achieved the desired outcomes. The Chapter also sets up the scene to discuss the ability of legislation led reform to deliver the needed reform in society and to ensure stability and social order in a heterogeneous network of actors. The role of an information system is considered as a means to deliver such an outcome where the network of actors with aligned interests could be institutionalised such that it creates standardisation, control and effective communication across the country.

**CHAPTER 2: UNDERLYING THEORIES**

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### 2.1 INTRODUCTION

The previous chapter introduced the focus of this research study, *i.e.*, the role of an information system in the phenomenon of legislation led reform. In order to understand and interpret the phenomenon using the new PRA as an example, theories already applied in similar areas of study need to be highlighted and contextualised. This Chapter describes three such theories that the research will apply as a means to understand, interpret and affirm the possible role of an information system in the rollout of the new PRA across South Africa.

From the perspective of this research, property valuation and rating is seen as a complex socio-technical network of agents (or actors) where agents continuously interact to align their diverse interests. Also, legislation as discussed in Chapter 3 is a collective interest of agents as an outcome of continuous interactions to align their diverse interests. This makes legislation, which drives reform, a complex social system. Furthermore, problems of and solutions to complex social systems involve many role players or actors (human or non-human).

The complexity stems from the challenge in finding solutions to problems such as reform to be driven by legislation which has socio-technical implications where different actors of diverse interests seek to align these interests such that the outcome, *i.e.*, collective interests, is a solution to the reform agenda. It therefore requires a good understanding of the actors and their diverse interests and the nature of the process and interactions which are described in Chapter 3 and discussed in Chapter 6.

It also requires a good understanding of how the process and interactions will lead to the inclusion of an information system to institutionalise the network of actors with aligned diverse interests. As a result, the

relationship between reform and an information system as an actor to institutionalise a network of actors with aligned diverse interests form the focal point of this research. To investigate this relationship, the researcher has selected three theoretical perspectives: Actor-Network Theory (ANT), the Due Process Model (DPM) and Structuration Theory (ST). All three have been used extensively in the field of information system research.

Actor-Network Theory “examines the motivations and actions of groups of actors who form elements, linked by associations, of heterogeneous networks of aligned interests” [Walsham, 1997]. Law [1992:383] asserts that all interactions between humans are mediated through objects of one type or another and that by removing the analytical divide between humans and objects we are better able to examine the true nature of interactions that are the building blocks of networks.

The view of the research is to use ANT as a lens to interpret the process and interactions that helped to align the diverse reform interests of actors into legislation which also created a social network of association. In such a network of association, neither humans nor non-human actors are privileged over the other, but come together in a single collective. This does not simply imply the bringing together of humans and non-humans, but is “rather an active and critical process through which specific ‘candidates for existence’ are (or are not) admitted. While admitting some candidates, the process explicitly and necessarily excludes others ...” [Nandhakumar and Vidgen, 2001:130]. “A prescriptive approach to ANT, therefore, must consider the question of what constitutes a due process: how are actants considered ... and which are included and which rejected?” [*op. cit.*, p 131]. This is the essence of Latour’s Due Process Model (DPM), which can therefore be said to be grounded in ANT.

The implementation of the legislation will rely on the same actor network with or without new actors. If for a particular reason a new actor was included in the network, the DPM is used to examine the process and interactions in introducing the new actor into the network to ensure the network's stability is not undermined.

Structuration Theory on the other hand suggests that human agents (*i.e.*, actors) and social structure are in a recursive relationship with each other whereby human agents draw on social structure in their actions and thereby produce and reproduce the social structure. There is always the possibility, however, that the social structure - traditions, institutions, legislations, moral codes, and established ways of doing things - can be changed when (active) human actors start to ignore them, replace them, or reproduce them differently.

The following subsections describe these three theories to be used as lenses through which to interpret the actions and interactions between actors with diverse interests.

### **2.2 ACTOR-NETWORK THEORY**

Actor-Network theory is used as a lens to provide an understanding and interpretation of not only the process and interactions between actors but also of the meanings that people assign to the form of interactions between actors to align diverse interests. This process of alignment of diverse interests, when effective, results in the creation of a network of actors linked by associations.

To facilitate understanding and interpret the meaning people assign to the form of interactions between actors to align diverse interests, this section describes the Moments of Translation and Inscription concepts of ANT. It also places the research topic in context with respect to applying the

conceptual ideas of ANT to a more specific area of reform introduced by legislation and discussed in Chapter 6. It is appropriate therefore to begin the discussion of the underlying concepts of ANT by developing an understanding of the process and interactions between actors in the negotiation and alignment of their diverse interests (*i.e.*, translation) into an Act of Parliament (*i.e.* legislation) through irreversible Inscription. Latour [1992] defines Inscription as a process of creation of technical artefacts that would ensure the protection of certain interests.

To develop a further understanding of the phenomenon (*i.e.*, legislation led reform), we will argue from the perspective of inclusiveness of the process and interactions between actors using ANT as a lens [Martin 1999]. The focus is on how a broad-based consensus on the problem formation was achieved and how the solution encapsulated the aligned diverse interests of actors in a heterogeneous network [Callon 1985; Latour 1987; Latour 1997]. ANT provides a narrative socio-technical approach for understanding the interactions that lead to the creation of networks of aligned diverse interests. The concepts of Moments of Translation [Callon 1991, 1994; Latour 1987] and irreversibility [Akrich, 1992; Akrich and Latour, 1992] will be used to guide the analysis and interpretation thereafter.

An actor from the perspective of ANT is “any element that bends space around itself, makes other elements dependent upon it and translates their will into the language of its own” [Callon and Latour, 1981:286]. Common examples of actors include humans, collectivities of humans, texts, graphical representations, and technical artefacts. Callon and Latour [1981:286] describe actors as any element which have interests and try to convince other actors so as to create an alignment of the other actors’ interests with their own interests. When this persuasive process becomes effective, it results in the creation of an actor-network.

Martin [1998] on the other hand indicates that this perspective also challenges other traditional divisions between science, rhetoric, society and nature. Martin [op. cit.] argues that the justification in this radical view is that if we want to know the true origins of power and structure, then we must consider all components which collaborate and co-operate in their creation, proliferation and persistence. It is therefore acceptable that the primary quality of actors which allows them to come together into networks is their ability to interact [op. cit.].

When actors and their interactions are taken together, they form a network. The most important of these negotiations is inclusiveness, a comprehensive interaction involving four stages or moments of translation which ensures that all relevant actors with diverse interests are consulted, willing to participate and finally accept the initiator's agenda in a defined process.

### 2.2.1 Moments of Translation

The four moments of translation concept of ANT is used to describe and explain the inclusiveness of the actual process and interactions by both the initiator of the network and the other involved actors to align their diverse interests and to achieve a common goal as described below.

#### (a) *Construct common definitions and meanings – Problematization*

A focal actor defines identities and interests of other actors which are consistent with its own interests, and establishes an obligatory passage point (OPP), thus "rendering itself indispensable" [Callon, 1991]. Problematization relates to the process of becoming indispensable by presenting a solution to a problem in terms of the resources and means a person or a group owns. Initiators not only define the problems and

solutions but also establish roles and identities for other actors in the network. Hence, the OPP is a situation which has to occur for all of the actors to be able to achieve their interests, as defined by the focal actor [Callon, 1991].

*(b) Build Interest – Interessement*

This stage is to convince other actors that the interests defined by the focal actor are in fact their (the other actors') interests and to create incentives for actors such that they are willing to overcome obstacles in the way of passing through the OPP [Callon, 1991]. It involves a variety of strategies and mechanisms by which initiators attempt to enroll other entities. Callon [1986:209-210] noted that a successful interessement validates the problematization and the alliances it implies.

*(c) Co-opt each other in the pursuit of individual and collective objectives – Enrolment*

A situation when actors accept interests (or roles) defined for them by the focal actor in a multilateral political process [Callon, 1991]. According to Callon [1986:211], describing enrolment is to describe a group of multilateral negotiations, trials of strength and tricks that accompany the interessements and enable them to succeed. Holmström and Robey [2002] made reference to Brunsson [1985] and Czarniawska-Joerges [1988] alluding to motivation as central to enrolment, emphasised in what is termed “ideological control”, which occurs by influencing actors' current evaluations of reality and instilling notions of more desirable states and how to reach them.

### (d) *Define representativities – Mobilization*

A situation where actors choose to become legitimate spokespersons of the groups they claim to represent [Callon, 1991] using a set of methods advocated by the focal actor or initiators to ensure their interests are not betrayed. This means that successful mobilization of allies stabilises the actor-network. The aligned interest of the actors becomes institutionalised and is no longer controversial.

In summary, social change can be enacted through the processes of translation in which other actors who might oppose the transformation process are enrolled and mobilized in the effort.

### **2.2.2 Concept of Inscription**

Latour [1991] describes inscription as patterns of use or programs of action for users where roles to be played by users and/or systems are defined. This presupposes the kind of competencies required by the users as well as the systems. By inscribing programs of actions into an artefact, the artefact becomes an actor imposing its inscribed program of action on its users. In relation to translation [Callon 1991:143] the concept of inscription is a medium or material of “embodied texts” of interests, which become the support in the creation of unified needs into one and the same solution whereby when the solution is in use, the context of the specific work tasks and situations of the users are translated.

Inscription [Akrich 1992:208] may be used to describe how concrete anticipations and restrictions of future patterns of use are involved in the development and appropriation of systems (*i.e.*, technologies plus processes plus users). In inscription, the structure of the pattern of use can be strong/inflexible or weak/flexible. The strength of inscription is

dependent on whether to follow or avoid what is inscribed into the actor-network [Akrich 1992:209]. To that effect there are four aspects of the notion of inscription subscribed to and advocated by Monterio and Hanseth [1995:325-343], which are particularly relevant in this research and needs to be emphasised. These are:

- Standardisation - the identification of explicit anticipations (or scenarios) of use held by the various actors during design;
- Materials of inscription - how these anticipations are translated and inscribed into the standards;
- The focal actor - who inscribes them; and
- The strength of these inscriptions - the effort it takes to oppose or work around them.

Holmström and Robey [2002] argued that as inscriptions become stable and routine, they are less likely to be challenged or questioned at a later date. Therefore, social meaning can be inscribed into virtually any material or medium including formal discussions, public declarations, texts, and technical objects [Callon, 1991] and their patterns of use subsequently gain the properties of irreversibility. An information system (described by Bowker and Star [1994:187] as 'frozen organisational discourse') is an especially interesting medium for enrolling interests in an actor network and as non-human actor, it can be used as a delegate for particular interests, authorised to "stand in" or "speak for" human actors [Bloomfield *et. al.*, 1997].

### 2.2.3 Concept of Irreversibility

Irreversibility is "the degree to which it is subsequently impossible to return to a point where alternative possibilities exist" [Walsham, 1997]. Callon [1991:159] states that the degree of irreversibility depends on:

- The extent to which it is subsequently impossible to go back to a point where that translation was only one amongst others and
- The extent to which it shapes and determines subsequent translations.

ANT commentators describe the degree of irreversibility of a network as a process of institutionalisation. That is, as more elements of the network become irreversible, or display increased degrees of irreversibility, the network as such becomes more irreversible – hence more institutionalised or accepted as fact. Using ANT as a tool for analysis, one therefore draws on the representation of actors, their interests, roles, legitimate collectiveness and how they maintain their aligned interests [Sidorova and Sarker, 2000]. One attempts to follow how the initiator's problem definitions and meanings become accepted through negotiations of interested parties' interests and how these are aligned to the initiator's to lead to an amicable settlement of agreed responsibilities [op.cit.].

Some actors then become legitimate spokespersons for the various groupings, leading to an increased acceptance of the initiator's agenda in the form of 'material artefact' containing the program of action [Latour 1987; Callon 1991, 1994], *i.e.*, patterns of reform in the case of legislation led reform. In the case of legislation led reform, supported by an information system, the information system is employed as a medium to carry the program of action (the aligned diverse interests of the actors) to ensure that the provisions and procedures of the legislation are interpreted consistently and applied uniformly across time and space thereby bringing about stability and social order in the network [Callon, 1991, Hughes 1994]. The Due Process Model, which is described in the next subsection and discussed in Chapter 6, helps to analyse the deployment of technology in the form of an information system as an actor into an existing perceived stable network such that the network stability is not undermined.

To summarise, social change can be enacted through the process of negotiation and alignment of diverse interests of actors who might otherwise oppose a transformation process. The rationale and the process-oriented sociology of ANT provides a strong theoretical support for understanding and interpreting the logical relationship between legislation as aligned diverse interests of actors in a social network and an information system as a social structure and actor to institutionalise a network of actors with aligned diverse interests. ANT has been used in many interpretive case studies of which some are reported in the works of Walsham and Waema [1994], Hanseth and Monteiro [1996] and Holmström and Robey [2000].

From the perspective of Braa [1997] and Walsham [1997, 2001], ANT is not a stable body of knowledge that can be used by researchers without problems since the developers of ANT have frequently revised or extended elements of it. However, the common understanding is that there are some basic concepts of ANT which have remained relatively stable over the last few years. The table below summarises the concepts and definitions of ANT to be applied throughout the research.

<b>Concepts</b>	<b>Definitions</b>
Actor or Actant	Any element which bends space around itself, makes other elements dependent upon it and translates their will into the language of its own [Callon and Latour, 1981].
Actor-Network	Heterogeneous network of aligned interests [Callon and Latour, 1981]
Problematization	The first moment of translation during which a focal actor defines identities and interests of other actors which are consistent with its own interests, and establishes itself as an obligatory passage point (OPP), thus rendering itself indispensable [Callon, 1986].
Obligatory Passage Point	A situation which has to occur for all of the actors to be able to achieve their interests, as defined by the focal actor [Callon, 1986].
Interessement	A process of convincing actors to accept the definition of the focal actor [Callon, 1986].
Enrolment	A situation when actors accept roles defined for them by the focal actor [Callon, 1986].
Mobilization	A situation where actors choose to become legitimate spokespersons of the groups they claim to represent [Callon, 1991].
Inscription	A process of creation of technical artefacts which would ensure the protection of certain interests [Latour, 1992].
Speaker/ Representative	An actor which speaks on behalf of other actors [Callon, 1986].
Irreversibility	Degree to which it is subsequently impossible to return to a point where alternative possibilities exist [Walsham, 1997]

**Table 2.1: Definition of some central concepts of ANT<sup>1</sup>**

### **2.3 THE DUE PROCESS MODEL**

The relative stability of an actor-network is based on the collective interests of the actors. Therefore, introducing a new actor (human or non-human) into a relatively stable actor-network will require a process which ensures that the new interest is integrated as part of the collective interests of the actors in the actor-network. New actors with their own interests in most cases do not bring certainty along with them into an

<sup>1</sup> Source: Sidorova and Sarker, 2000:1663

existing and relatively stable social network but rather introduce a degree of perplexity (see Figure 2.1) [McMaster *et al.*, 1999:347].

Whereas ANT is generally applied to describe the formation of aligned interests in a network, the DPM, grounded in ANT, is used to look at the specific problem of introducing a new actant (also known as a candidate for admission) into the network [op. cit.]. Primarily, the DPM is a practical, valuable analytic tool used to overcome the complexity involved in investigating both human and non human-network processes. According to McMaster *et al.* [op. cit.], the DPM helps to analyze and unpack facts and values around and within a network of association which is about to include a “new interest” and then to repackage them into a single collective. The DPM is being applied in this research retrospectively to understand the process of including an information system using the City of Cape Town’s property valuation and rating policy reform framework implementation as the embedding mechanism. This reform framework is further discussed in chapters 5 and 6. The DPM has four stages as illustrated in Figure 2.1, to analyse the way in which a new actor’s interest is included and become part and parcel of the collective interests of actors in a social network without undermining the stability and order enjoyed so far by the actors in the actor-network.

The first stage known as *perplexity* is characterised by questions such as ‘How many are we?’ ‘What is it?’ ‘How does it affect me?’ ‘Who and what else are affected?’ [op.cit.]. Perplexity revolves around the issues of confusion, grasping meaning and intent and thinking clearly and logically. If perplexity is insufficiently addressed, a false sense of understanding predicates the next stage of the model, making *perplexity* settlement crucial to the usefulness of all three following stages of the model.

The second stage of DPM is *consultation*. At this stage, because this new interest (*i.e.*, the candidate for admission) introduces another layer of uncertainty, consultations (or debates) are embarked upon by the others to clarify its legitimate candidacy. At the third stage (hierarchy) the new entity's position, *i.e.*, its relative importance in the *hierarchy* of things, is established. When the first three stages have been successful, the new actor becomes accepted and the network returns to stability (stage four – *institutionalisation*).

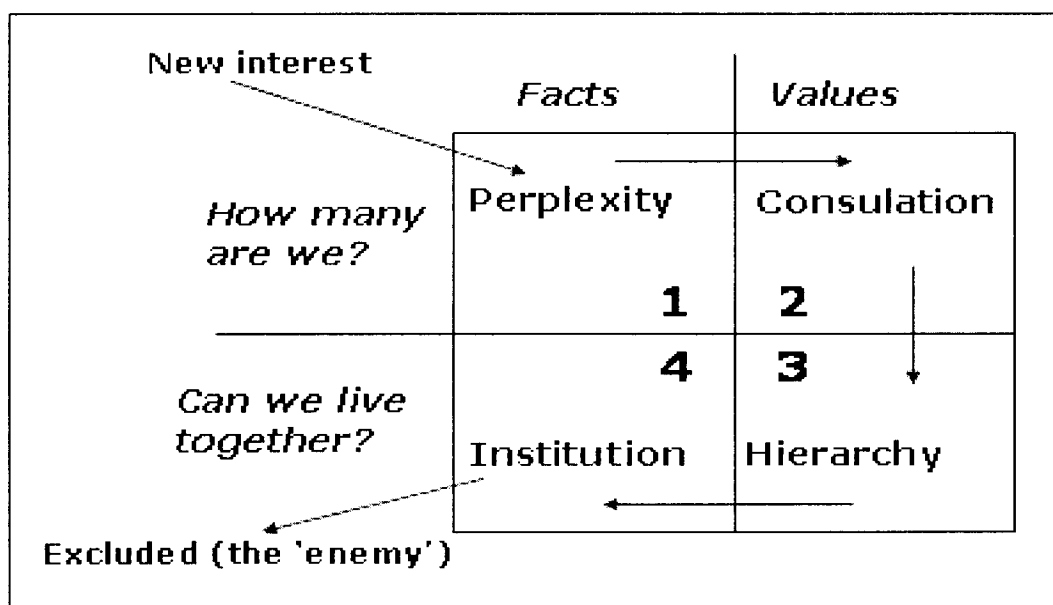


Figure 2.1: Due Process Model – After Latour<sup>2</sup>

At this point the candidate could also be rejected and excluded altogether. From the perspective of the case study discussed in Chapter 5, the computer-based information system, CAMA, offered the means with which the network of actors with aligned diverse interests (*i.e.*, the new rates policy reform framework) could be institutionalised (see Chapter 6). CAMA was introduced as a ‘new candidate for admission’ into the network, and this process is analysed using DPM which is further discussed in Chapter 6.

<sup>2</sup> Source: McMaster *et al.*, 1999

## **2.4 STRUCTURATION THEORY**

This subsection of the Chapter provides an overview of Structuration Theory (ST) and its application in the field of information systems. As already alluded to, ST is applied in order to gain an understanding of how new structures which are built through institutionalisation of a network of actors with aligned diverse interests contribute to the continued stability of the network.

Structuration Theory states that the basic domain of social science study is neither the experience of the individual, nor the existence of any form of societal totality, but social practices [Giddens 1984:9-14]. That is, through social activities people reproduce the actions that make these practices possible. Therefore, in Giddens' [op.cit.] view, structuration is a process of production and reproduction.

This process of production and reproduction is created by human actions. Eckert [2003:14] argues that any action is dependent on the last action hence such actions become practices across time and space making actions the product of the actions of others. In order to deepen the understanding of ST and how it is applied in the field of information systems which is relevant to this research, we need to understand Giddens' characterisation of sociological enquiry, specifically of agency and structure as described below:

### **(i) Agency**

Human agency, in Giddens' [1984:14] formulation, is the 'capacity to make a difference' (also known as 'transformative capacity'). It is intimately connected with power – the loss of the capacity to make a difference is considered powerlessness. According to Giddens, in practice, human agents usually retain some transformational capacity even if it is small.

Power involves the exploitation of resources, and 'Resources (see subsection 2.4.2 and (ii) below) are structured properties of social systems, drawn on and reproduced by knowledgeable agents in the course of interaction' [op.cit.]. Power is not itself a resource and actions have both intended and unintended consequences (see subsection 2.4.2).

### **(ii) Structure**

Giddens [1984:17,377] defines structure as 'rules and resources' recursively implicated in the reproduction of social systems. According to Giddens, structure can be 'conceptualised abstractly as two aspects of rules - normative elements and codes of signification'. Giddens went on to say that structure 'exists only as memory traces, the organic basis of human knowledgeability, and as instantiated in action' [op.cit.].

He argues [1984:17] that structure refers to "the structuring properties allowing the 'binding' of time-space in social systems, the properties which make it possible for discernibly similar social practices to exist across varying spans of time and space and which lend them 'systemic' form." Giddens based his argument on the fact that structure is a 'virtual order' of transformative relations. This means that social systems as reproduced social practices, do not have 'structures' but rather exhibit 'structural properties'. Thus, "structure exists, as time-space presence, only in its instantiations in such practices and as memory traces orienting the conduct of knowledgeable human agents" [1984:17]. Giddens regards structure not merely as constraining, but also as enabling.

The next two subsections focus on two particular aspects of Structuration Theory that will be useful as 'frameworks' of analysis in this study.

### **2.4.1 Practical and discursive knowledge and unintended consequences**

The first framework supports the analysis of the actions of actors (referred to in this research as interactions). It is based on the 'practical discursive knowledge and unintended consequences' principles (see Figure 2.2 below). During the interactions between actors towards the alignment of diverse interests certain actions are taken and activities conducted without due considerations to conditions and consequences of such actions and activities. As such, certain structures might have been produced and reproduced. Eckert [2003:14] notes, "Structures are unintended consequences, which return, to resurface as unconscious prerequisite for action." In Eckert's view, the actor's knowledge during any action is underpinned by unconsciousness, and practical and discursive consciousness as depicted in Figure 2.2.

The recognition that actors are knowledgeable and reflexive is central in Structuration Theory [Orlikowski, 1992:404]. Giddens distinguishes between practical and discursive knowledge, where practical knowledge refers to tacit knowledge that actors draw on in action, and discursive knowledge refers to knowledge that actors are able to articulate. Reflexivity refers to the capacity of actors to routinely observe and understand what they are doing while they are doing it [ibid.].

Human knowledgeability is always bounded, Giddens noted [1984:27], and the flow of reflexive actions continually produces consequences which are unintended by actors, and these unintended consequences may form unacknowledged conditions of action in a feedback fashion [ibid.]. This boundedness of actors' knowledgeability is further amplified by Giddens<sup>3</sup>:

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<sup>3</sup> <http://www.hu.mtu.edu/~rselfe/5115/readnotes/giddens/Giddens%20Chap.doc>

*“all social actors know a great deal about what they are doing in the processes of interaction; and yet at the same time there is a great deal, which they do not know about the conditions and consequences of their activities, but which nonetheless influences their course.”*

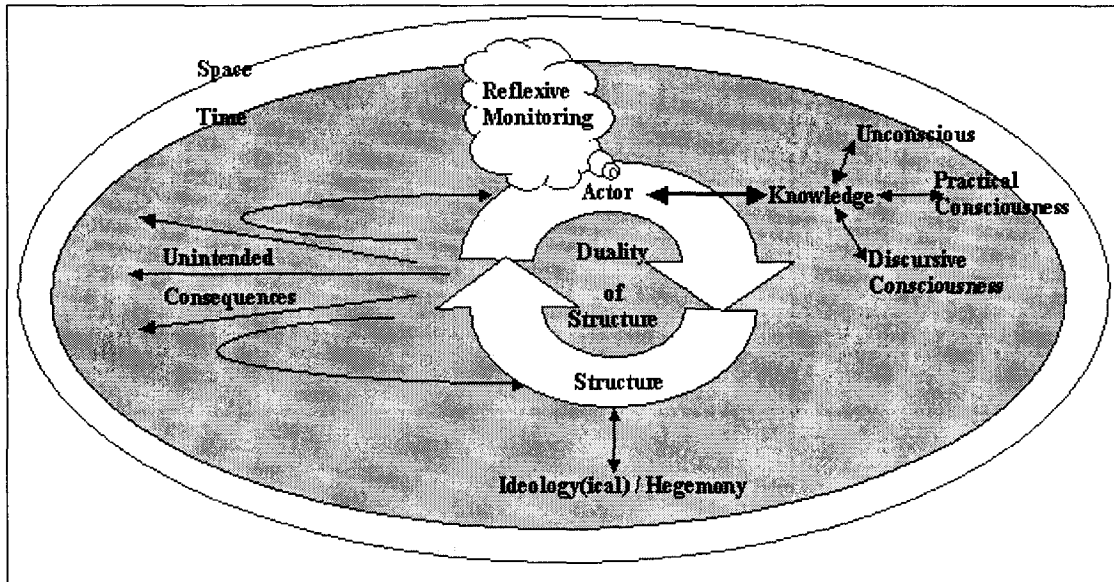


Figure 2.2: Giddens' Theory of Structuration<sup>4</sup>

The above can be put into context of the focus of this research study. The new PRA establishes a new “modus operandi” for property valuation and rating and defines the traditions, institutions, and moral codes of municipal property valuation and rating. As actors or users increase their knowledge consciously or unconsciously about the new PRA, their actions will reproduce the new PRA “rules and resources”, but these may also be influenced or changed as and when they are challenged through their application by other actors.

<sup>4</sup> [www.hu.mtu.edu/~rselfe/5115](http://www.hu.mtu.edu/~rselfe/5115)

### **2.4.2 The duality of structure**

The second framework is the duality of structure which is a key principle in Structuration Theory. “The constitution of agents and structure”, Giddens [1984:25] notes, “are not two independently given sets of phenomena, a dualism, but represent a duality.” Agency and structure are dependent upon each other and recursively related – human action is enabled and constrained by structure but structure is also the result of human action. Thus, duality in Structuration Theory refers to the way in which action and structure presupposes each other. Giddens [ibid.] argues that:

*‘the structural properties of social systems are both medium and outcome of the practices they recursively organise.’*

In the views of Lyytinen and Ngweyama [1992:21], all social activities, including work processes, can be viewed as enabled and constrained by social structures that are produced and reproduced by human agents. According to Giddens [1979], one can isolate three dimensions of institutionalised social structure (solely for the purpose of analysis): signification, legitimation and domination. He further argues that there are three key processes of human actions during interactions, namely, communication, exercising of existing power, and sanctioning of conduct. These two pillars of the duality – the dimensions of structure and the processes of interaction – are linked by means of three modalities, namely: Interpretative Schemes, Facilities, and Norms (see Figure 2.3 below). Modalities operate both ways between action and structure because their relationship is mutual.

Firstly, and from the diagram of Figure 2.3 below, an Interpretative Scheme in terms of human interaction is used by human actors in their ongoing interaction with the world to create a core of mutual knowledge

whereby an accountable universe of meaning is sustained through and in processes of interaction [Orlikowski, 1992:404]. Walsham [1993:61] describes the use of interpretive schemes as follows: "Human communication involves the use of interpretive schemes which are stocks of knowledge that human actors draw upon in order to make sense of their own and others' actions."

According to Monteiro and Hanseth [1995], interpretative scheme enables shared meaning and hence facilitates meaningful communication in interactions. Thus, the interactions reproduce and modify those interpretative schemes which are embedded in social structures as meanings or *signification*. From the perspective of institutionalised properties, interpretative schemes represent organisational *structures of signification*, which represent the organisational rules which inform and define interactions [Orlikowski, 1992:404].

In applying this to information systems, Orlikowski and Robey [1991:155] notes that, "software technology conditions certain social practices, and through its use the meanings embodied in the technology are themselves reinforced". For instance, in the case of the role of an information system in legislation led reform and in particular the new PRA of South Africa, signification is therefore the meanings (or signification) and characteristics of the property valuation and rating practices.

Therefore, the meanings or signification of the property valuation and rating practices which are embedded in the information system as the interpretative scheme of the property valuation and rating business is reinforced or changed through social interaction or as the organisational rules are reaffirmed or challenged through their use by human agents. Thus, in any interaction, shared knowledge is not merely part of the background, but is an integral part of the social encounter, in part

organising it, and in part being shaped by the interaction itself [Orlikowski 1992:404].

However, due to the duality of action and structure, the reproduction of structures could create unintended consequences of actions if the actions are not guided properly. Some of such consequences that are unintended could derail the aligned diverse interests and subsequently render a social network of actors ineffective (see Figure 2.2 above). Chapter 6 describes this in detail using the outcome of the case study analysis.

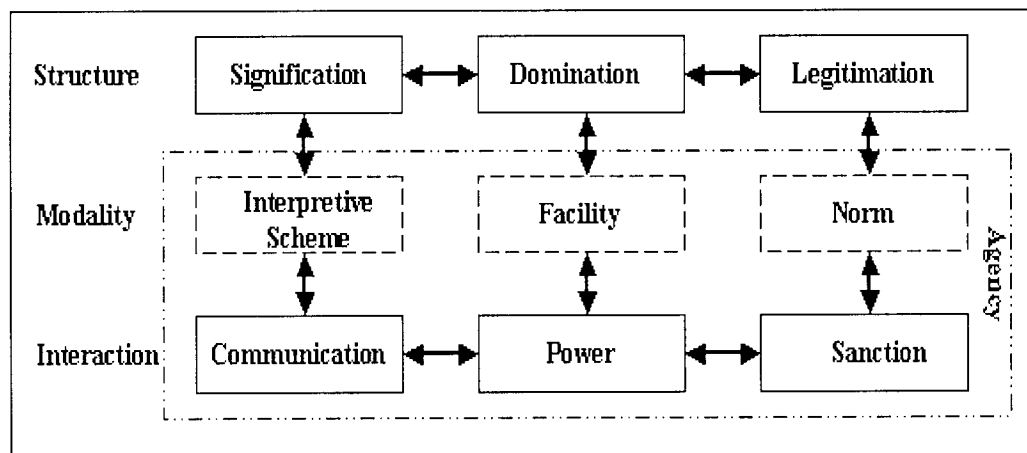


Figure 2.3: The duality of structure and action<sup>5</sup>

Secondly, from an agency perspective, *power* enters into human interaction through providing organisational capabilities (*i.e.*, Facility) for humans to accomplish outcomes [Orlikowski 1992:404]. Therefore *facility* refers to the mobilisation of resources of domination, that is, it comprises the media through which power is exercised [Orlikowski and Robey, 1991:155]. Based on the views of Orlikowski and Robey [ibid.] an information system “constitutes a system of domination.” For example, *facility* in relation to the role of an information system in legislation led reform is the organisational capabilities wielded into the information

<sup>5</sup> Source: Giddens 1984:29

system in terms of the roles and responsibilities [Jones, 1999:119-121] agreed to during the design of the legislation that enforces or changes structures of domination.

Power in the context of this discussion and as explained by Roberts and Scapens [1985:449] is the “transformative capacity” of human action to transform the social and material world. Power therefore is humans’ ability to organise material (allocative) and human (authoritative) resources to create, reinforce or change institutional properties that constitute organisational structures of domination. These structures of domination are a reflection of the fact that all social systems are marked by an asymmetry of authoritative and allocative resources [Orlikowski, 1992].

According to Giddens [1984], when a given resource is drawn on by human actors in interaction, the existing structure of domination is reaffirmed. It is only when the existing resources are changed – either through being explicitly altered or through being gradually and imperceptibly shifted – that the existing structure of domination may be modified or undermined. The latter (*i.e.*, gradually and imperceptibly shifted), in the context of the role of an information system in legislation led reform (in terms of the provisions and systems procedure of the Act) may constrain actions and as a result will lead to other actions or outcomes resulting in the modification of use of the information system to create new structures of domination that will potentially (unintended) alter institutionalised practices. The consequence is that those rules and capabilities will then no longer affirm the structure of domination. Chapter 6 discusses this further as part of the interpretation of the case study.

Finally, human agents sanction their actions by drawing on *norms* or standards of morality and thus maintain or modify social structures of legitimation. According to Orlikowski [1992], *norms* are organisational

conventions or rules governing legitimate or “appropriate” conduct such that interaction in an organisation does not take place blindly, but is guided by application of normative sanctions which are expressed through the cultural norms prevailing in an organisation.

According to Monteiro and Hanseth [1995], *norms* guide action through mobilisation of sanctions and as a result they define the legitimacy of interaction. They are created through continuous use of sanctions [ibid.]. Orlikowski and Robey [1991:155-156] suggest that the way *norms* work for information technology/systems, is that an information technology/system “codifies” and “conveys” norms. From the perspective of institutional properties, *norms*, however, constitute organisational structures of legitimation, whereby a moral order within an organisation is articulated and sustained through rituals, socialisation practices and tradition [Orlikowski, 1992].

In the context of what has been said above, the role of an information system in legislation led reform would be to support the rollout of the legislation such that institutions and individuals will draw on the values and conventions of the State as enshrined in the legislation and in particular the new PRA. The norms of interactions in applying the new Act therefore are the sanctions created into the information system through the design and programming of legitimate options and conventions [Jones 1999:119-121].

As such the use of the information system, while ensuring consistent interpretation and uniform application of the provisions of legislation, means that users or actors execute sanctioned action. According to Jones [ibid.], modification of ‘patterns of use’ as ‘inscribed’ in the information system will create new structures of legitimation that will potentially (unintendedly) alter institutionalised practices. The consequence is that

those values and/or sanctions intended to sustain the structure of legitimation are no longer sustainable. Chapter 6 uses Structuration Theory; particularly the modalities explained above, as a lens to analyse and interpret the results of the case study.

In summary, ST emphasises that structure and agency be viewed, not as independent and conflicting elements, but as a mutually interacting duality [Giddens, 1984]. Thus social structure is seen as being drawn on by human agents in their actions, while the actions of humans in social contexts serve to produce and reproduce the social structure [ibid.]. From this perspective, actions of actors are therefore based on the interpretations of structure (signification, domination and legitimation) through modalities (interpretative schemes, facilities and norms) and as such, such actions would be influenced by several elements such as technological (or ICT) advancement (or developments), the macro economic and political environment, international reforms (e.g., internationally accepted property valuation and rating practices).

From this perspective, unintended actions are the unintentional actions evolving over time and space from the continuous interaction of actors who draw from given knowledge and experiential knowledge to apply and interpret rules and allocate resources in a manner which enables them to achieve their objectives. In the process, choices are made which in turn influence the original intentions and through reflexive monitoring, the structure of interaction is modified or reproduced. The modification and reproduction of the structure of interaction create new interpretative schemes, introduce new facilities and perhaps establish new norms which may either strengthen or weaken the network of association. Therefore, for continuous stability of the network, effort is needed to ensure that any modification or reproduction of the structure of interaction that creates new modalities is strongly *inscribed* to display increased degrees of

irreversibility to render the network more irreversible and hence more institutionalised.

### 2.5 ANT, DPM AND ST

The intention to use ANT, DPM and ST as lenses in this research study is not to play off one theory against the other but rather to use their core principles to complement each other in the attempt to understand and interpret the process and interactions between actors:

- to negotiate and align their diverse interests towards reform;
- to include a new actor in the network and ensure further institutionalisation of the network of aligned interests; and
- to achieve further stability of the network as actors increase their knowledge and, through continuous interaction with their surroundings, alter their actions – consciously or unconsciously.

Concepts from ANT therefore become a useful analytical framework for describing the process and the interactions of actors associated with in a socio-technical context such as legislation led reform of which the new property (municipal) rate Act (PRA) is considered as a real example. DPM is employed as a lens to understand the introduction of a new interest into existing aligned diverse interests, the process and the interactions of the actors in this heterogeneous network and how the new interest is accepted without creating instability. From the case study perspective of this research, DPM offers the tool to understand and interpret the role of an information system in the implementation of the property valuation and rating reform (GenVal 2000 project) of the City of Cape Town and how the new PRA could be properly implemented using an information system across South Africa.

Structuration Theory offers us, in terms of its definitions of the key concepts of structure, modality, actor, action and the notion of the duality of structure, a sophisticated model of social action and structure from individual to global levels: structure constrain actions, but at the same time, human action serves to establish structure; while modalities link action and structure [Walsham 1997]. Structuration Theory allows us to see the property valuation and rating as a structure, and also enables us to describe the national, provincial, and municipal governments, civil society, advocacy groups, individuals, and systems (e.g., information) as actors designing and then realizing the structure. Furthermore, ST offers us the window through which to analyse the structure and its formulation (action) as one that constitute a duality: the structural characteristics affect the action, and in turn, the structure can be modified through action which results in a new structure that is the basis of the next change.

### **2.5.1 Limitations of Actor Network Theory and Structuration Theory**

Like any theory, ANT has its critics and limitations. Its limitations are, e.g., the concentration on how things get done to the detriment of how broader social structures shape socio-material practices, for giving interesting accounts of local contingences and material arrangements, without taking into account macro-social structures, which influence the local ones. Different researchers such as Reed [1995], Law [1994:219] and Walsham [1997:472-476] have raised these limitations. Another serious critique has been levelled against ANT for eliminating all distinctions and reducing people to the status of things. In the view of Winner [1993:362-378], ANT ignores the political biases that can underlie the spectrum of choices for relevant actors *i.e.*, being amoral and apolitical. Walsham [*op. cit.*] and Bijker [1993:113-138] further indicate that ANT does not give specific guidelines for examining the ethical and moral implications of IT.

Structuration Theory (ST) also has its critics and limitations. One such limitation is the conflation of structure and agency or *vice versa*. Barely and Tolbert [1988] argue that conflation creates a problem of reducing structure to action or *vice versa* and consequently, the difficulty to document an institution dissociated from action. Furthermore, Archer [1982:455-483] argues that conflating structure and agency weakens its analytical power. The second limitation of ST is described by Orlikowski [1993c:8] in her tutorial on how ST can inform the social study of IT. She summarises the limitations as follows:

- Few guidelines for empirical research
- Obscure language and ambiguous concepts
- No conventional program of cumulative research
- Uneven exposition and incomplete work
- No universal generations
- Recursiveness of agency and structure is a vicious circle and cannot be studied
- Individuals are so influenced by their social context that the notion of human agency is untenable.

A third limitation of ST is in the IS field and it concerns subjectivism. Although Monteiro and Hanseth [1995:325-343] did acknowledge the insights from structuration theory, they argued that it does not go far enough towards explaining how organisations relate to information systems. Monteiro and Hanseth [*op. cit.*:326] see ST to be 'lacking in precision regarding the specifics of the information system' and that the explanations 'are not fine-grained enough with respect to the technology, to form an appropriate basis for understanding' [*ibid.*:328]. They further argued that the inherent problem with ST being used in the field of information systems is the fact that ST does not provide the 'language' to describe in detail the characteristics of the information systems being studied.

In view of the above-described limitations of ANT and ST, ANT and ST by themselves could not have accommodated the objectives of the research and would have limited the answering of the research questions outlined in Chapter 1, section 1.3. It was necessary to complement ANT with ST, following Walsham's [1997:473] suggestion.

The next section describes the conceptual framework within which the outlined theories are applied.

## **2.6 CONCEPTUAL FRAMEWORK FOR THE RESEARCH**

In this section, we establish a conceptual framework based on the research questions given in Chapter 1. Miles and Huberman [1994] describe a conceptual framework as one which contains the key factors, the variables and presumed relationships amongst them. Therefore, a conceptual framework creates a unique space for the role of theory. Walsham [1995] emphasises that a key question for researchers in any tradition, regardless of their philosophical stance, concerns the role of theory in research. As such, a good framework should not be regarded as a rigid structure but as a valuable guide to empirical research [Walsham 1993]. The philosophical assumptions underpinning this research come from the interpretive school of thought which is discussed in Chapter 4. It is important to mention the philosophical assumption underpinning the research in this section due its relationship with the theories outlined in this Chapter and their role in the conceptual framework. Walsham argues that there is no correct or best theory in research:

*In the interpretive tradition, there are no correct and incorrect theories but there are interesting and less interesting ways to view the world. [Walsham, 1993:6]*

Walsham [1995] positions theory in a research process as more important than the link between philosophical stance and theory. Quoting Mingers [1984], Walsham suggests that there are at least four different philosophical positions interpretive researchers can adopt: phenomenology, ethnomethodology, the philosophy of language and hermeneutics. This research applied hermeneutics to make sense of the whole, and the relationship between its parts as people, the organisation, and information technology/systems [Myers 1997].

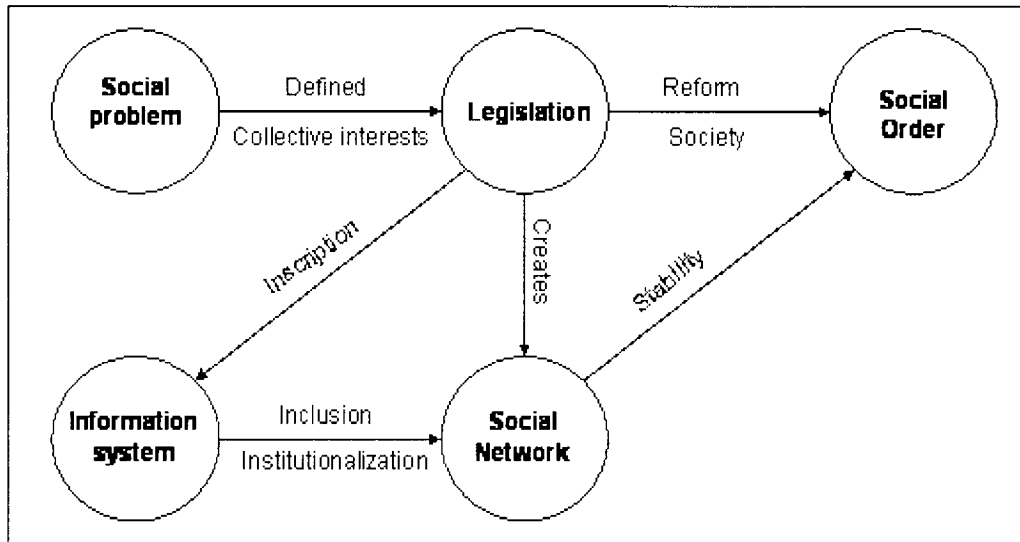
In the interpretive philosophical assumption, the theories that are of interest to the researcher, are what he/she articulates and assumes will be of interest to those involved in the same area. The object of the interpretive effort is one which attempts to make sense of the organisation as a text-analogue where in an organisation, people (*e.g.*, different stakeholders) can have confused, incomplete, cloudy, and contradictory views on many issues [ibid.]. This scenario is similar to the implementation of the property valuation and rates policy reform framework at the City of Cape Town and the new property (municipal) rates Act 2004 of South Africa. As already stated in Chapter 1, the intention of this research is to understand and interpret the interaction between actors in a social network created as a result of legislation (in the context of the new property (municipal) rates Act of South Africa).

The focus of the research study, *i.e.*, the new property (municipal) rates Act case study, serves to suggest more focussed directions of inquiry and description for the study of a unique historical event of the City of Cape Town's property valuation and rates reform policy. There is also a richness of anecdotal evidence gathered from the property valuation and rates stakeholders over twelve months of the study, which served to support the interpretations and possible generalisations arising from the data analysis. Thus, the research study fits two of Burns' [1990]

suggested reasons (*i.e.*, his second and third reasons) for carrying out case study research.

It is therefore appropriate to develop, a conceptual framework (see Figure 2.4 below) to illustrate the main aspects of the problem. These are: the network as a result of the design and promulgation of legislation; the inclusion of a new actor in the network; and further institutionalisation of the network due to the inscription of the legislation as functionality of an information system. The framework illustrates that the legislation process creates interactions between actors starting with the identification of the problem as the reform agenda, translating this into Law with the view to create a new discourse, and bringing about social justice and order across time and space.

Legislation should be seen as an outcome of human action in terms of its design, promulgation and use. When a social problem is identified as a national concern which needs to be addressed, the Parliament is used as a forum by a Government ministry or department concerned to define it and solicit the views and contributions from the public through a Parliamentary debate (see Figure 2.4).



**Figure 2.4: Aspects of the Research Problem**

It is assumed that not all legislation is towards reform but the ones which are for reforms, are mostly to create stability and social order. Furthermore, the legislation process creates a heterogeneous network of actors. For the reform to be sustained, it is appropriate to ensure that the legislation is applied consistently and interpreted uniformly as a standard to be followed across the society. It is also appropriate to sustain the network to ensure the collective interests of actors making up the network, are protected.

One of the ways already discussed that could stabilise the network is to deploy an information system as an actor in the network, where its functionality is the inscribed collective interests of the actors. The use of the information system over time then perpetuates the new discourse such that when it is widely accepted by all actors, the continued stabilisation of the network is ensured, and the contents of the information system becomes “black boxed”, *i.e.*, irreversible.

According to McMaster *et al.* [1999], people and things must be represented faithfully in information systems development and both must

be given a voice. It therefore makes sense to see systems such as an information system, as an actor to be included in a social network and for its relevance to be experienced by other actors in the social network. A process therefore would be required to consider candidates for inclusion such that the new candidate's interest is aligned, and be part of the collective to ensure the continuous stability of the network. In Chapter 4 we will discuss how this conceptual framework underpins the initial framework for the analysis of the field results.

### **2.7 SUMMARY**

The Chapter introduced the theories identified by the researcher as lenses through which to understand and interpret the research problem. The chapter described Actor-Network Theory and its Moments of Translation, the concept of Inscription and the concept of irreversibility. It also discussed the stages of the Due Process Model and finally, Structuration Theory where the concepts of Structure, Agency, Duality of Structure and Unintended Consequences of action were described. The Chapter finally presented a conceptual framework within which these theories will be used as lenses to understand and interpret the aspects of the research problem we have narrated in Chapter 1.

In the next Chapter, we shall review and provide a summarised analysis from the literature of the topics which provide the background for the various concepts which support or assist in understanding the overall topic of "the role of an information system in legislation led reform (LLR)".

**CHAPTER 3: LITERATURE REVIEW**

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### 3.1 INTRODUCTION

In the previous Chapter, the focus was on the theories underpinning the research. Three theoretical frameworks, namely, Actor-Network Theory (ANT), the Due Process Model (DPM) and Structuration Theory (ST) were identified and discussed. They will be used as lenses through which the defined concepts will be investigated. The underpinning theories - ANT and ST - are also used throughout this chapter: ANT is used to tease out the concepts contributing to reform driven by legislation and ST, to make sense of the social shaping processes at play in this regard.

To reiterate, the study examines the relationship between a network of actors with aligned diverse interests due to legislation which drives reform as well as the approach needed to implement the legislation using an information system as an actor in this network.

In this Chapter, the objective is to provide an overview of the various concepts contributing to the main concept of legislation led reform. The Chapter also positions the question of the role of an information system as an actor in reform driven by legislation. The review of the literature is structured around the following topics:

- Reform
- Property rates/tax and reform;
- Property rates reform in selected African Countries;
- Legislation and reform;
- Information systems and reform;

Following the review of the literature on the above topics an initial framework is given for the analysis of the results of the field study based on the research questions given in Chapter 1 and the literature reviewed.

The first topic, Reform, is discussed in the next subsection, where the emphasis is on “reform” as a change or transformation which can be intended or unintended. The subsequent sections then take this further and look at two types of reform relevant to this research, namely, Property Rates/tax and reform and Legislation and reform. In both these cases, the reform or change is intended, and the underlying processes are discussed. We also review literature on property rates reform in three African countries with the view to understand the phenomenon on the African Continent in the context of the challenges confronting South Africa in implementing the new PRA. Lastly, the use of information systems in reform is discussed and illustrated from both an ANT and ST perspective.

### **3.2 PERSPECTIVE OF REFORM**

In this research, reform is synonymous to change or transformation and does not consider causes or triggers which bring about change or reform. One of the definitions of reform in the Oxford Dictionary [Thompson 1996] is to abolish or cure (an abuse or malpractice). Drawing from this definition, one can say that reform is an accepted and normal pattern in today’s society and it affects an individual directly or indirectly. One such argument comes from Kanter [1983] who suggests that the architecture of reform involves the design and construction of new patterns or the pre-conceptualisation of old ones to make new and hopefully productive actions possible. Analysing Kanter’s view, one therefore poses the question, what then drives reform in society or in an organisation?

In answering this question, one can draw on the work of Heeks [2000:195-196] who says that there is no agreed menu of elements for reform in society or organisations, but typical components will include increased efficiency and accountability, increased decentralisation, increased marketisation and improved resource management. These elements do

overlap depending on the reform agenda (*e.g.*, eradicating inequity) and the agent of reform (*e.g.*, Central government). It is not the intention of this research to investigate the impact of these components or combination thereof on reform or what they seek to achieve in theory, nor what they do and do not achieve in practice. Rather, these components are taken as given; as initiatives which are being almost universally undertaken or imposed [Heeks 2000].

These components are the foundation for most reforms by and for Governments and the South African Government is no exception to this in relation to the new Property (Municipal) Rates Act as an example of legislation led reform. A reform creates new processes, procedures, policies, cultures, attitudes and more still, interactions between all stakeholders with diverse interests.

There is therefore a need to investigate and analyse these interactions between the stakeholders, agents or actors as the case may be and to understand and interpret how a social network of actors with aligned diverse interests is established. Given the focus of this research, there is also a need to find out to what extent an information system can be included as an actor in such a social network of actors, and what its contribution could be.

If we take reform to imply, as stated above, change of transformation, then two aspects of change or transformation stand out: wilful or intended change, and unintended change. Two examples from the literature are relevant to intended change. First, Madon and Sahay [2004] analysed the case of the Bangalore municipality, where the Asian Development Bank initiated systems for property tax reform. Their account of this reform, viewed through the lens of ANT, is discussed further in section 3.3. Second, Monteiro [2001] discusses the establishment of a working

information infrastructure in an organisation and shows the relevance of ANT to provide “A more satisfactory account of the interwoven relationship between Information Technology and organisational transformations... More specifically, how this interplay works, not only that it exists.”

Monteiro also makes the following remarks in discussing the concept of inscription in ANT: “By inscribing programs of actions into a piece of technology, the technology becomes an actor imposing its inscribed program of action on its users”, and adds the following illuminating elaboration on the use of inscriptions:

*“The flexibility of inscriptions vary, some structure the pattern of use strongly, others weakly. The strength of inscriptions, whether they must be followed or can be avoided, depends on the irreversibility of the actor-network they are inscribed into. It is never possible to know beforehand, but studying the sequence of attempted inscriptions we learn more about exactly how and which inscriptions were needed to achieve a given aim. To exemplify, consider what it takes to establish a specific work routine. One could, for instance, try to inscribe the routine into required skills through training. Or, if this inscription was too weak, one could inscribe the routine into a textual description in the form of manuals. Or, if this still is too weak, one could inscribe the work routines by supporting them through an information system.”*

*[ 2001:79-80]*

This latter point, the inscription of work routines by supporting them through an information system, is taken up in subsection 3.6.1. As exemplified by the above two references, change could be intended. Jones [1999:109-110] states that “Giddens views human agents as essentially knowledgeable about their actions.” This, he continues, “might

seem to suggest that they are always in control of their actions. Giddens avoids this however by emphasising the unacknowledged conditions and unintended consequences of action." Thus, human agents always "have the possibility of doing otherwise" [Giddens, 1993:108]. This aspect of viewing unintended change is taken up in subsection 3.6.2.

The following section focuses on reform initiated by changes in property rates, or, to be more precise, by changes in legislation related to property valuation and rates.

### **3.3 PERSPECTIVE OF PROPERTY RATES AND REFORM**

The previous section introduced reform in the context of addressing inequity in society which leads to reform – intended or unintended. One such reform is property valuation and rating (or taxation). In this section we draw on relevant literature to understand and interpret the use of property rates and reform and how the two have drawn together different agents with diverse interests. According to Madon and Sahay [2004], property rates have been the source of revenue for many municipal governments in developing countries but the inability of these governments to create adequate structures had led to them realising less revenue for infrastructure development. Madon and Sahay [op.cit.] analysed this scenario for the City of Bangalore in India, where several attempts by City administrators to reform the City's property rates system with the view to increase revenue failed to achieve the desired results.

Madon and Sahay attribute the difficulty experienced by the Bangalore City Corporation (BCC) to its inability to mobilise all stakeholders to address the inadequacies in the property tax system and to close the loopholes in the Karnataka Municipal Corporation (KMC) Act and the Rent Control Act of Bangalore. The loopholes originated from:-

- misinterpretation of the Annual Rental Value (ARV) of a property which is calculated as a percentage of a “fair rent”;
- the Rent Control Act which stipulates “fair rent” as rent which is mostly subjective and arbitrary;
- underassessment of property taxes by property owners and some BCC officials;
- no explicit guidelines for property tax assessment;
- weak enforcement powers and low penalties for defaulting property tax payment.

These loopholes were exploited by some Tax Assessors and Revenue Inspectors at BCC and property owners. This exploitation created an informal system (or network) of administering property tax and revenue collection in Bangalore such that these officials, property owners and other stakeholders who had vested interests, stood to gain if the status quo were maintained.

Madon and Sahay [op.cit.] state that this overall ambiguity in the interpretation and implementation of the property tax system (PTS) led to a total lack of accountability and transparency in the system. The above situation made the informal associations so strong that a large section of property owners not only paid less but also managed to escape being included in the tax net [op.cit.].

According to Madon and Sahay all attempts to reform the PTS had only varying and limited success because they were designed within the bureaucratic framework of BCC whose decision makers, tasked with the responsibility of implementing the reform, were also part of the informal network who stand to benefit if the reform efforts were stalled. Given the above situation on the one hand and the desperate need to improve revenue collection for improved municipal service delivery on the other

hand, there were pressures from all quarters of the city to rationalise (*i.e.*, change the methods of assessment and collection of taxes) and reform the PTS.

Madon and Sahay [op.cit.] describe the reform through the Self Assessment Scheme (SAS) which was the term given to the package of reform measures in the PTS. SAS included the manner in which the tax would be self-assessed by citizens rather than by BCC officials and explicit norms to eliminate malpractices in the existing system by ensuring uniformity in taxation.

The implementation strategy of SAS was one which focused on mobilising all stakeholders. This approach was in contrast to the past where they tried to establish mechanisms to ensure compliance. The Chief Minister of Bangalore's intervention also added some impetus to the implementation. The mobilisation of all stakeholders for the SAS implementation was given support through the amendment of the KMC Act particularly by divorcing the Annual Rental Value of a property from the Rent Control Act as the basis for property tax computation. Rental values, according to Madon and Sahay, were calculated as a percentage of a 'fair rent' for a property after deducting a standard percentage (to the extent of 16.66%) as compensation for the cost of repairs and maintenance. Court rulings have supported the Rent Control Act's interpretation of the concept of a 'fair rent' as rent which the owner reasonably expects to receive from a tenant.

According to Madon and Sahay [op.cit.], if the Annual Rental Value of a property 'fair rent' is "divorced" from the Rent Control Act based on the above analysis, one is reducing subjectivity in the assessment of the property tax; thus eliminating the need for property owners to depend on the subjective will of tax collectors in assessing their tax. The legislation amendment through the implementation of SAS also replaced the door-to-

door collection with self-assessment and remittance by property owners themselves at designated collection counters like banks.

Another source of impetus for reform of the PTS came from Asian Development Bank (ADB) initiatives for mega-cities in developing countries (including Bangalore) to enhance their municipal services delivery capacity. Property rates or tax reform in many developing countries have been to improve government revenue and in countries where local governments and municipalities have the authority to levy taxes they have used property rates as a means to generate revenue to improve service delivery. In South Africa, service delivery is at the heart of local government [Heeks, 2000].

According to Youngman and Malme [1994], property rate systems in transitional countries such as the post-communist countries of Poland, Estonia, Czech Republic, Slovak Republic and Russian Federation can be very different from those found in industrial, market-oriented countries. Though South Africa did not come from a communist past, its apartheid past makes it a transitional country and as such, its property rate system needs to be different to address its past inequities. Furthermore, McCluskey and Franzsen [2004] indicate that the prominent role of property rates as a source of own revenue has been maintained despite significant reform of the local government sphere in South Africa since 1993. Actually, its importance as a source of revenue for the recently amalgamated municipalities, established in December 2000, is bound to increase over time.

Advancing his argument for property rate reform and emphasising property rate as an excellent source of revenue for the new local government and municipal structures in South Africa, Franzsen [2001] gave the following reasons:

- Municipalities have been saddled with an important developmental role in terms of the Constitution of the Republic of South Africa, Act 108 of 1996 (see sections 152(1) and 153);
- 'Rates on property' (*i.e.*, property tax) is a guaranteed source of revenue for municipalities in terms of the 1996 Constitution (see section 229(1));
- Although 'surcharges on fees for services' (*i.e.*, what used to be referred to as profits on trading services - see above) are also mentioned as own sources of revenue for municipalities in the Constitution (section 229(1)); the general trend is to become less reliant on surcharges for a variety of reasons (*e.g.*, material changes to the manner in which electricity will be distributed in future); and
- Municipalities now cover South Africa's surface area wall-to-wall, in other words all formerly untaxed rural land is in principle included within the jurisdiction of a taxing authority.

Property rates reform is therefore a task which architects of the reform must ensure does not destabilise the capacity of the local government structures towards service delivery. Also, the reform should not lead to negative results and unnecessary costs. Paugam [1999] argues that to avoid unnecessary costs and disappointing results, property rate reform must be seen and designed as one element of a complex balance of institutional, financial and political relationships between central and local governments and as such must gain ownership by central and local authorities.

This is true in the case of South Africa because the new property rates Act (PRA) as defined and described in Chapters 1 and 5 has ownership with

the central government through the ministry of provincial and local governments [MPLG 2002]. The Act describes the roles and responsibilities of the Provinces, Municipalities and Local Councils as well as the Central Government through the ministers of Finance and Provincial and Local Government.

The necessity for property tax reform as a means to make municipalities and local governments sustainable and to deliver good services to communities was also echoed by the Iowa League of Cities (ILC) and the Iowa State Association of Counties (ISAC) [ISAC and ILC, 2004] to garner support for a new property tax reform initiative by the Iowa State Legislature. A Local Government Tax Group made up of a joint committee of ISAC and ILC campaigned for support of the property tax reform, indicating that it will eliminate inequities caused by the rollback formula, *i.e.*, a tax system which taxes homes at a constant percentage of property value, now 48.5%, which essentially creates a 51.5% exemption for all homeowners. They reiterated that it will:

- improve accountability to taxpayers;
- eliminate the impact on local governments from state funding decisions regarding property tax credits;
- allow cities to respond appropriately to local issues;
- broaden the property tax base; and
- enable and protect revenue alternatives.

According to Ding [2005], property rate reform is based on the following four guiding principles which are not different from the property tax reform support campaign by the ILC and ISAC:

- Simplify the tax system;
- Broaden the tax base;

- Lower tax rates; and
- Strictly administer tax collection and management.

These principles have guided many transitional countries or economies to reform property and land tax of which South Africa is no exception. The principles do create new opportunities to reduce the costs of assessment and administration of properties and to ensure greater equity and uniformity. In South Africa, Dunkley [2002] notes that the new Property (municipal) Rates Act, which is heavily biased in favour of the poor who are mainly in need of this assistance, calls for improved value rating (*i.e.*, total valuation) with no option. He stated:

*“..... is a national disaster, but a subject for some further discussion. A lot of work is being done with little results. They say it is better to try and fail than not to try at all” [op.cit.]*

Dunkley [op.cit.] is of the view that the Site Value Rating (SVR) methodology which taxes the value of rental or purchased land gives more revenue to the City than the improvements on the land. The latter is the case with Total Value Rating (TVR) where the City will end up with less. Dunkley sees the TVR approach as a blessing in disguise. He says:

*“..... it could well be better for the rage to be against the new system of wealth distribution rather than against a change to site value rating” [op.cit.]*

The property rates reform in South Africa as a developing country is to eliminate rates inequity but underneath the reform is the drive for improved revenue to sustain municipal service delivery to communities. In the case of property tax reform in Bangalore, Madon and Sahay [2004] allude to the fact that the Self-Assessment Scheme (SAS) implementation provided

opportunity for the Bangalore City Corporation (BCC) to increase revenue. The 2000-2001 budget reported a record property tax collection of Rs.1570 million, representing a 40% increase from Rs.1170 million collected the previous year. This was supported by Franzsen [2003] in his argument in relation to reform in developing countries that property valuation and rating reform has been on the agenda of many developing countries as an important source of revenue, especially at local government level.

In their International Monetary Fund (IMF) report [Malme and Youngman, 2001] insist that for developing countries to sustain social and economic development, their macroeconomic and structural reforms would have to focus on enhancing revenue mobilisation and specific sectoral reforms, of which property valuation and rating is one. Furthermore, Marten [1999] and Franzsen and McCluskey [2000] explain that it is commonly acknowledged throughout southern and eastern Africa that property tax is an important source of revenue for local government and that there is much scope for improvement in all of the important aspects that are integral parts and prerequisites for a well-administered property tax system. A crucial element is therefore that of property assessment.

Franzsen [2002] suggests that on the one hand, the preparation of a proper valuation roll requires accurate data pertaining to rateable property parcels; but on the other hand, it is all in vain if the tax assessed is not collected. He further argues that the municipal valuer, albeit unwillingly, is a team player. His/her own performance unfortunately is dependent on how the other players (e.g., those responsible for accurate property records and those responsible for tax collection and enforcement) perform. According to Bell and Bowman [2000], Franzsen and McCluskey [2000], and Franzsen [2002], it will take a considerable effort and commitment on

the part of all concerned if the current, rather dismal state of municipal assessment for rating purposes is to improve significantly in South Africa.

In summary, the need for carefully designed and promoted reform in property rating or taxation is clear. The review highlights the need to ensure consistent interpretation of the reform and uniform application of the “rules” of the reform across time and space. A cautious conclusion can be drawn that property rates reform in any country calls for inclusiveness of all role players to create a network of actors to interact and align their diverse interests with the view to stabilise property valuation and rating.

The next section describes property rates reform initiatives in selected African Countries, which were briefly investigated and supported by existing literature as part of this research. From the investigation and literature reviewed, these reforms were to achieve stability and social order through consistent and uniform property valuation and rating in those countries. What is lacking though is the inclusion of an information system to carry across consistent interpretation and uniform application of the provisions and procedures of those Acts.

### **3.4 PROPERTY RATES REFORM IN OTHER AFRICAN COUNTRIES**

The previous section presented the context of property rates and reform. This section looks at property rates and reform pursued in selected African countries and the challenges thereof. Those challenges in a way reflect the reform agenda driven by legislation on the continent of Africa. A conference white paper published in November 1995 by the Municipal Development Programme (MDP)<sup>6</sup> for Eastern and Southern Africa

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<sup>6</sup> <http://www1.worldbank.org/wbiep/decentralization/afrlib/Afproptx.htm#Howard>

describes the policy and institutional issues which condition or affect the performance of property valuation and rating on the continent of Africa.

The focus of the conference was on property valuation and rating administration and finding concrete ways in which appraisal, rating, billing, collection, and other administrative functions could be improved. This focus reflected the MDP's conviction that property valuation and rating reform should be undertaken on a comprehensive basis, integrating policy and conceptual issues with administrative ones. The MDP also identified that successful reform needs significant and systematic political processes and interaction between policymakers, property owners and ratepayers, property developers and agents, commercial banks and administrators, *e.g.*, municipalities, district councils, conveyancers and Deeds offices. Given the above introduction, the following subsections describe the legislation driven property valuation and taxation reform which have taken place in Ghana, Namibia and Kenya.

### **3.4.1 Property Rates Reform in Ghana**

In their Working Paper 2 entitled "Property Tax in Ghana: Personal Experience," Koney and Akwensivie [1996] indicate that the Local Administration Act [Act 359] enacted in 1971 extended valuation throughout the country for the purpose of rating that allowed all local authority areas in Ghana to become valuation areas.

According to Koney and Akwensivie, before the country Gold Coast became Ghana in 1953, property rates were confined to only four municipalities (Accra, Kumasi, Sekondi/Takoradi, and Cape Coast) and the system of valuation for rating purposes was based on the number of rooms in a house. It was assumed that each room had one window;

therefore, the municipal council officials would simply count the number of windows to a house to determine the rateable value of each house.

That is, the more the windows the higher the rateable value and ultimately the rate payable on the building. The Municipal Councils Ordinance (Ordinance No. 9 of 1953) was enacted which altered the basis of property valuation to an "annual rental value." This new development initiated by the government of Ghana was seen as tax collection improvement [op.cit.]

Subsequent to the 1953 Municipal Councils Ordinance, a recommendation from a United Nations sponsored project under the leadership of Dr Murray was submitted to Ghana Government with the view to reform the property valuation system. The focus of Dr Murray and his team was to create a uniform and consistent approach to property valuation and rating throughout Ghana. Furthermore, they were to improve property tax collection and broaden the revenue base of the Municipalities and the Local Authorities. This subsequently led to the Municipal Rating Act of 1959 and the subsidiary legislation enacted under the Local Government (Immovable Property Rate) Regulations of 1960.

These two legislations introduced tremendous changes and improvement to how properties are valued and rated. For instance, the Minister of Local Government was given the power in the Act to declare a municipality or local/urban council area a "valuation area." The Acts also created the environment to increase valuation skills through new training institutions and changed the basis of valuation from "annual rental value" to the "replacement cost" which was upheld by the Local Government Act of 1993 (Act 462).<sup>7</sup>

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<sup>7</sup> <http://www1.worldbank.org/wbiop/decentralization/library9/Afproptx.htm#Koney>

There is still work to do in Ghana with regard to property valuation and rating. The Act needs to be amended to properly value and rate properties across the country and also to improve rates collection.

### **3.4.2 Property Rates Reform in Namibia**

Namibia property valuation and rating was restricted to “white areas” only. “Black areas” or what is popularly known as black townships were not covered by rating and as such no rating for the purpose of tax collection took place which subsequently made the ‘black’ townships the least developed [Howard, 1996]. Howard [op.cit.] reported:

*“Despite urbanization in these black townships, no attempt was made to introduce any form of land or property rating until 1990.”*

According to Howard [op.cit.], after the independence of Namibia in 1990, the combined Townships and Division of Land Ordinance of 1963 and the Local Authorities Act of 1992 have been used to undertake a programme of proclaiming townships and creating local authorities. In summary, the 1963 legislation provides the physical framework, layout, and plots for the towns and the 1992 legislation provides for the administrative structure, including local rating through property rates. The subsections XIV, XV, and XVI of the 1992 Act deals with assessment and the levying of rates.

The system procedures in the 1992 Act catered for valuation processes, taxable or rateable properties, the rates liable entities, the process to address rates objections and the arbitration procedure. Using the Act, the Government of Namibia has succeeded in reforming its revenue base for the rapid development of the previously neglected townships and rural areas of Namibia due to apartheid.

The process embarked upon by the Namibian Government to amend and introduce the 1992 Local Authority Act, brought stability to property valuation and rating and this was due to more stakeholders accepting and aligning their interests to become part of the solution to address the apartheid legacy. This helped to achieve transformation in the property valuation and rating in Namibia. Much still needs to be done in relation to an information system support to ensure consistent interpretation and uniform application of the Act across Namibia.

### **3.4.3 Property Rates Reform in Kenya**

In a working paper entitled “Aspects of Rating Practice in Kenya,” Konyimbih [1996] indicates that the local government system evolved in Kenya, and on 30 April 1963, the Local Government Act was passed to establish and regulate the functions of local government authorities. Konyimbih also indicates that after the independence of Kenya in 1963, the Local Government Ministry formalised property rates. Two Acts of Parliament have since been promulgated to empower local authorities throughout the country to effect rating on land values. Konyimbih describes the two pieces of legislation as:

- **The Valuation for Rating Act (Cap 266]** which empowered local government authorities to value land for purposes of levying rates; and
- **The Rating Act (Cap 267]**, which provided for the imposition of rates on land and buildings in Kenya.

The political processes and interaction embarked upon to amend and introduce these Acts of Parliament in Kenya enabled the Government to reform property valuation processes and introduced consistency in property rating across the country - improved and unimproved and public and private properties. By these two Acts of Parliament as a reform

instrument, the Government of Kenya succeeded in bringing all role players together to accept the need to improve rates collection to increase the revenue base of the Government and the municipalities to improve service delivery across Kenya.

The central interest of the Government, which was to generate reasonable revenue for the Municipalities and Local Authorities for development, was eventually understood and bought into by the Local government structures and other representations to make the reform a reality<sup>8</sup>. Konyimbini [op.cit.] alludes to the fact that there were problems which emanated from lack of understanding and knowledge of existence of the Acts by land and property owners. The problem was also compounded by less qualified valuers and inconsistent interpretation and application of the Acts by Local Government Officials in charge of land valuation and rating.

In summary, property valuation and rates reform in the African countries mentioned above is to improve the revenue base of the Municipalities and Local Authorities and generally, the government tax collection net. What is prevalent in all these Acts examined in those African countries is that through legislation a reform was implemented by the government. It assumed (as this has not been tested except through literature) that the acceptance of the reform by all stakeholders was done through the legislation process and some form of interaction between the Governments and the stakeholders.

In all the examined legislation which was towards reforming property valuation and rating policy, the rationale of the governments was to eradicate inequity in property valuation and rating and the administration thereof. The objectives in most cases are the need to improve rates

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<sup>8</sup> <http://www1.worldbank.org/wbiop/decentralization/library9/Afproptx.htm#Konyimbini>

collection, property records management and regular update thereof to offset the initial costs of preparing the fiscal cadastre (not tested except through literature). It is obvious in all the property valuation and rating reform Acts that the Act provisions and the systems procedures lend themselves towards possible automation.

In the next section, an attempt is made to describe how legislation is used to achieve inclusiveness towards reform, and the new property rate Act of South Africa and other similar legislations are positioned as means to negotiate and align diverse interests of all concerned to ensure stability and social order across time and space.

### **3.5 PERSPECTIVE OF LEGISLATION AND REFORM**

In the previous section, we discussed the need for property rates reform to address inequity with a secondary benefit of improving revenue collection for municipal service delivery. This is done on the back of legislation as a means to draw different groupings, government agencies or departments, individuals and procedures together to establish a common view of the reform.

Therefore, the purpose of this section is to develop an understanding of reform through legislation and the process of consultation leading to the enactment of it. The section also discusses a parliamentary system and the legislation process (or sources of law) and argues that legislation as an artefact embodies 'patterns of use' [Akrich and Latour, 1992] which had come from aligned diverse interests of actors (human) interacting in a social network [Callon, 1991] to address a social problem.

It is therefore necessary that we understand reform as a change in the broader sense of transformation in society. It is not the intention of the

research to present types of reform but rather reform through an Act of Parliament where examples of such reform in South Africa are given in Table 3.1. It must be emphasised that not all legislation is about reform. The following subsections discuss the process of legislation (or an Act of Parliament) in order to develop a further understanding of the strength of the process of legislation to draw stakeholders together to influence the content of legislation.

### **3.5.1 Outline of the process of legislation**

The purpose of this subsection is to develop an understanding of a legislation process which brings together all stakeholders with diverse interests towards the amendment and/or enactment of law in society. The context of the discussion is the general parliamentary dispensation using English Law with particular reference to South Africa. The section starts by defining legislation as a statute or Act of Parliament followed by a description of how and why States, generally, legislate. Finally, a standard model of the legislation process in South Africa is presented.

Kevin's English Law Glossary [2003] defines a Statute or Act of Parliament as a specific piece of primary legislation introduced into the body of law by Parliament, often under the guidance of the Government. Primary legislation means legislation introduced into the body of law by the apparatus of state (e.g., the Government). A Bill [op. cit.] therefore is a proposed new piece of legislation that will, if it is accepted by the National Parliament, become a Statute. Government ministers introduce most Bills, and these occupy the largest proportion of Parliamentary time. Government Bills are usually introduced into Parliament in the form that the Government wishes to see enacted; they are therefore carefully drafted, usually after a period of consultation.

This consultation [op. cit.] will usually take place confidentially between various Government departments, but it will sometimes involve publication and circulation of a Green Paper or a White Paper. Parliamentary Council (or portfolio committee in the case of South Africa) carries out the actual drafting of Government Bills. A Green Paper or a White Paper may be debated in Parliament, but it is rare for the actual draft Bill to be published or debated. In general, the creation of a new Statute follows a procedure similar to the following:

- A Bill is formulated, usually by the Government and perhaps after a period of consultation;
- The Bill has its first reading, usually in the Lower House; this is mostly a formality;
- The Bill has its second reading, which is a debate and which may be followed by a Division, *i.e.*, a vote either for or against a Bill in Parliament. If the vote goes against the motion then the Bill is defeated. With Government Bills, this is unusual. If the vote is for the Bill, it goes on to the Committee Stage.
- In the Committee Stage the Bill is discussed in detail, and amendments may be made;
- The findings of the committee stage are debated in the report stage, in which further amendments may be offered and voted upon;
- The amended Bill has its third reading, which is often a formality.

In the case of South Africa, the new constitution which came into effect in February 1997 [Murray, 1998:6] created a bicameral Parliament consisting of the National Assembly (NA) and National Council of Provinces (NCOP). Together, these two houses of Parliament are responsible for passing the legislation which governs the new South Africa.

The roles of NA and NCOP are complementary and yet to some extent, identical. That is, the NA represents all South African voters and expresses the democratic will of the people, making it the more powerful of the two houses or Chambers. The NCOP, though it has a limited role, is critical due to the fact that it represents South African citizens not directly, in their role as individual citizens, but indirectly, in their role as residents of the provinces, which constitute one of the three spheres of government (*i.e.*, National, Provincial, and Local) enshrined in the constitution.

The NCOP represents the provincial perspective within the National Parliament. The NCOP as the second house of the South African Parliamentary system is made up of the Provincial Premiers and their Executive Council Members (MECs). If a Bill is introduced (*i.e.*, after the first, second and third readings) in the first house (*i.e.*, the NA), it then moves to the second house (*i.e.*, the NCOP), which follows essentially the same procedure as the first house. In the NCOP the 'committee stage' is usually held on the floor of the House rather than in the committee.

If the NCOP amends the Bill, these amendments are debated again by the NA, which may accept or reject them. The Bill then passes back to the second house for reconsideration. In practice, the Premiers usually accept the Bill after it is submitted the second time. When the NCOP approves or accepts the Bill, the President signs it into Law and it becomes an Act of Parliament.

Most Governments in democratic societies ensure that their interest is inscribed in the content of any Bill. Being the representative of the majority of the people this would normally be representative of the interest of the people. When the Bill is enacted and becomes a Law, it can be seen to play an important role in the change initiated by Government.

From the perspective of ANT, the Law, with Government's inscribed interests, act as a delegate of Government to enrol actors such as individuals, institutions and other systems into a network of aligned interests. These enrolled actors accept and comply with the obligatory passage point represented by the Law towards the change or reform intended by Government.

The Government, through parliament, is often the initiator of Bills which lead to Acts of Parliament. The next subsection discusses how the legislation process brings together actors (human and non-human) with diverse interests to create a network of association.

### **3.5.2 Legislation and Reform**

In the previous section, legislation was identified as Law, which is an Act of Parliament usually initiated and guided by the Government through the structures of Parliament [Murray, 1998] and in the case of South Africa, through the two houses of the National parliament. It was also mentioned that, and from the perspective of ANT, Government in such a process is the focal actor (or initiator) of a network [Callon, 1991] with a specific agenda – reform (of one kind or the other). This section attempts to develop a further understanding of how legislation will lead to reform in society.

Whilst the focus has been on mechanisms such as legislation to implement property valuation and rating reform, there has not been much attention to the process and nature of interactions between all concerned (human and non-human) to ensure that the process is inclusive and the outcome demonstrates stability of the association and social order across time and space. According to Franzsen [2003], although comprehensive property-tax legislations (*i.e.*, valuation and rating legislations) are in place

in many developing countries, giving practical effect to the provisions of the legislation presents problems.

Referring to certain countries of the Southern African Development Community (SADC), Franzsen [op.cit.] explains the challenges of implementing the provisions of the legislation as:

*“A variety of different tax bases are used and typically the property tax coverage in these countries (with South Africa and - to some extent - Namibia the exceptions) are low (Botswana and Swaziland) to very low (Lesotho). The lack of properly qualified and skilled Valuers presents itself as a serious stumbling block in improving and maintaining the quality and credibility of valuation rolls. Collection and enforcement are also generally poor and the relationship between councils and taxpayers strained. Taxpayer education is almost non-existent.”*

There is therefore a need to research and obtain a better understanding of the political, constitutional and legal environment within which property assessment and rating are administered [Franzsen, op.cit.].

Madon and Sahay [2004] used Actor Network Theory (ANT) as a lens to analyse the years (mid-1990 to 1999) of varying and limited degree of successful attempts by the Bangalore City Corporation (BCC) to reform the property tax system (PTS). They attribute the low level of success to the:

- Attempts designed within the bureaucratic framework of the BCC.
- BCC following a “diffusion model” based on the assumption that decisions taken by central authority would be complied with by concerned others.

- Decision makers who are responsible for implementation of the reform are to gain by stalling the reform efforts.
- Limited involvement and pressure from external stakeholders like the media and citizen groups.

They indicate that the quest to increase negotiations to include a variety of 'non-state' interested parties such as advocacy groups, small and medium enterprises, NGOs, and the media in governance, eventually shaped the reform. It must be noted that the PTS comprises of different agencies involved in framing and administering the property tax system, networked by virtue of their role and responsibilities in defining the system, and the various information flows that surround its administration [Madon and Sahay, 2004].

In their analysis, Madon and Sahay point out that due to pressures from all sides to rationalise and reform the PTS, the BCC introduced the Self-Assessment Scheme (SAS). The rationale for the SAS was to set explicit norms to eliminate malpractices in the system, by ensuring uniformity in taxation and enhancing revenue collection for the cash strapped BCC [Madon and Sahay, 2004].

The Madon and Sahay analysis point out that the amendment to Karnataka Municipal Corporation was not to base the annual rental value computation of properties on the "fair rent" (of the Rent Control Act) the property owner is expected to get. Instead, it used a 'fixed unit rental values' based on registration values provided by the Department of Land Records and subject to revision once every five years. This then made the computation of property tax on annual rental value as stipulated in the KMC Act divorced from the Rent Control Act. This new legislation as an "artefact" embodies new standards of administering property tax in Bangalore.

According to Akrich [1992:205], artefacts embody ‘patterns of use’: “standard thus simultaneously embody and measure a set of relations between heterogeneous elements.” One can therefore argue that most Governments in an attempt to achieve certain reforms will enact Laws (*i.e.*, legislations) as artefacts to embody ‘patterns of reform.’ For example, in the context of South Africa several Acts of Parliament<sup>9</sup> relevant to the broader reform agenda have been signed into law since the beginning of 2004. Table 3.1 below provides examples of legislation related reform. The intention of highlighting these examples is to indicate that there are legislations other than the new Property (municipal) Act which have been promulgated in South Africa which are reform driven.

	Act	Date Signed
1	Division of Revenue	30 March 2004
2	Telecommunications Amendment	30 March 2004
3	<b>Local Government: Municipal Property Rates</b>	<b>11 May 2004</b>
4	National Environmental Management: Biodiversity	31 May 2004
5	South Africa Social Security Agency	30 May 2004

**Table 3.1: Examples of Legislation Led Reforms in South Africa<sup>10</sup>**

The ***Division of Revenue Act*** is to provide for the equitable division of revenue anticipated to be raised nationally among the national, provincial and local spheres of government for the 2004/05 financial year and the reporting requirements for allocations pursuant to such division.

The ***South Africa Social Security Agency Act*** is to provide for the establishment of the South African Social Security Agency as an agent for the administration and payment of social assistance. It will provide for the administration and payment of social security by the Agency and the provision of services related thereto.

<sup>9</sup> <http://www.polity.org.za/pol/acts/2004>

<sup>10</sup> <http://www.polity.org.za/pol/acts/2004>

The ***National Environmental Management: Biodiversity Act*** is to provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act of 1998. It will protect species and ecosystems which warrant national protection. It provides for the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.

Finally, the ***Telecommunications Amendment Act*** is to amend the Telecommunications Act of 1996 to give powers and assign duties to certain categories of operators for the purposes of interconnection and facilities leasing; and to provide for matters connected therewith.

In most democratic countries, before a Bill is signed into Law as an Act of Parliament, the Government uses it as a social and political process to interact [Murray 1998], and to negotiate and to align the diverse sets of interests of institutions and citizens [Akrich and Latour, 1992]. The network increases as the provisions of the legislation in the material artefact (*e.g.*, new PRA) get embraced through acceptance and adherence across time and space, thereby ensuring stability and social order [Walsham, 1997].

Therefore, in establishing these artefacts (*i.e.*, legislation as collective interests of all concerned) particularly towards reform, most Governments would have negotiated for the alignment of diverse interests of all stakeholders using the legislation process. In the case of South Africa, the Government does so using the two houses of parliament (*i.e.*, NA and NCOP).

To summarise, legislation, as an Act of Parliament, is a means with which most Governments implement their reform agenda and build heterogeneous networks of all concerned and align their diverse interests to ensure transformation in society. The government's primary focus in the build-up of such heterogeneous networks is to eliminate the various socio-technical reasons that could contribute instability to the network.

In the next section, we will discuss these networks and focus in particular on the influence of an information system as a non-human actor in the network, to facilitate the institutionalisation of the social network and actualise its stability.

### **3.6 PERSPECTIVE OF INFORMATION SYSTEMS AND REFORM**

The previous section briefly indicated that a network of actors with aligned diverse interests is created as a result of the design and promulgation of an Act of Parliament. It alluded to the fact that legislation embodies the collective interests of actors with regard to the legislation agenda, *e.g.*, reform. It was also mentioned that the legislation process by its nature of consultation creates interactions between the actors which often lead to the construction of heterogeneous networks [Law and Callon, 1997].

This section discusses the relationship between reform as embodied in legislation and information systems. The section argues from the perspective of actor-network theory (ANT) and in particular the concepts of inscription and irreversibility [Akrich and Latour, 1992; Callon, 1991, 1994] that an information system can be used to institutionalise a network of actors [Monteiro, 2001] with collective interests. It further argues that inscribed collective interests as 'patterns of reform' [Monteiro, 2001:76-80] in legislation are likely to influence the creation of an irreversible network. As Law [1992:387] points out:

*“Thus a good ordering strategy is to embody a set of relations in durable materials. Consequently, a relatively stable network is one embodied in and performed by a range of durable materials.”*

The section proceeds with the argument that the institutionalisation of the network is achieved through ‘inscription’ of the ‘patterns of reform’ embodied in the legislation as functionality of an information system. A further argument from this perspective [Antonelli 1993] is that the use of an information system to carry the ‘patterns of reform’ as standards creates lock-ins and user-reinforcing effects (*i.e.*, irreversibility) which will enable consistent interpretation and uniform application of the collective interests across time and space.

The study does not distinguish between technology and an information system. Rather it sees an information system as a system of technical components (technology being one of the components) which accepts, stores, processes, outputs and transmits information [Heeks 2000:15]. It may be based on any combination of human endeavours, paper-based methods and technology. To discuss this further, the section is divided into two subsections. The next subsection discusses information systems and reform from an ANT perspective. In the second subsection, a structuration theory perspective is given.

### **3.6.1 Information systems and reform from an ANT perspective**

To reiterate what has already been discussed in Chapter 1, ANT is used as a lens through which we can understand and interpret the collective interests of actors interacting in a social network of a particular agenda; in the case of this study, reform driven by legislation. In this network, a particular information system plays an important role as an enforcer of particular aspects of the legislation aimed at specific reform. Studying this

network through ANT will thus enable us to gain a deeper understanding of the role of information systems in reform. This will be undertaken in chapter 6, but here we will first look at what authors have reported that is relevant to this study.

Walsham and Sahay [1999] used ANT to understand and interpret the political processes of systems implementation. From McMaster *et al.* [1999:353], systems implementation is influenced by technologies (*e.g.*, operating system software), organisational (*e.g.*, financial controls) and operational (*e.g.*, support and maintenance) decisions on how to enrol these in information systems implementation. In their analysis of the development and use of geographical information system (GIS) in district-level administration in India using ANT, Walsham and Sahay [op.cit.] identify that none of the districts studied had created stable sets of key actors with aligned interests related to GIS. That is, the developers of the technology did not take into consideration the local Indian settings and as such the GIS was not adapted to the local settings. Their findings affirm ANT's principle that social and technical stability resides in the mutual dependency between technological properties and social context.

Madon and Sahay [2004] used the 'moments of translation' of ANT to understand and interpret the process of implementing the Self-Assessment Scheme (SAS) to reform the property tax system (PTS) in Bangalore. In their analysis, they found that past initiatives to reform the PTS was largely unsuccessful due to a lack of citizen participation in urban development affairs and inadequate local governance structures in Bangalore. Their analysis also revealed that the success of the SAS implementation (or the PTS reform), was dependent on increased negotiations with and the inclusion of both "state" (global) and "non-state" (local) agents.

The global level included stakeholders such as the Asian Development Bank (ADB) and the Bangalore Agenda Task Force (BATF) who were important catalysts in the implementation of PTS reform. The local level was made up of a variety of 'non-state' actors such as non-governmental organisations, civil society, small and medium enterprises and the media. The global and the local governance were seen as the actor network with aligned interests who did influence the formal systems of governance. The network also actively elicited participation of the representatives of marginalized groups in the city who stand to benefit most by the introduction of reforms like the SAS.

Madon and Sahay admitted that the network was always in a state of disagreement with constant threat of breakdown which, admittedly, also existed between the actors. But the negotiations that occurred among the actors, in the network, resolved the diversity and tensions which eventually helped to keep the network in place. That is, embracing diversity and continuous negotiations in the network contributed to the successful implementation of the SAS system. Thus, by using ANT as a lens to analyse the processes of collaboration between key stakeholders, Madon and Sahay were able to untangle the meaning of the term 'reform'.

Heeks [2000:15] indicates that technology on its own does not do anything useful. But in order for technology to do anything, it must become part of an information system. Therefore, information system design, development and deployment are influenced by the intended technology to use. From the perspective of ANT, one could argue that technology or an information system as a non-human actor when deployed into an institution or organisation becomes part of an actor-network. Hence, through the processes of translation and inscription, actors' heterogeneous interests are aligned with each other and embedded into information systems (technologies) that stabilise the actor network, at least

temporarily [Akrich 1992; Callon 1991]. Once stabilised, an actor-network may become seemingly irreversible and thus resistant to further translation [Callon 1991].

Therefore, institutional reform is the process of change of processes, procedures, policies, values, traditions, or structures based on one or a combination of the four components of reform [Heeks, 2000:195-196] already alluded to in section 3.2. This suggests a much greater, if not more overt, role for an information system in the process of reform. Licker [1997] defines an information system as “a collection of elements (things, procedures, people) that interact in order to meet a goal.” Expanding on this definition in relation to the socio-technical process of negotiation to create a social network of associations, one could describe the ‘goal’ as the establishment of a network of elements with aligned diverse interests, and the ‘elements’ as human and non-human.

Drawing from Latour’s [1991] work, an information system, as a non-human actor in an actor-network interacts with other actors in the network to align their diverse interests to the interest of the initiator of the network. Therefore, from the perspective of ANT, and particularly the concept of inscription, one can inscribe programs of actions (*e.g.*, the reform agenda as embodied in the legislation) into an information system which then becomes a delegate imposing its inscribed programs of actions on its users [Walsham, 1993]. This imposition creates a new organisational discourse which becomes part of the properties (*i.e.*, discursive furniture) of the organisation [Wastell, 2002:182].

Contributing to this observation is the work of Monteiro and Hanseth [1995], who describe an information infrastructure (INI) as a kind of information system having a number of characteristic features which distinguish it from other kinds of information systems and influence the

way it is developed, spread and used. “A principal difference, related to the fact that an INI is a systemic technology which regulates communicative behaviour, is the role and status of standards. For most technologies including the bulk of other Information Systems, standards evolve gradually as the technology matures. What makes INIs different is the absolute requirement that all involved parties has to adhere to a standard at any given moment” [op. cit.]. Besen and Saloner [1989] also pointed out that “the INI simply ceases to exist if communication does not follow the standard”.

Taking a view from Law’s [1990] work, we can argue that the interest defined by an initiator of a network becomes the obligatory passage point (OPP) and communication within the network by actors is done according to the OPP. In the context of legislation led reform, the legislation is the OPP because legislation contains the collective interests of the actors in the form of provisions and systems procedures which dictate the norm for the application of the legislation. Hence, the legislation has become “indispensable” [Callon, 1986:204] and when used to create the functionality of an information system, the information system also becomes an OPP and through the routine usage of the information system, the provisions and systems procedures are enforced.

Contributing to the above debate, Applegate [1994] and Orlikowski [1991] indicate that an information system plays a crucial role in enabling and amplifying the dominating trends for the transformation of organisations or society. According to Hanseth and Monteiro [2003], stability (*i.e.*, irreversibility) of a social network derived from the alignment of diverse interests of actors can be established by using an information system to institutionalise the social network of actors with aligned interests because of an information system’s capability to ensure standardisation of the inscribed interests. Jones [in Currie and Galliers, 1999:125] concurs, and

in relation to an information system and reform, suggests that technology (*i.e.*, an information system) reinforces the institutional status quo (*i.e.*, the new discourse) such that it emphasises standardisation, control, and efficiency.

Thus, according to Monteiro and Hanseth [1995], by inscribing programs of actions as standards and embedding the standards in an information system as functionality, the standards become increasingly difficult to modify when the information system is adopted due to continuous and routine use. In the context of legislation led reform, to have a certain level of success in implementing the legislation (and to ensure consistent interpretation and uniform application) is to inscribe the provisions and systems procedures as functionality of an information system. The important characteristic here is the information system's ability to create stability. As such, any modification to the legislation (as standards) ought to be coordinated and/or organised properly to avoid reversing the stability of the network. In this case, an information system is construed to have shaped and enabled the stability of a social network.

Antonelli's [1993] and Monteiro and Hanseth's [1995] works suggest that an information infrastructure (or system) produces "network externalities." That is "a situation where the value for the users increases with the diffusion of the technology (information system), creating lock-ins and self-reinforcing effects". Thus, the information system enables the network to exhibit the properties of irreversibility [Callon, 1991] thereby creating stability and order in the network. These irreversibility properties of the network as a result of the irreversible inscribed reform agenda as a functionality of the information system, again endorses the new discourse. From the perspective of ANT, the new discourse has created an obligatory passage point (OPP) such that actors don't need to be defensive of the prevailing discourse but accept the new and become part of the new actor

network. That is to say, the new discourse, perpetuated by the information system's functionality, is the enabling factor to build the actor-network.

According to Callon [1986] and Law [1999], for actors to be able to align their diverse interests and be part of a heterogeneous network they need to overcome some obstacles. The obstacles can take the form of old practices, processes, procedures, etc. (*i.e.*, old discourse) which are not perhaps advocated by the focal actor and not part of the new agenda (*i.e.*, new discourse). Therefore, the functionality of an information system perpetuating the new discourse provides the parameters which dictate the norm such that actors interacting in the heterogeneous network are compelled to comply.

In relation to the new PRA, an information system ought to have the property rates Act as a "program of action" embedded in its functionalities to become a means through which the actor-network stability is continuously negotiated in the context of aligning diverse interests of actors. This means that actors such as the ratepayers, relevant structures (such as departments at municipalities) and ward councils would have to comply by reforming relevant policies and procedures to enable them to be part of the network.

In the next subsection, discusses information systems and reform from a structuration theory perspective.

### **3.6.2 Information systems and reform from a Structuration Theory perspective**

In the previous subsection, an overview was given of the use of ANT to discuss and analyse situations where a (legislation led) reform agenda was supported by information systems. We discussed how the reform

agenda, or at least functional and other aspects of it, are inscribed into the information system by its designers. As noted by Monteiro [1991], “Inscriptions are given a concrete content because they represent interests inscribed into a material.” And, as Law [1992:387] points out: “...a relatively stable network is one embodied in and performed by a range of durable materials”.

Monteiro [op.cit.] adds: “The strength of inscriptions, whether they must be followed or can be avoided, depends on the irreversibility of the actor-network they are inscribed into. It is never possible to know beforehand, but by studying the sequence of attempted inscriptions we learn more about exactly how and which inscriptions were needed to achieve a given aim. To exemplify, consider what it takes to establish a specific work routine. One could, for instance try to inscribe the routine into required skills through training. Or, if this inscription was too weak, one could inscribe the routine into a textual description in the form of manuals. Or, if this still is too weak, one could inscribe the work routines by supporting them by an information system.”

In this subsection, the focus is specifically on how the information system which “embodies” the reform agenda as inscription, can become institutionalized, and how it can contribute to the institutionalization of the network itself. We pursue this objective through structuration theory, a project which is not without serious obstacles, since Giddens’ structuration theory does not include technology or for that matter, information systems in its discourse.

Although structuration theory has been used as a lens under the current study to complement ANT in understanding the inter-relationship between actors in an institutionalized (successful) and stable network, it can, on its own, provide structural insight into social practices. Social practice

which exhibits regular or routine (i.e., the habitual, taken-for-granted activities of day-to-day social life) features of encounters across time and space. Such features represent institutionalized features of social systems. The institutionalization process of social systems can be structurally analysed (retrospectively) in terms of social integration, systems integration, and routinization.

This overview will first trace the various attempts that have been made in the literature to “reconcile” structuration theory with the very real problem of gaining a deeper understanding of the problem and the impact of information technology/system on organisations - or to put it in the context of the subject of this study - the impact of a specific information system designed to have the functionality to support a Property Rates reform agenda on that part of society that would use such a system.

While it is fairly commonly accepted [Monteiro 1991] that “information technology is perhaps, the crucial factor as it simultaneously enables and amplifies the currently dominating trends for restructuring of organisations”, this does not take us very far, and “to be instructive in an inquiry concerning current organisational transformations, one has to supplement it with a grasp of the interplay between information technology and organisations in more detail.” Monteiro [op. cit.] proceeds to discuss this using ANT, but here we focus on what ST can contribute to the discourse.

Over the years a number of attempts have been made to develop structural models of technology [Barley, 1986; Poole and DeSanctis, 1990, 1992; Orlikowski and Robey, 1991; Walsham and Han, 1991; Orlikowski 1992; Walsham 1993; DeSanctis and Poole 1994]. These models, Orlikowski [2000] notes, “posit technology as embodying structures (built by designers during technology development), which are

then appropriated by users during their use of the technology. Human action is a central aspect of these models, in particular, the actions associated with embedding structures within a technology during its development, and the actions associated with appropriating those structures during the use of technology.”

Rose and Jones [2005:19-37] commented as follows on the faithfulness of the structurational approach exhibited by these various structurational models of technology: “These contributions display varying degrees of faithfulness to Giddens’ ... duality of structure and agency... Adaptive Structuration Theory [DeSanctis and Poole 1994] postulates that structure is inscribed into technology. This happens during the process of construction, with the finished product later influencing the behaviour of its users: ‘designers incorporate....structures into technology.....once complete the technology presents an array of social structures.....technology structures...trigger organizational change’ [DeSanctis and Poole 1994]. This account (though reflecting a common understanding in the IS literature) is clearly incompatible with Giddens intentions, both because it locates structures inside technology, and because it then implies that the technology ‘does something’ (triggers change), *i.e.*, displays agency. Barley [1986] also considers technology structural, examining how roles and social networks mediate technology’s ‘structural effects.’ In Barley [1990] he further argues that ‘technically-driven social change is likely to be rooted in a technology’s material constraints’ (here structure (‘constraints’) and agency (‘driven’) are conflated), but that these must be transformed into social forces if technology is to have a significant effect on social organization. Orlikowski’s structurational model of the ‘duality of technology’ [Orlikowski, 1992] goes somewhat further in explicitly introducing material technology into the structure/agency duality, also suggesting that social rules may be ‘embedded’ in IS during their design, but insisting that they cannot be

programmatically read off by humans in a determinist manner (interpretive flexibility). The influence of technology on social processes, according to Orlikowski occurs through its appropriation by humans. Technology is also, however, 'the medium of human action', enabling some actions whilst constraining others, but conditioning, rather than determining, the performance of social practices. The form and function of a specific technology is thus seen to 'bear the imprint' of the social and historical conditions under which it is built and used and this may reinforce or transform the institutional properties of organizations. For example, it is argued that 'when users conform to the technology's embedded rules and resources they unwittingly sustain the institutional structures in which the technology is deployed' [Orlikowski 1992:411-412]. Unfortunately, as she herself acknowledges [Orlikowski 2000], this is 'problematic', because it 'ascribes a material existence to structures which Giddens explicitly denies'. "

In her later work, Orlikowski [2000] developed a structurational approach which Rose and Jones [ibid.] describe as an "...account most consistent with Giddens' intentions". This was achieved by extending the structurational perspective on technology to a "practice-oriented understanding of the recursive interaction between people, technologies, and social action" [Orlikowski 2000]. The notion of embodied structure was complemented with that of emergent structure, and the notion of user appropriation with that of enactment.

Orlikowski [2000] notes that the proposition that technologies embody social structures "situates structures within technological artefacts (which is) a departure from Giddens' [1984] view of structures as having only a virtual existence". Giddens explicitly denies the material existence of structures:

*... a position I want to avoid, in terms of which structure appears as something 'outside' or 'external' to human action. In my usage, structure is what gives form and shape to social life, but is not itself that form and shape – nor should 'give' be understood in an active sense here, because structure only exists in and through the activities of human agents. [Giddens, 1989:256]*

In Giddens' view, structures are understood to be the rules and resources instantiated in recurrent social practice. They do not exist external to human action, and are only "traces in the mind", as mentioned before. Inscribed properties of a technology, such as rules and procedures for calculation of property tax in an information system, are external to human action, and constitute, neither rules nor resources, and cannot be seen as structures. However, when these inscriptions are routinely mobilized in use, they can be seen to "structure" human action, and thereby become implicated as rules and resources in the constitution and reconstitution of a particular social practice – in this case, property rate administration.

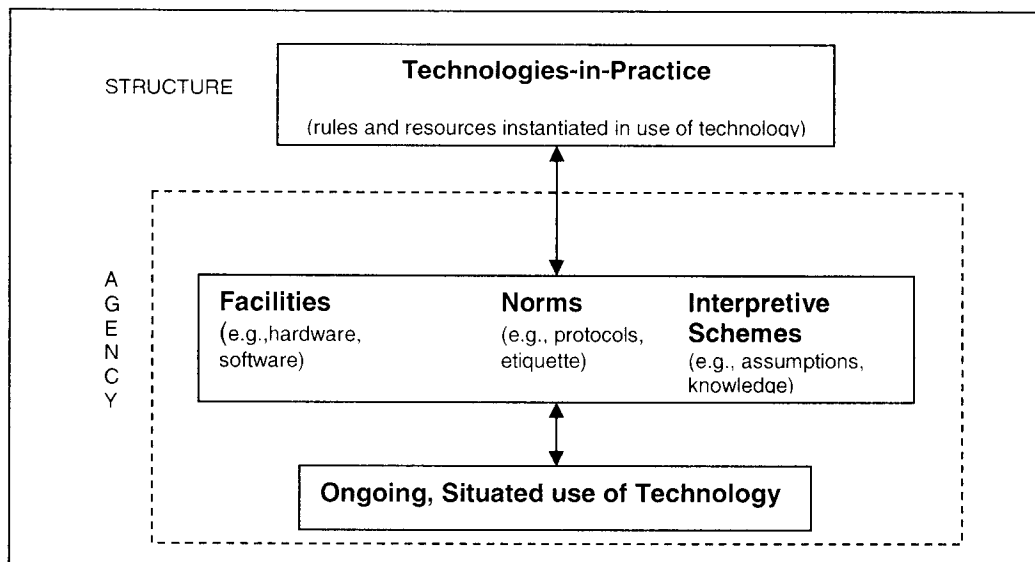
Inscriptions in an information system can therefore be seen to be, in the words of Orlikowski [2000], "at best, potential structuring elements" ... "until such time as these are actually used in some ongoing human action". Technology structures are emergent, and not embodied. They emerge only through the recurrent use of the technology by humans, who would use some or all of the material and other properties of the technology. "Through such repeated interaction, certain of the technology's properties become implicated in an ongoing process of structuration. The resulting recurrent social practice produces and reproduces a particular structure of technology use" [op.cit.]. This implies that the structure of technology use becomes stabilized and in effect institutionalized amongst the users interacting with the technology (or, here, the information system).

Such stabilization or institutionalization does not mean, however, that the structure of technology use cannot change. As noted before in section 3.2, structuration theory sees “the seed of change ...in every act which contributes towards the reproduction of any 'ordered' form of social life” [Giddens 1993:108]. Change, as it should be, is brought on by humans, and even firmly established structures of technology use, as an ‘ordered form of social life’, can be and will be changed by humans. The appropriation views of earlier structural approaches to technology “start with the structures presumed to be embedded within technology, and then analyze how those structures are used, misused, or not used by people in various contexts” [Orlikowski 2000] and do not fit into this “requirement” of structuration theory. Appropriation sees the embedded structures out there, “embodied in technologies simply waiting to be appropriated” [op.cit.], and while users may appropriate these differently from time to time, the embedded structure stay the same.

Focusing on the emergent rather than the embodied structures, Orlikowski [op.cit.: 407] complements the notion of appropriation with the concept of enactment, in the sense of “to constitute, actuate, perform”. “Thus, rather than starting with the technology and examining how actors appropriate its embodied structures, this view starts with human action and examines how it enacts emergent structures through recurrent interaction with the technology at hand” [op.cit.]. She continues [op.cit.]: “ ...while users can and do use technologies as they were designed, they also can and do circumvent inscribed ways of using the technologies – either ignoring certain properties of the technology, working around them, or inventing new ones that may go beyond or even contradict designers’ expectations and inscriptions.”

The two notions of emergent structures and enactment bring Orlikowski [2000] towards a practice-based extension to existing structural

models of technology. “This practice lens posits humans as constituting structures in their recurrent use of technology. Through their regularized engagement with a particular technology (and some or all of its inscribed properties) in particular ways in particular conditions, users repeatedly enact a set of rules and resources which structures their ongoing interactions with that technology. Users’ interaction with a technology is thus recursive – in their recurrent practices, users shape the technology structure that shapes their use. ... Technology structures are virtual, emerging from people’s repeated and situated interaction with particular technologies. These enacted structures of technology use, which I term *technologies-in-practice*, are the sets of rules and resources that are (re)constituted in people’s recurrent engagement with the technologies at hand” [Orlikowski 2000:407].



**Figure 3.1: Enactment of Technology-in-Practice**

(Source: Orlikowski [2000])

With this groundwork laid, Orlikowski presents a structural model based on Giddens’ model, as shown in Figure 3.1. To do justice to her succinct description of the structural model, it is repeated verbatim:

“When people use a technology, they draw on the properties comprising the technological artefact – those provided by its constituent materiality, those inscribed by the designers, and those added on by users through previous interactions (e.g., specific data content, customized features, or expanded software/hardware accessories). People also draw on their skills, power, knowledge, assumptions, and expectations about the technologies and its use, influenced typically by training, communication, and previous experiences. These include the meanings and attachments – emotional and intellectual – that users associate with particular technologies and their uses, shaped by their experiences with various technologies and their participation in a range of social and political communities. Users also draw on their knowledge and experiences with the institutional contexts in which they live and work, and the social and cultural conventions associated with participating in such contexts” [op.cit. :410].

Thus, people draw on the modalities of the technological artefacts (their material properties), their own knowledge and experience, their habits, power relations and organizational norms to enact a “specific set of rules and resources in practice that then serve as structure for future use as people continue to interact with the technology. Thus, over time, people constitute and reconstitute a structure of technology use, that is, they enact a distinctive technology-in-practice” [ibid.].

These technologies-in-practice, Orlikowski [ibid.] notes, “can be and are changed as actors experience changes in awareness, knowledge, power, motivations, time, circumstances, and the technology. ...People may change their technologies-in-practice by deliberately modifying the properties of their technology and thus how they interact with it. Even when a technology appears to have stabilised, with the discourse around its properties and functionality apparently having reached “closure” ... the

stability of the technology and its applications is only provisional. It is provisional because different elements continue to be developed, existing functions fail and are fixed, new materials are invented, new standards are set, and users modify the artefact and/or its content for new and different uses. Technologies are thus never fully stabilized or “complete”, even though we may choose to treat them as fixed, black boxes for a period of time.”

An important aspect of Orlikowski’s modified structurational model of technology is that through enactment, rather than appropriation, it is made clear that the actual use of a technology cannot be delimited by its designers. Designers and developers imbue a technology with a set of properties (inscriptions), and these technological properties, representing their intentions for the use of the technology, may be the basis for a “predicted” or typical range of activities commonly associated with the technology. “However, how these properties will actually be used in any instance is not inherent or predetermined; rather it depends on what people actually do with them in particular instances. ... Use of technology is not a choice among a closed set of possibilities, but a situated and recursive process of constitution, which – while it may often invoke intended activities or replicate familiar uses – may also and at any time ignore such conventional uses or invent new ones” [Orlikowski 2000:409].

With this background, we can get back to the intention of this section: how does the information system which “embodies” the reform agenda as inscription, become institutionalised, and how does it contribute to the institutionalisation of the network itself? We should add that we are focusing on an information system enrolled into an existing actor-network in order to support the institutionalisation of the network around the reform agenda, which had been set as the original OPP by the focal actor in its

problematization of the situation concerning reform led by legislation through the new Property Rates Act.

Actor-network theory, as we noted before, describes the institutionalisation of the network, when the network becomes a single collective, as a process of increased irreversibility, when translations between actor-networks are made durable, and assaults from competing translations are successfully resisted. Callon [1991:159] states that the degree of irreversibility depends on the extent to which it is subsequently impossible to go back to a point where that translation was only one amongst others and on the extent to which it shapes and determines subsequent translations.

In this research study, the enrolment of a supporting information system into an existing aligned actor-network introduces the information system as a new OPP, a process we will later, in Chapter 6, examine through the Due Process Model. It should be clear from the above discussion of Orlikowski's modified structurational model of technology, that the actors in the existing network (the users of the information system), would, through their recurrent interaction with the system, enact the emergent structures of the system. As has been explained, this structurational process would, over time, lead to a "stabilised-for-now" [Orlikowski 2000: 411] status of the system – a provisional institutionalisation that, while it could grow stronger, would always be open for change.

Since the information system is inscribed with the aligned interest of the network, namely, property rates reform, and functionality to support this, the institutionalisation of the system would lead to increased irreversibility, and therefore increased institutionalisation of the network as such. At the same time, constant "maintenance" would obviously be required, as changes in the environment, the technology, and the actors (some of

whom may desert, or forced to leave the network) bring new perspectives and challenges to the status quo.

### **3.7 SUMMARY**

The literature review outlined and discussed certain perspective relating to reform driven by legislation. In particular, it focused on how an information system can play a role in institutionalising a network of actors with aligned diverse interests.

Though the literature review did not focus on the legislation process and formulation in Parliament, it highlighted how Governments through parliament often act as initiators of Bills which leads to Acts of Parliament which, when implemented and accepted by citizens and institutions, become part of a network. Such networks, when they become institutionalised, would affect certain reforms in society. In some cases, such as considered in this research, the network would include an information system or systems which might be designed to support the intentions of the Act.

The literature review also focused on how information systems become the medium for institutionalising the negotiated and aligned diverse interests of actors in the social network. First, we argued that a reform agenda initiated as a “program of action” by a network initiator with the view to “enrol” and “mobilize” other actors into a network to subscribe to the agenda, could be inscribed as functionality in an information system. Second, as actors in the network recurrently interact with the system, they would enact the emergent structures of the system, and this, over time, leads to institutionalisation of the system. The institutionalisation of the system would lead to increased irreversibility of the network, and hence to its institutionalisation.

The literature reviewed in this Chapter and the underpinning theories discussed in Chapter 2 are used in the next Chapter and in Chapter 6. The next Chapter discusses the research methodology applied in the research work.

**CHAPTER 4: RESEARCH APPROACH**

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### 4.1 INTRODUCTION

In the previous Chapter, we provided a brief overview of the various concepts contributing to the main concept of legislation led reform. The Chapter also positioned the question of the role of an information system as an actor in reform driven by legislation. Hence, the Chapter was organised into sections which were based on critically reviewed and summarised analyses from information systems and related literature on the topics of reform, property rate/tax and reform, property rates reform in selected African countries, legislation and reform, and information systems and reform from ANT and ST perspectives.

In this Chapter, we discuss the research approach that was followed in the study. The research methodology of the study is also described further in terms of the research methods that were used. This Chapter also defines the scope and limitations of the research design and positions the research approach and methodology applied in this study by comparing it with existing research traditions in Information Systems. All research is based on some underlying assumptions about what constitutes valid research and the appropriate methods of conducting such research. The philosophical assumptions underpinning this research come from the interpretive school of thought which is explained in the next section. The implication of the assumptions is a subjective epistemology and the ontological belief that the investigated reality is socially constructed. The adopted research strategy is to conduct a single case study in one organisation namely the City of Cape Town and as such, the fieldwork was conducted in two parts:

- Firstly, during a period from January 2000 to December 2002, when the researcher was Head of Information Technology Projects in the employ of the City of Cape Town; and

- Secondly, on site from July 2004 to February 2005.

The Chapter is divided into four sections. Firstly, we examine the schools of thought in information systems research. This is to expose and direct our thoughts towards the philosophical assumptions made in this research. The second section describes the research strategy. The third section deals with the research design and the reasons for selecting the organisation, the unit of research analysis, data sources, and data collection. The fourth and final section presents a framework for the analysis of data to be undertaken in Chapter 6.

### 4.2 MAIN SCHOOLS OF THOUGHT IN IS RESEARCH

According to Guba and Lincoln [1994], the underlying assumptions in current information systems research approaches have been the answers to the mutually interdependent questions of:

- a) Ontology, which deals with the form and nature of reality and what can be known about it.
- b) Epistemology, which relates to what the “posture” of the researcher should be in acquiring knowledge; and
- c) Methodology, that is concerned with how the researcher should go about finding out whatever he believes can be known (*i.e.*, which methods are appropriate, given the researcher’s underlying philosophical assumptions).

The different schools of thought emerging out of the answers to these questions, particularly as they influence information systems research, are well debated in the information systems research literature [Lyytinen & Klein, 1985; Orlikowski & Baroudi, 1991; Galliers, 1991; Walsham, 1993; Myers, 1997] of which some are discussed in this Chapter. Depending on

the philosophical assumptions adopted, information system research can be classified as positivist, interpretive, or critical [Myers *et al.*, 1998]. According to Walsham [1995a], different research methods such as case study and action research can be positivist or interpretive or critical, though often this distinction is extremely contentious.

To tease out these distinctions, the section is divided into subsections. The first subsection addresses the positivist school of thought whilst the second subsection describes the critical social theory approach to information systems research. The third subsection outlines the interpretive approach in information systems research.

### **4.2.1 The positivist school of thought**

Within the positivist school of thought, the answer to the ontological question is that reality is given objectively and as such researchers are capable of discovering it and this can be replicated by others [Walsham, 1993; Myers, 1997]. Positivism deploys the “natural science model” (*i.e.*, formal propositions and testing of hypotheses) to conduct social science research [Lee, 1991], and maintains the epistemological position that objectivity and detachment on the part of the researcher (or observer) is the only valid way of studying reality.

The researchers maintain their objectivity via the natural science methodology (*i.e.*, formal propositions and testing of hypotheses), and by relying on the rules of formal logic and statistical inference to test theories, and draw conclusions in an independent and unbiased manner [Myers, 1997]. Due to its rooting in natural science research, positivist research typically isolates dependent and independent variables (quantitative or qualitative), and aims to predict the behaviour of the phenomenon under study [Dahlbom & Mathiassen, 1993; Ngwenyama & Lee, 1997].

Generally, positivists attempt to test theory, in an attempt to increase the predictive understanding of the phenomena. Information system research is therefore classified as positivist, provided there was evidence of formal propositions, quantifiable measures of variables, hypothesis testing and the drawing of inferences about a phenomenon from the sample to a stated population [Orlikowski & Baroudi, 1991:5].

### 4.2.2 The critical school of thought

The critical social theory school takes the ontological position that reality is historically constituted and incorporates various forms of social, cultural, political, ethnic and gender domination. The epistemological position is that the researcher and investigated object are interactively linked, and that knowledge of the social world is value laden [Ngwenyama, 1991; Guba and Lincoln, 1994]. In contrast to the positivist and interpretivist (see subsection below) schools, critical social theorists believe that truth is defined through a discourse [Lyytinen and Klein, 1985]. This presupposes that in critical research, the investigation is classified as emancipative if it focuses on helping to eliminate the causes of unwarranted alienation and domination resulting in the creation of opportunities for the realisation of human potential [Alvesson and Wilmott, 1992; Hirschheim and Klein, 1994].

### 4.2.3 The interpretive school of thought

Burrell and Morgan [1979:28] argue that:

*...the interpretive paradigm is informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience. It seeks explanation within the realm of individual consciousness and subjectivity, within*

*the frame of reference of the participant as opposed to the observer of action.*

The interpretive research approach is relatively new in information systems research. This claim is affirmed by Vessey *et al.* [2002:166] who observed that:

*“This type of research is new to many of us and it will take time to gain the experience necessary to produce high quality articles”.*

According to Vessey *et al.*, an interpretive approach has been used to “add greater richness to the interpretation of the information systems phenomena”. Burrell and Morgan [1979:31] argue that greater richness is added to the interpretation of phenomena because “interpretive philosophers and sociologists seek to understand the very basis and source of social reality. They often delve into the depths of human consciousness and subjectivity in their quest for the fundamental meanings which underlie social life”. Although the need to add greater richness to the interpretation of information system phenomena may be attractive, not every research renders itself to an interpretive research approach.

In interpretive research the understanding of social action must include the meaning that social actors give to their deeds (performance/actions). This is to say, social reality is constructed as a result of intentional actions [Burrell and Morgan, 1979]. Interpretive methods of research in information systems are therefore “aimed at producing an understanding of the context of an information system, and the process whereby an information system influences and is influenced by the context” [Walsham, 1993]. Examples of interpretive research in information systems include the work of Orlikowski [1991], Walsham [1993] and Myers [1994].

To improve the plausibility and cogency of this research and make its findings convincing to its target audience, a set of principles developed by Klein and Myers [1999:72] to improve the quality of interpretive research will be used. Aspects of these principles were applied to evaluate the interpretive field research during the collection and interpretation of the field material. The principles, which are outlined in section 4.5, are not applied mechanistically because the importance and relevance of each principle is partly derived from the manner in which the others are applied. In summary, the principles are:

**a) The hermeneutic circle**

This principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. This principle of human understanding is fundamental to all the other principles.

**b) Contextualisation**

It is used in instances where there is the need for critical reflection of the social and historical background of the research setting. The second principle is applied so that the intended audience can see how the current situation under investigation emerged.

**c) Interaction between the researcher and the subject**

One applies this principle where it requires critical reflection on how the research materials (or “data”) were socially constructed through the interaction between the researcher and participants.

**d) Abstraction and generalisation**

This principle requires relating the idiographic details revealed by the data interpretation through the application of principles (a) and (b) to

theoretical, general concepts that describe the nature of human understanding and social action.

### **e) Dialogical reasoning**

This principle is used in situations where there is the need for sensitivity towards possible contradictions between the theoretical preconceptions guiding the research design and actual findings (“the story which the data tells”) with subsequent cycles of revision.

### **f) Multiple interpretations**

This principle is applied where sensitivity to possible differences in interpretations among the participants is typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if they all tell it as they saw it.

### **g) Suspicion**

The last and seventh principle is applied when sensitivity to possible “biases” and systematic “distortions” in the narratives collected from the participants is required.

An interpretive case study approach is commonly adopted in interpretive information systems research [Klein and Myers, 1999]. In this research, such an approach was followed. This decision will be elucidated below, but first, the next section describes the case study as a research method.

## **4.3 THE GENERAL CASE STUDY APPROACH**

The intention of a case study research approach is generally to gain an “in-depth” understanding of the concerned phenomenon in a “real-life” setting. The phenomenon, already alluded to in Chapter 1, is the role of an information system in reform driven by legislation where the new

property rates Act 2004 of South Africa is used as an example. Real-life setting in this context is the capability and capacity challenges confronting the municipalities and local councils to rollout or implement the Act across the country. This places the focus on human interpretation and meaning, *i.e.*, on human behaviour and the reasons behind it.

Flyvbjerg [2006:223], in his analysis of case study research in the context of conventional and non-conventional views, using the role of Cases in Human Learning, had this to say:

*“For researchers, the closeness of the case study to real-life situations and its multiple wealth of details are important in two respects. First, it is important for the development of a nuanced view of reality, including the view that human behaviour cannot be meaningfully understood as simply the rule-governed acts found at the lowest levels of the learning process and in much theory. Second, cases are important for researchers’ own learning processes in developing the skills needed to do good research. If researchers wish to develop their own skills to a high level, then concrete, context-dependent experience is just as central for them as to professionals learning any other specific skills. ... Great distance to the object of study and lack of feedback easily lead to a stultified learning process, which in research can lead to ritual academic blind alleys, where the effect and usefulness of research becomes unclear and untested. As a research method, the case study can be an effective remedy against this tendency. ... Social science has not succeeded in producing general, context-independent theory and, thus, has in the final instance nothing else to offer than concrete, context-dependent knowledge. And the case study is especially well suited to produce this knowledge.”*

Burns [1990] lists six reasons for carrying out case studies<sup>11</sup>. Firstly, he claims that they are valuable as preliminaries to major investigations as they generate rich data that which may suggest themes for more intensive investigation. Secondly, he claims that since case studies 'have the aim of probing deeply and analysing intensively' [ibid.:366] the many phenomena which make up the activities of the unit under study, generalisations to a wider population may be possible. Thirdly, he indicates that case studies may generate anecdotal evidence which can illustrate general findings. Fourthly, case studies may serve to refute generalisations. Fifthly, a case study approach is preferred when pertinent behaviours cannot be manipulated. Finally, a case study may be the best possible description of a unique historical event.

Cavaye [1996] argues that case study research can be carried out taking a positivist or an interpretive stance, can take a deductive or an inductive approach, can use qualitative and quantitative methods, and can investigate one or multiple cases. Case study research can be highly structured, positivist, deductive investigation of multiple cases; it can also be an unstructured, interpretive, inductive investigation of one case; lastly, it can be anything in between these two extremes in almost any combination.

It has been suggested that the use of case studies in research is useful in newer, less well-developed research areas particularly where examination of the context and the dynamics of a situation are important [Darke *et al.*, 1998]. They argue that the case study research method is not particularly useful "where a phenomenon is well understood and mature, where constructs exist already and are well developed, where understandings of how and why the particular phenomenon occurs is not of interest, and

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<http://www.soc.ac.nz/learning/science/articles/a5.asp>

where understandings of the contexts of action and the experiences of individuals in a single setting is not relevant”.

However, this view of case study research does not take into consideration the various and different ways case study research can be conducted. The compelling point in case studies is to establish meanings rather than location. Although such a view denies the fact that whilst a particular research object or phenomenon may be well understood from within a particular ontological and theoretical perspective, having this knowledge should not deny the importance of alternative perspectives [Darke *et al.*, 1998].

Furthermore, the ideal characteristic of case studies is that they strive towards a holistic understanding of sets of interrelated activities engaged in by the actors in a social situation [Feagin, Orum, & Sjoberg, 1991]. Yin [1994] (who has a positivist approach to case studies) identified five components of design which are important for case studies. The first one is a study's questions which are mostly “how” and “why” questions and their definition is the first task of the researcher. The second component is propositions (if any) which are sometimes derived from the “how” and “why” questions that help to guide the studies towards the realisation of the stated goals.

Yin's third component is the unit(s) of analysis which defines what the case is. The case could be groups, a department of an organisation, or countries, but it is the primary unit of analysis. The unit of analysis is a critical factor in the case study. It is typically a system of action rather than an individual or group of individuals. Yin [op.cit.] argues that though the fourth and fifth components are respectively the logic linking the data to the propositions and the criteria for interpreting the findings, they are the least developed aspects in case studies. Therefore, selecting cases must

be done so as to maximise what can be learned in the period of time available for the study [Stake, 1995].

Case studies tend to be selective; focusing on one or two issues which are fundamental to understanding the system being examined. Though Yin comes from the positivist school of thought, some of his views such as the ones applied in this case study research cannot be ignored in the context of interpretive case study research. Yin [op.cit.] further indicates that a case study can either be a single or multiple-case design, where a multiple design must follow a replication rather than sampling logic.

When no other cases are available for replication, the researcher is limited to single-case designs; which is the case in this research study. Some of the criticisms against case studies relate to single-case studies. However, such criticisms are directed at the statistical and not the analytical generalisation which is the basis of case studies. Yin [op.cit.] pointed out that generalisation of results, from either single or multiple designs, is made to theory and not to populations. This view of Yin, *i.e.*, generalisation of results made to theory, is what is applied in this research study and is discussed in Chapter 6 of this thesis.

Cavaya [1996] points out that theory is both a way of seeing and a way of not seeing. A particular theoretical perspective can blind researchers to other perspectives at its moment of application. A more subtle criticism of theory is that we often take action without the conscious use of theory. In support of Cavaya's view, Walsham [1993:6] argues that:

*“we are conditioned by theories whether we like it or not, since we are exposed to a multiplicity of theories from our earliest childhood and we are undoubtedly influenced by them”*

In the view of Yin [op.cit.], single cases are used to confirm or challenge a theory, or to represent a unique or extreme case. Single-case studies are also ideal for revelatory cases where an observer may have access to a phenomenon that was previously inaccessible. Yin indicates that single-case designs such as the one used in this research thesis, requires careful investigation to avoid misrepresentation and to maximise the investigator's access to evidence.

Case studies can be holistic or embedded; the former occurs when the same case study involves only one unit of analysis. The case study approach is very useful in situations where contextual conditions of the events being studied are critical and where the researcher has no control over the events as they unfold. As a research strategy, a case study ought to include specific techniques for collecting and analysing data, guided by clearly stated theoretical assumptions. In the case of a single-case, such as in this research study, data should be collected from different sources in the single unit so that its integrity is ensured.

In the next section, the case study approach in information systems research is discussed.

#### **4.4 CASE STUDY APPROACH IN INFORMATION SYSTEMS RESEARCH**

The previous section dealt with case study as a research strategy and where, why and when it becomes necessary to apply it. The intention of this section is to discuss the applicability of case study research in information systems research. According to Myers [1997], there are four qualitative research traditions which are particularly significant in Information Systems research. These are case study research, ethnography, grounded theory and action research.

Orlikowski and Baroudi [1991] and Alavi and Carlson [1992] argue that case study research is the most commonly used qualitative approach in Information Systems. They suggest that as Information System research topics commonly involve the study of organisational systems, a case study approach is often quite appropriate. Scott and Ives [1992] reveal that the case study approach was the most common research strategy from 1970 to 1979 from a universe of 532 journal papers surveyed.

In a similar research study, Farhoomand [1992] shows how from 1977 to 1985 case study research was one of the most popular research methods: 25.4% from 636 papers surveyed from journals focused on or related to information systems. In many case studies the focus would be on the introduction of an innovation into an organisational environment. In this regard, Tatnall & Gilding [1999] remark:

*A common approach to researching innovation in Information Systems is to focus on the technical aspects of an innovation and to treat 'the social' as the context in which its development and adoption take place.*

This approach has been contested by the social determinist campaigners who hold the view that relatively stable social categories can be used to explain technical change [Law and Callon, 1988]. Law and Callon [ibid.] argue that by concentrating on the investigation of social interactions, technology can be relegated to context. Brey [1997] proposes that:

*Rather than relying on some 'inner technological logic', technological change is best understood by reference to technological controversies, disagreements and difficulties with which the actors involved in the change are concerned.*

Brey [op.cit.] argues for an approach using some form of social constructivism in which the researcher does not need to evaluate claims made by different groups about any 'real' properties of the technology being studied. He cautions, however, that if an approach like this is used, one cannot then invoke such properties to explain technological change. Instead, change must be explained by interpretations of the different groups involved in it after a series of controversies and negotiations.

The implication of Brey's [op.cit.] proposition is that, to study interactions between actors (human and non-human) where technology or an information system is considered a non-human actor, focusing on the properties of the technology or the information system is as important as the social environment within which the technology or the information system is deployed. Therefore, a research approach which brings meanings to the nature of the interactions is very relevant.

Case study research in information systems often takes the positivist perspective [Benbasat *et al.* 1987; Lee, 1989; Yin, 1994], but there is an increasing trend towards an interpretive stance [Walsham 1993; 1995]. Benbasat *et al.* [1987] indicate that the case study research method is particularly well-suited to information systems research, because the object of the information systems discipline is the study of information systems in organisations.

There are criticisms of interpretive case study research, specifically about its reliability and validity, but most of the criticisms focused on the extrapolation from an individual case study to social processes in general. Walsham [1993] very importantly argues that the validity of the extrapolation depends not on the typicality or representativeness of the case, but upon the cogency of the theoretical reasoning. Some of the main problems of case study research identified by Walker [1974] are the

degree of involvement of the researcher with the situations under study, confidentiality of the data, the possible political use of the data, issues of anonymity on publication and the need to clarify what is data and what is the researcher's interpretation of data.

According to Mitchell [1983], the validity of case studies, when correctly understood, depends on how they are used and the logic of their analysis. Altheide and Johnson [ibid.] argue that validity depends on the readers of the research and the goals of the research and may be quite different for different audiences. They also identify four general criteria of quality for interpretive research: plausibility, credibility, relevance and importance of the topic. If a report is plausible and credible then its findings will appear convincing and probable. Its readers will therefore find its findings acceptable and relevant, and its topic will appear to have considerable importance for their context.

Wainwright [1997]<sup>12</sup> argues that working to pre-conceived hypotheses is not in the nature of interpretive research in that interpretive research does not set out to test a pre-conceived hypothesis but develops an ongoing synthesis of observation and review of academic literature. In addition, Wainwright [op.cit.] indicates that when negotiated intervention sets the framework of the research directions, the data analysis, and evaluation design is necessarily emergent rather than preset. Given the philosophical assumptions of this research and the nature of the research questions to understand the interaction between actors to align diverse interests due to reform driven by legislation, it is believed that an interpretive case study approach is the appropriate research strategy for this topic.

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<sup>12</sup> <http://www.nova.edu/ssss/QR/QR3-2/wain.html>

The case study method was chosen because of the advantage of gaining an understanding of the phenomena through the meanings people assign to them, by studying the property valuation and rates (or taxation) policy reform framework of the City of Cape Town and the general valuation roll (GenVal) project of 2000. The next section addresses why an interpretive case study approach was chosen for this research project.

#### **4.5 SUITABILITY OF INTERPRETIVE CASE STUDY APPROACH TO THE CURRENT STUDY**

The underlying objective of using the interpretive research approach is to not only understand and interpret the social phenomenon, i.e., the role of an information system in legislation led reform, but also to have a deeper understanding of this complex social reality in the light of the inherent influences and constraints of technology (the information system). Those who advocate the interpretive approach, claim that social phenomena must be understood in the social contexts in which they are constructed and reproduced through their activities.

The epistemological stance of the interpretive research approach argues that access to the socially constructed reality is only through social constructions such as language, consciousness and shared meanings [Myers, 1997]. This means that social phenomena such as legislation led reform cannot be studied objectively because researchers (or observers) interact with human actors during inquiry and in the process the perceptions of both parties are altered. The ontological assumption is that the reality of such reform driven by legislation (or policy framework in the case of City of Cape Town) as embodiment of the aligned interests of actors is a social construction by human actors [Walsham, 1995] and that meanings assigned by human actors, and manifested behaviour of the

observed human actors form a crucial part of the study matter [Myers, 1997; Lee, 1991].

## **4.6 RESEARCH DESIGN**

### **4.6.1 The selection of the case study**

To reiterate, the purpose of this thesis is to create a better understanding of the process and interactions between actors in a social network that came into being as a result of legislation to drive reform. The study entails the analysis of how such a social network can be strengthened by the introduction of an information system as an actor into the network and how this could ensure stability across time and space. This thinking led to the adoption of an interpretive stance which seeks to uncover the truth by understanding the phenomena in their real-life context [Walsham 1995].

The research design makes use of a case study approach to describe a legislation led reform initiative, *i.e.*, the new Municipal Rates Act of 2004 otherwise known in this thesis as the new Property Rate Act (PRA) by the Government of South Africa to address inequity in the inherited apartheid municipal ordinances. The new PRA is to replace at least 138 pieces of legislation which include a range of national, provincial and homeland laws and ordinances as part of transformation in the new South Africa.

The selection of the case was based on two issues. Firstly, it is one of the many Acts introduced in South Africa to reform its apartheid past. Secondly, our interest is focused strongly on how the implementation of the Act across South Africa can be achieved and sustained with the support and use of an information system. The study benefited from the author's three and a half years of involvement in local government administration. The formal proposal evolved from a long conceptualisation

of ideas developed whilst the researcher was the Head of Information Technology Projects in the employ of the City of Cape Town. The researcher still communicates with staff that once worked with him on different information technology projects and has access to relevant documentation.

The new Act calls for mass valuation using the Improved Value Rating (*i.e.*, Total Value) methodology [Dunkley, 2002; Franzsen and McCluskey, 2000]. The Total Value methodology has the added advantage of ensuring that each property is valued according to a uniform set of standards thereby ensuring an equitable base for the calculation of property rates. Value forming attributes can be collected not only for the current state of the property at the date of valuation, but also for each sale record for the property as at the date of sale [Dunkley, 2002].

The new PRA makes provision for municipalities to provide statistics on sales of properties and consumption of electricity and water which enabled the City Administrators to determine the factors contributing to sales of properties and the kind of improvement in services required for the citizens of the City.

### **4.6.2 The unit of analysis**

The research study adopts a single-case design containing a single-unit of analysis. The City of Cape Town's General Valuation Roll 2000 (GenVal 2000) project was selected as a unit of analysis of the new PRA as an example of legislation led reform because it is expected that the analysis of the unit will provide the context for describing and analysing the case study of the City's property valuation and rates policy reform framework. The suitability of this project is demonstrated by the fact that it amalgamated seven different valuation rolls and property rating systems of

seven formerly autonomous municipal areas into a single valuation roll and property rating system for the new Cape Town Unicity.

The view is that there are lessons which have been learnt on the GenVal 2000 project at the City of Cape Town which can be applied to the rest of South Africa in implementing the new PRA. This is because the City of Cape Town is the only municipality in South Africa in the new democratic dispensation to reform its property valuation and rates policy to eliminate inequity in property valuation and rating. As already alluded to in section 4.3 above, the strength of the single-case approach is that it enables the capture of reality in greater detail. However, one does acknowledge the problems associated with generalisation from an individual case study as a weakness of this approach.

In this regard it is useful to reiterate what Walsham [1993] has said about generalization from a single case study. "The validity of an extrapolation from an individual case or cases depends not on the representativeness of such cases in the statistical sense, but on the plausibility and cogency of the logical reasoning used in describing the results from the case or cases, and in drawing conclusions from them." In view of this, data was obtained from similar municipalities in South Africa, namely, Buffalo City in East London and Gauteng Provincial Government in Gauteng (see Chapter 5, Section 5.2) and was related to their knowledge about the GenVal Project at City of Cape Town and the new property (municipal) rates Act 2004 of South Africa. This was to address factors specific to the GenVal 2000 project of the City of Cape Town as the unit of analysis which may affect the generalisation of results for the effective rollout of the new property (municipal) rates Act. In Chapter 6, subsection 6.4.4 the generalisation of the rollout of the new property (municipal) rates Act is discussed.

### **4.6.3 Data Sources and Collection**

Data collection was done through both primary and secondary sources. Primary data sources included discussions, interviews, meetings and observation. Secondary data sources employed were documentation and archival reports which provided an essential preparation for the interviews and other meetings. Secondary data helped to cross-check official information, to know about major events, technical details, historical decisions, policies and major organisational players and roles. They also shaped the analyses of certain responses received during the interviews. The sections below describe the sources of data.

#### **4.6.3.1 Documentation**

All written material concerning this project ranging from memoranda to formal reports were studied. These included all major documents such as the Executive Committee's Project approval report which called for the establishment and authorisation of the allocated budget for the project to be undertaken. Examples of such documentation range from the Project Initiation Document (PID) which identified the need for the project and funding requirement; the Project Definition Report (PDR) which detailed the work breakdown structure, resource allocation, project organisation/structure and implementation plan; Project Status Reports, Change Requests Reports, the Project Closure Report and Lessons Learnt Report which officially closed the project. All documentation pertaining to this project produced by the project team and relevant consultants were examined in detail.

### 4.6.3.2 *Archival Reports*

Archival reports such as the City of Kimberley Municipal Ordinances of 1913 which ensured adequate development in areas only occupied by 'white' South Africans and the Local Government: Municipal Systems Act, 2000 were studied. The four City of Kimberley municipal ordinances of 1913 do not provide for effective and equitable differentiation of rates and as such there were few material differences between the various provincial ordinances [Franzsen, 2000]. These material differences were such that a municipality can choose between at least two of the following three rating systems, namely:

- Site rating (*i.e.*, taxing only the unimproved value of land);
- Flat rating (*i.e.*, taxing the improved value of land); or
- Composite or differential rating (*i.e.*, taxing the unimproved value, and also the value of any improvements, but separately and at different tax rates).

These differences perpetuated inequity in property valuation and rating across the four provinces and ten black homelands before the municipal systems Act of 2000 was promulgated. The study of the Municipal Systems Act of 2000 was to deepen the researcher's knowledge in terms of the reasons for the amendment to the pre-2000 municipal systems Act. Selected reports of the City of Cape Town Executive Committee as well as the Council's minutes were also studied to provide further understanding of the Council's Executive Committee interpretation of related events as they were unfolding.

This preparatory work shaped the researcher's understanding of the content and structure of these ordinances and how they influenced the content and structure of the new PRA. These documents provided

background to the underlying reform driven by the court ruling of the Cape Town Magistrate Court which compelled the old City of Cape Town to address the inequity in its property valuation and rating legislation.

### **4.6.3.3 Observation**

In his official position as the former head of Information Technology projects in the Directorate of Information Technology Services at the old City of Cape Town the researcher observed most parts of the project. The researcher absorbed, and noted details and actions on the GenVal 2000 project and during the fieldwork. This observation was done over a period of two years (between January 2000 and November 2001) before the interviews were conducted in late 2004. The observation was done by attending project review meetings and being present when certain aspects of the work were undertaken, such as the setting up of the valuation parameters which were extracted from the rates policy reform framework.

The observation covered a period of approximately 22 months. It started in January 2000 with the preliminary planning work of project initiation through a tender and adjudication process, the selection of the valuation system and the customisation thereafter. It continued with data upload and partially ended with the publication of the Valuation Roll in November 2001. The official closure of the project came after the Valuation Appeal Board addressed the major objection issues during the first quarter of 2002. The actual observation and knowledge formulation for this dissertation commenced in July 2002 when the Ministry of Local Government was preparing the New Property (Municipal) Rates Bill.

**4.6.3.4      *Discussions, interviews and meetings***

Although a limited number of discussions, semi-structured interviews and meetings were conducted as part of this study between October 2004 and February 2005, they were all face-to-face data gathering interactions. These methods were used primarily to fill the gaps left by the other collection methods and to allow certain actors such as property owners and/or ratepayers in Cape Town, property rates and valuation administrators and valuers at the City of Cape Town the opportunity to express their understanding of the GenVal 2000 Project and how it relates to the new PRA (see Chapter 5, Section 5.2).

All interviews, discussions and informal meetings were recorded and transcribed in 'Word' format. Naturally, there were elements of subjectivity in the information gathering, but an attempt was made to present an account from various perspectives and levels within the Finance Cluster of the City of Cape Town as an organisation.

Because the object of the interpretive effort is one of attempting to make sense of the organisation as a text-analogue, hermeneutic analysis [Boland, 1991; Lee, 1994 and Myers, 1994] was applied to all written notes and the interview transcripts. The aim of the hermeneutic analysis was to make sense of the whole and the relationship between people, organisation, and the information system (see Chapter 5, Section 5.2) by analysing systematically the written notes and interview transcripts through iterative and repeated re-reading.

This made it possible to gain a deeper understanding of each interviewee's viewpoint and perspective, of links and contradictions within and across interviews, of complex and contextual factors emerging from

the interviews and of the many relationships between the relevant concepts.

All meetings were also documented to ensure consistency in the questions and area of focus. There are multitudes of different data collection techniques and these vary according to the extent of interaction (the 'distance') between the researcher and phenomena under scrutiny. The adopted primary source of data collection methods of observation, discussions, meetings and interviews provided face-to-face contact with the social actors in order to explore and probe responses.

Questions were clarified and refined during the process of gathering data. Those who participated in the interviews and meetings were given the opportunity to verify the transcripts and the initial results of the analysis. Due to the sensitivity of the case and the emotions many ratepayers and property owners attached to it, the researcher in the interviews and meetings had to listen for narratives about why things happened in the way they did or did not. It was therefore possible to collect multiple interpretations with all their contradictions, rather than finding the 'correct' interpretation [Yin, 1994].

In relation to the actual analyses of data, which is discussed in Chapter 6 of this thesis, the data was first transcribed based on the data collected via the different instruments, *e.g.*, interviews. This allowed the researcher the opportunity to gain insight into the context. Secondly, the analysis focused on similar and different patterns to property valuation projects and rates policy change. This enabled the researcher to develop a strong body of evidence from the GenVal 2000 project.

#### **4.7 FIELDWORK**

The fieldwork took place during October 2004 to February 2005. It was conducted in three operational areas of the City of Cape Town, namely: the Valuation Department, Accounts (and billing) Department and the Department of Information Technology. With the ratepayers association, the data gathering took place at the interviewee's office in Cape Town. Data was also gathered at the offices of the Association of Valuers in Cape Town and Johannesburg.

The councillors and members of the legislature were not considered as an operational area of the Municipality, but as citizens of the City. They were, however, interviewed in the Council chambers at the City of Cape Town. In addition to this, data was also gathered telephonically from Buffalo City of East London and the Gauteng Provincial Government Valuation Departments. These two cities are different *per se* to the City of Cape Town due to their historical past (white only cities) and current composition (inclusion of less developed black townships). The data collection from the two cities was necessary so as to have a view of the extent to which the cities' administrations were ready to implement the new property (municipal) rates Act. Seeff Properties in Rondebosch was interviewed as representative of the Association of property/estates agents in Cape Town.

All data gathered were by interviews. No group discussions took place and no questionnaires were used. However, formal and information conversation took place with two members of the ratepayers association at Grassy Park. All the interviews were pre-arranged and conducted with interview guidelines (see Appendix 1)

For each interviewee, the objective of the study was introduced and where clarification was needed, it was provided. In most cases, the subject matter was familiar which made the conversation easier. It was observed that, where the key expected results were made known at the beginning of the interview, discussions were very much focused. The interviews began by asking interviewees to introduce themselves and also to say how much knowledge they have on the GenVal 2000 project that was used to implement the rates policy reform framework and its relationship with the new PRA.

In general, the interviews provided an insight into the nature of the rates policy reform, particularly from the perspective of the Grassy Park incident, the process used to facilitate the rates policy change and the use of CAMA. In the case of the Gauteng Provincial Government and Buffalo City in East London, though the questions were the same as that used for City of Cape Town, the responses reflected the views of the ratepayers, Valuers and Revenue Officers on the new PRA, its implementation and the benefits thereof. They were also asked about their views on the rates policy reform framework implemented as GenVal 2000 project at City of Cape Town. Table 4.1 below is a summary of fieldwork in 2004 at the City of Cape Town, the Gauteng Provincial Government, and Buffalo City (East London) which describes the people interviewed in different categories:

	<b>Actor group and number of persons interviewed</b>						
	Valuers	Rate Payers	IT Dept.	Councillors	Rates Billing	Property Agents	<b>Total</b>
City of Cape Town	2	4	1	3	2	1	<b>13</b>
Gauteng Provincial Government	1	1	0	0	1	0	<b>3</b>
Buffalo City, East London	1	0	0	0	1	0	<b>2</b>
<b>Total</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>18</b>

**Table 4.1: Summary of fieldwork**

For the purpose of cross-checking, the interview transcripts when prepared were sent to the interviewees for their confirmation, rectification and suggestions regarding changes or improvements.

In general, the interviews were aimed at obtaining a description and awareness of the new PRA and the influence it has on the capacity of municipalities and ratepayers; and on the rates policy reform framework in relation to the GenVal 2000 project at the City of Cape Town. It also investigated the interactions between various stakeholders in designing and promulgating the new PRA as well as the rates policy reform framework at the City of Cape Town and how the GenVal 2000 Project was conceived and implemented.

To avoid technology influence in the direction of the role of the CAMA System in the GenVal 2000 project and how the new PRA should be implemented, the IT Department interview was restricted to the relationship manager responsible for the Finance Cluster whose role is to manage the IT expectation of the Cluster on behalf of the IT Department. The Finance Cluster brings together the Property Valuation, Accounts (Billing), Budget and Expenditure departments.

The researcher gave a formal, written and in some cases informal undertaking to preserve the anonymity of the interviewees and refer only to their titles and not their names. With the exception of one interview, all interviews were conducted without the use of a tape-recorder. All formal interviews were transcribed in Microsoft Word<sup>TM</sup> and these constituted the field materials documentation.

In the analysis and interpretation of the research results discussed in Chapter 6 of this thesis, each interviewee's responses are quoted and referenced in square brackets. When their comments are used in this

thesis, the following reference abbreviation format is used; initials of the professional or management position of which the interviewee occupies, the department name (where applicable), the interview number and the page in the filed materials on which the extract from the interview is located, *e.g.*, [Councillor Interview\_1, pp2] or [Director\_Valuation Valuation\_CCT Interview, pp2] or [Seeff Properties\_Interview, pp3]. All the interviews were conducted in English and the materials of the fieldwork are also in English.

Secondary material was used to develop background information on the social, political and economic context of the site which helped to reconstruct the history of the property valuation and rates policy reform initiatives. The interviews were conducted on appointment basis and as such, much time was not spent at the site apart from the agreed time to meet for the interviews. However, having worked in the environment before and being familiar with personalities and structures, I was fortunate to interact and discuss things informally with relevant staff, gather a considerable amount of information informally and to make general observations.

It must be noted that a steady correspondence has been maintained with certain participants and the researcher still has contact with staff that once worked with him on different information technology projects and has access to relevant documentation. The main data collection techniques used in this research study was semi-structured interviews (face-to-face and/or telephonic correspondence) and documentation analyses. A summary of the informal conversations and observations was maintained in a diary as a part of the field notes. Below is a table of summary of the data-gathering process in the case study.

<b>Location of the Study</b>	City of Cape Town and specific location and offices of certain interviewees in Cape Town
<b>Period of the study</b>	October 2004 to April 2005
<b>Data Source</b>	<i>Primary Sources:</i> <ul style="list-style-type: none"><li>• Individual interviews (18)</li><li>• Meetings (3)</li></ul> <i>Secondary Sources:</i> <ul style="list-style-type: none"><li>• City of Kimberley Municipal Ordinances of 1913</li><li>• Final report of the RFI for Valuation system</li><li>• Final report of the RFP for Valuation system</li><li>• Contract signed with SIGMA Technologies to deliver CAMA System</li><li>• The Municipal property rate Act of 2004</li><li>• The Municipal Systems Bill of 2000</li><li>• Local Government Property rate Bill of 2003</li><li>• Municipal Structures Amendment Act of 1998</li><li>• Local Government Annual Reports from 1999 to 2004</li><li>• Internal memos</li><li>• Relevant technical documents</li><li>• Unicity Commission Report (2000)</li></ul>

**Table 4.2: Summary of data-gathering process at study site**

The next section discusses an initial framework which embodies the conceptual approach towards addressing the research questions posed in Chapter 1 of this thesis. The remainder of the thesis attempts to answer these questions using a combination of theory and empirical evidence. The empirical study is shaped by the theoretical basis of the study, while the analysis and interpretation of the results of the empirical investigation contribute to answering the research questions.

**4.8 INITIAL FRAMEWORK: THE ANALYSIS OF THE FIELD RESULTS**

In Chapter 3 the role of an information system was discussed as a means to stabilise a social network not only through consistent interpretation and uniform application of the Act (legislation) across time and space, but through institutionalisation of the network of aligned diverse interests of actors [Akrich and Latour, 1992]. It was evident that the strength of 'patterns of reform' in relation to institutionalisation of the network is the strength of the inscription as functionality in an information system. It was also argued that the stability of the institutionalised social network is dependent on the extent of the irreversibility properties gained [Akrich, 1992; Akrich and Latour, 1992]. This section seeks to develop a framework for the analysis of the field results. In such analysis the research questions will play an important part. They are repeated below:

- How can new actors (human and non-human) and their interests be included in a complex heterogeneous network of actors with aligned diverse interests resulting from legislation?
- What is the role of an information system as an actor in consolidating the collective interests of actors in a social network resulting from reform driven by legislation?
- Which general guidelines are required to enable an information system to play a major role in implementing legislation led reform such as the new property (municipal) rates Act in South Africa?

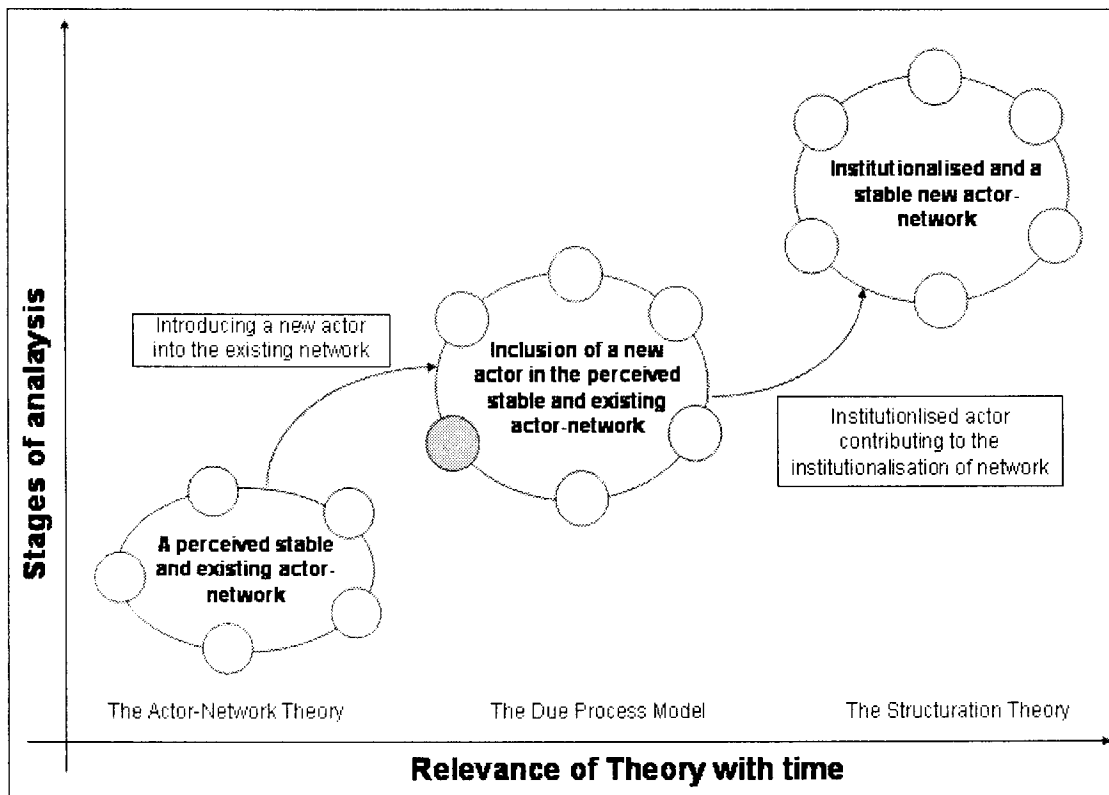
The diagram below (Figure 4.1) illustrates the initial framework of analysis. In Chapter 6, this framework will be reviewed and a general framework introduced. The first level examines the case study in the light of ANT in order to understand the existence of the network as a result of the legislation. ANT provides a complementary set of concepts which allow

for a richer understanding of the complexities associated with socio-technical phenomena which has a significant political component (such as most legislation led reform initiatives).

In the examination of the property rate policy reform initiative at the City of Cape Town (*i.e.*, case study), we found that a number of factors suggested by the ANT perspective such as good problematization strategy and inclusiveness of all stakeholders were critical for the stability of the property valuation and rating in Cape Town. The perspective also gives an insight into the development and promulgation of the new property rate Act 2004 of South Africa. The larger implication of this study is that, for socio-technical phenomena with a significant political component (such as most legislation led reform initiatives), ANT can provide a complementary set of concepts which allow for a richer understanding of complexities involved, and thereby help local government administrators and managers to make better diagnosis and interventions.

The second level of analysis interprets the process of inclusion of a new actor into the existing network of the case study by considering the social context in which the process took place, and is based on the due process model (DPM). Because the case study is a computer-based implementation of the policy reform framework, it introduces a new dimension and perplexity into the existing social network with factors as suggested by the DPM perspective. The DPM perspective provides an insight into the admission process of a new actor (*e.g.*, an information system) into an existing social network of actors with collective interests without undermining its stability. The perspective does not distinguish between humans and their artefacts, or between humans and their structures. Instead, they are viewed as actors. The DPM perspective enables us to examine the process of inclusion to understand the inclusion of a new interest into a single collective while retaining its stability.

The third and final level of analysis interprets the results in terms of the contributions made by the inclusion and use of an information system in the network to stabilise and eventually institutionalise the network. This level of analysis is theoretically guided by using Structuration Theory.



**Figure 4.1: Initial Framework for Analysis**

**4.9 SUMMARY**

This Chapter reviewed theoretical and philosophical assumptions underlying research methodology in the field of information systems. It also discussed the research design for this study. The major decisions made in order to conduct this research project were that the epistemological and ontological assumptions are interpretive in approach and that the research strategy will be based on a single case study.

Data collection techniques to be applied were observation, semi-structured interviews, individual discussion, documentation and analysis of archival reports. The City of Cape Town was selected as the organisation and the unit of analysis was the 2000 general valuation (GenVal) 2000 project. The focus area is the role of an information system in legislation (or policy change) led reform.

The interviews, discussions and meetings spanned the period from October 2004 to February 2005. The observations were from January 2000 to March 2002. The research adopted ANT, DPM and ST as theoretical frameworks to guide the analysis and interpretation of the collected data. DPM is used to analyze the inclusion of a new actor into the existing social network and ANT for the analysis of the formation of the existing network. ST is used to analyze the further institutionalisation of the network.

The next Chapter provides an outline of the case study and reintroduces the concept of legislation led reform (LLR) in the context of the case study. It gives a description of the new property rates Act (PRA) and how it was selected as an example of legislation led reform. The general valuation (GenVal) 2000 project of the City of Cape Town is described as the unit of analysis of the case study. We will look at how it was selected and its relationship with the new PRA.

**CHAPTER 5: INVESTIGATION INTO THE IMPLEMENTATION OF  
PROPERTY VALUATION AND RATES REFORM**

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### 5.1 INTRODUCTION

In this Chapter, the case study - the implementation of a property rates policy reform framework at the City of Cape Town - is discussed. The case study analyses the role of an information system in the implementation of the rates policy reform framework. The implementation was managed through a project termed GenVal 2000 Project, an abbreviation of General Valuation Roll 2000.

Having followed the property rates policy reform at the City of Cape Town (*see section 5.3 below*) the South African government decided to address the inequity in property valuation and rating across South Africa. In the view of the National Government, this inequity was caused by the Old Municipal Ordinances. This initiative of the National government gave rise to the new property (municipal) rates Bill and subsequently the 2004 Act. This Chapter also describes the major elements of the new property (municipal) rates Act (PRA) as an example of Legislation Led Reform (LLR) which was defined in Chapter 1 of this thesis.

The rest of the Chapter is therefore organised into four sections. The first section describes the GenVal 2000 project of the City of Cape Town as the case study and the second section, the fieldwork. This describes how the implementation of the property valuation and rates reform framework of the City of Cape Town became the GenVal 2000 project. The section also describes the role of an information system in the implementation of the reform framework. The third section describes the new PRA in the context of its origin (*i.e.*, the historical background), and how this piece of legislation was identified as an example of legislation led reform. The section also highlights the Act's provisions and the systems procedure. The fourth and final section sums up the Chapter.

## **5.2 THE GenVal 2000 PROJECT CASE STUDY**

The case study approach is based on the research methodology described in Chapter 4. This section is organised into three different subsections in order to adequately discuss the GenVal 2000 project. The first subsection gives the historical context of the property valuation and rates reform framework at City of Cape Town.

The second subsection describes the rates policy reform framework, its formulation and the agreement reached by all stakeholders to address the property valuation and rating inequity at the City of Cape Town. The third and final subsection describes the use of an information system to implement the new rates policy reform framework as the GenVal 2000 project.

### **5.2.1 Historical Context**

After the 1994 elections, a large number of ratepayers living in Grassy Park which was under the control of the then Cape Town City Council organised themselves into an association called the ratepayers association of Grassy Park. Grassy Park (circled in Figure 5.1 below) is a less developed area of a predominantly 'coloured' population who were moved from Wynberg and Plumstead during the apartheid dispensation. These areas were also under the jurisdiction of the then Cape Town City Council (see Figure 5.1).

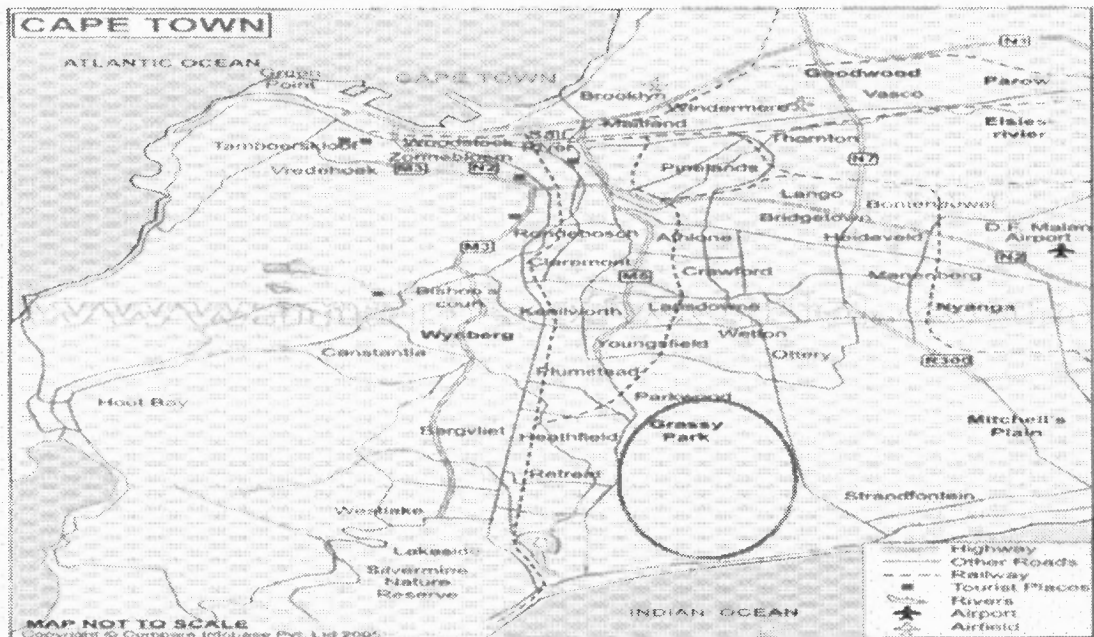


Figure 5.1: Grassy Park Suburb of Cape Town

The Grassy Park ratepayers association objected to the property valuation and rating system and refused to pay rates. Their outcry was about the inequity in the property valuation and rating policy and how their properties have been valued in relation to the developed and 'whites' only areas. They accused the Council of non-uniformity and inconsistency in the determination of rates such that in comparison, they pay more rates in the less developed areas than their counter-parts in the affluent and well-developed areas.

The Grassy Park Community attributed this inequity to the ordinances of the old dispensation and stated that they were ready to boycott rates until there is consistency and uniformity in the application of one property valuation and rating policy framework and system across the peninsula. The matter ended up in the Cape Town Magistrate Court. The court ruled in favour of the ratepayers and as a result, the Cape Town City Council had to reform its property valuation and rating policy framework.

While this was happening, the Government of South Africa through the National parliament was amending the Municipal Structures Act of 1998. This Act was to introduce new structures such as Unicity and integrate certain smaller Local Authorities into effective municipal administrations and District Councils to improve service delivery. The new Municipal Structures Amendment Act was finally promulgated in May 2000. The Act was then used to prepare South Africa for the December 2000 Municipal and Local Government elections.

In view of the new Act, the Cape Town Unicity Commission (UniCom) was formed to oversee the amalgamation of the seven existing municipalities and the Cape Metropolitan Council into the new Unicity (See table 4.3 below). One of the UniCom's tasks was to take advantage of the integration process to introduce a single new property valuation and rates policy framework and system across the new Unicity to address the inequity in the existing apartheid valuation and rating framework. In other words, the UniCom was to address the Cape Town Magistrate Court ruling on the Grassy Park episode.

As already indicated, the GenVal 2000 project is a computer-based project established to implement the new valuation and rates policy reform framework which is to be discussed in the next subsections. The UniCom found it an appropriate approach to have one property valuation and rates system (*i.e.*, technology, policies and standards) as a component in the integration strategy of the new City to integrate other smaller municipalities into the new Cape Town Unicity. It was assumed partly though, that a new property valuation and rates system will help determine the new Unicity's assets and revenue base for effective and efficient delivery of services.

Old Municipal administrations	South Peninsula, Blaauwberg, Cape Town, Oostenberg, Helderberg, Tygerberg, and Cape Metropolitan Council (which provided bulk services e.g. water, sewage, etc., to the seven municipalities)
Restructuring regional councils	17 Regional Councils to 7 Regional Councils
Population	4.1 Million
Annual population growth rate	4.3%
Average unemployment rate	20-27%
Median age of citizen	26 years
Housing backlog	245 000
Number of Property Valuation Systems	7 (to be transformed to 1)
Number of Billing Systems	8 (to be transformed to 1)

**Table 5.1: Overview of the New Cape Town Unicity<sup>13</sup>**

The new Unicity is referred to in this thesis as the City of Cape Town which was constituted after the December 2000 Municipal and Local government elections. Within the new City of Cape Town there were a number of different valuation rolls of different ‘ages’, types and accuracy or lack thereof [Dunkley, 2002]. Some areas had never been valued before. Although Cape Town and the South Peninsula had almost completed new valuation rolls in 1998 based on the Site Values methodology, these rolls were disregarded because of technicalities and the threat of legal action by a Rates Action Group on the part of wealthy property owners [Dunkley, 2002].

Before the elections in December 2000, a project committee (which reported to the UniCom) was set up to review the property valuation and rates policies of all the seven municipalities that were to be integrated into the new Cape Town Unicity. The committee was also mandated to implement one robust system which brings together all the properties

<sup>13</sup> Source: <http://www.sustainable.org.za/downloads/CTGHGpr.pdf>

(valued and unvalued commercial, residential and farm/agricultural) within the boundaries of the new Unicity. It was to publish the first integrated valuation roll in 2001 before the beginning of the first financial year of the new Unicity in July 2001 but this was not achieved until in November 2001.

The project was viewed by the newly elected councillors, as a way to integrate and stabilise the property valuation and rating in the city and to ensure its consistent interpretation and uniform application across the city. It was also intended to address the court rulings of the Grassy Park incident. There were a considerable number of new ideas on the method of rating. The next subsection describes the rates policy reform framework and the adopted process and interactions within the City of Cape Town and between the City of Cape Town and major stakeholders in arriving at the reform framework.

### **5.2.2 The Rates Policy Reform Framework in Cape Town**

This subsection describes the approach used by the City of Cape Town to reach out to the larger community and their stakeholders in addressing the Court Ruling on the Grassy Park incident and formulate one property valuation and rates policy for the new Unicity. A draft rates policy framework which addressed the inequity in the property valuation and rating in the City was widely published inviting discussion and participation from groups and individuals across the city.

This created a network of stakeholders to ensure their interests are taken into account. Though it is not the intention of this research to detail the politics and related issues, it is interesting to note that seven issues were set out, each with two or more options. Five days of open hearings were held by a Panel of Councillors, selected from all political parties. I was

fortunate to have sat in for three most important days of hearings. What was of particular interest was the divergence of opinions coming from different sections of the community. The new Rates Policy was approved by the Councillors and was to be implemented from 1<sup>st</sup> July 2001 with a new Valuation Roll. The Panel's report is summarised as follows [Dunkley, 2002]:

- A 30% rebate for residential properties. (Business properties can claim a cost against Income Tax)
- Giving all improved residential properties the first R50 000 of value free of rates. This means that properties valued at R50 000 or less will pay no rates and that everyone will benefit to some extent.
- Rates are based on improved or total value less R50 000 and then charged at 0.98% or R0.0098 in the Rand of rateable value. This value should be a fair comparison to the actual free market value.
- Refuse (Solid waste). There are two components:
  - a) Cents in the rand charge. Take the improved value less R50 000 and multiply by R0.00038. This is an annual amount, divided by 12 to give a monthly payment.
  - b) Every household will pay R38.60 per month for a wheelie bin. This amount is subsidised. If the property is worth less than R50 000 there is no charge, *i.e.*, 100% subsidy. If the property is worth more than R50 000 but less than R100 000 they pay half, *i.e.*, R19.30

- Sewage has two components:
  - a) There is a basic charge of R38 per property per month with rebates according to the value of the property. These are on a sliding scale from 100% below R50 000 to zero above R1.5M.
  - b) There is also a sewage charge based on the consumption of water. This is based on 70% of consumption up to 55 kilolitres.

The total of all these charges is then subject to Value Added Tax (VAT), presently at 14%. The valuation roll was, however, to be subject to appeal from individual property owners who feel that their properties have been overvalued.

The implementation of the approved Rates Policy Reform Framework raised the question of continuous stability and social order of the property valuation and rating network of stakeholders. It also raised the concern of how to ensure consistent interpretation and uniform application of the rating policy to eradicate the inequities. The next subsection describes how these concerns were addressed.

### **5.2.3 General Valuation Roll (GenVal) 2000 Project**

The previous subsection described the rates policy reform framework. Concerns such as continuous stability and social order in property valuation and rating and also consistent interpretation and uniform application of the provisions of the policy framework were raised by both internal departments and external organisations and institutions. The new rates policy reform framework of the City of Cape Town was anticipated to put huge pressure on the existing operational and revenue collection infrastructure of the municipality. Undoubtedly, there was a need to look for new ways to deal with the implementation challenges.

To address these concerns, the project committee (mentioned earlier) of information systems experts, Municipal property valuation and rating experts and councillors were asked to consider the use of an information system which will effectively and efficiently implement the new policy framework. A closed tender process was used as a consultation process to obtain and include an information system which could suitably automate the provisions and procedures of the rates policy reform framework.

Although there was the option of automation and non-automation, automation was considered to avoid the need for every valuation roll having to do physical inspection of every rateable property which was the case in the past and still the case in many municipalities in South Africa. An adjudication panel which was made up of representatives of the Ratepayers Association of Cape Town, the South Africa Property Owners Association, the City of Cape Town's Valuation Department, the City of Cape Town's Procurement Department, the City of Cape Town's IT Department, the Chairperson of the City's Finance Committee, and three councillors, representing the African National Congress (ANC), the Democratic Party and the National Party, respectively, was established to manage the consultation process. A three-staged tendering process was used:

- (i) Request for Information (RFI);
- (ii) Request for Proposal (RFP); and
- (iii) Adjudication of responses and appointment of supplier.

Eleven companies worldwide responded to the RFI on a property valuation and rating information system. Only three of the eleven - NOVALIS from USA/South Africa, STI Software Development from USA and SIGMA Technology Systems from USA - responded to the RFP. Although the evaluation criteria and the adjudication processes are

beyond the scope of this research, price, flexibility, interoperability and maintainability were used to select the SIGMA product - the Computer-Assisted Mass Appraisal (CAMA) system.

The CAMA system was then recommended. Several meetings were held to consult on the introduction of CAMA into the municipal administration of property valuation and rating and the extent to which it will be acceptable to all stakeholders. The latter is further discussed in Chapter 6. The new valuation and rating policy using the CAMA system to administer property valuation and rating at Cape Town Unicity is heavily biased in favour of the poor who, in any case, are very much in need of assistance.

Naturally, there was an outcry from some of the affluent suburbs particularly those which have been heavily subsidised by either an outdated valuation roll or in some cases no rates at all, *e.g.*, Camps Bay, Constantia, Bishops Court, Hout Bay; to mention a few. Dunkley [2002] indicates that as much as it is a great pity that rates will be based on total value, even where they may have been much higher on land than improvements (*i.e.*, site value rating), it may be a blessing in disguise. It could well be better for the rage to be against the new system of wealth distribution rather than against a change to site value rating [Dunkley 2002].

The new PRA which is discussed in the next section advocates Total Value methodology to property valuation and rating. This decision was influenced by the experience from the City of Cape Town's property valuation and rates policy reform framework. The next section describes the new PRA in South Africa and how it was influenced by the rates policy reform framework and the subsequent GenVal 2000 project at the City of Cape Town.

### 5.3 THE NEW PROPERTY RATES ACT OF SOUTH AFRICA

#### 5.3.1 Background

The previous section described the developments towards the valuation and rates policy reform framework at the City of Cape Town and its relationship with the GenVal 2000 project. This section describes the new PRA and how this piece of legislation relates to the property valuation and rates policy reform framework of the City of Cape Town.

The history is that during the apartheid dispensation, South Africa was divided into four different semi-autonomous provinces. Property valuation and rating were implemented differently in each of the four provinces. Each province had its own legislation or ordinances [Bell and Bowman, 2000]. Under these provincial ordinances, municipalities used different tax bases such as rating of land only or rating of land and buildings at the same rate or at different rates.

They also used different valuation methodologies such as market value (the price for which the property would likely sell in an arm's length transaction between a willing buyer and a willing seller) or the depreciated replacement cost of the building [Franzsen and McCluskey, 2000]. In some municipalities, the use of these provincial ordinances perpetuated inequities in the valuation and rating policy such that poor property owners often pay proportionally higher property rates than wealthier property owners [Dunkley, 2002].

The court ruling on the Grassy Park incident in Cape Town (*see Chapter 4 section 4.8 and section 5.2 above*) was seen as a precedent in South Africa which was likely to destabilise many municipalities in the old four provinces (excluding the homelands). The valuation of properties in some

municipalities had not been done for many years - in some cases more than 20 years [MPLG 2002]. To avoid wide-spread municipal rates boycotts in the old four provinces, the Government of South Africa through the Ministry of Provincial and Local Government initiated a political process to amend the ordinances of the old dispensation and saw it as appropriate to reform the property valuation and rating Act in the country [Franzsen, 2002]. This type of reform was identified as unique and defined in this thesis as “Legislation Led Reform” in Chapter 1.

The new property (municipal) rates Act (PRA) is to enable one property valuation and rating framework across South Africa to ensure consistency and uniformity in the valuation of properties, *i.e.*, commercial, residential, agricultural/farm properties and an equitable calculation of rates across South Africa. The Act is also to regulate the powers of municipalities to rate (tax) properties within their jurisdiction. The new PRA does not seek to introduce a new tax but rather to consolidate the current multitude of rating policies and systems as a result of the apartheid system of government before 1994 [Dunkley, 2002].

The new PRA replaces at least 138 pieces of legislation which include a range of national, provincial and homeland laws and ordinances as part of the transformation in the new South Africa. It introduces a uniform system of property valuation and rating and replaces at least 14 property valuation and rating systems (Ordinances) used across South Africa [Bell and Bowman, 2000; Dunkley, 1997]. The new PRA outlines a broad categories of properties which can be rated or taxed and details some of the criteria to be used. It stated that the minister of local government, together with the minister of finance, would be able to cap the rates municipalities levy and limit increases [Dunkley, 1997].

In addition, the new Act makes provision for the phasing-in of rates over a period of three to six years on properties which show an “extraordinary increase in value” and said that municipalities should also take into account the impoverished [MPLG, 2002]. The above challenges created new political processes and interactions between actors such as the Municipal administrators, Pressure groups, *e.g.*, Ratepayers and Property Developers and private organisations, *e.g.*, Commercial Banks, Professional Valuers, Estate Agents and the public and private organisations. Some of these challenges are discussed in Chapter 6.

### 5.3.2 The Act provisions

The general prelude to the Property Rates Bill, gazetted in the Government Gazette No. 24589 of 18 March 2003, regulates the power of a municipality to impose rates on property; amends the Local Government: Municipal Systems Act, 2000, so as to make further provision for the serving of documents by municipalities; amends or repeals certain legislation; and provides for matters connected therewith. A letter published on November 21, 2002 by the Minister of Provincial and Local Government, Mr. F S Mufamadi<sup>14</sup>, announcing to the Cabinet the approval of the property rates bill, stated:

*“The purpose of the Bill is to regulate the power of municipalities to rate (tax) property within their jurisdiction. The Bill does not seek to introduce a new tax but rather to consolidate the current multitude of rating systems. The Bill replaces at least 138 pieces of legislation, and this includes a range of national, provincial and homeland laws and ordinances.*”

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<sup>14</sup> [www.dplg.gov.za](http://www.dplg.gov.za)

*Property rates are distinct from user service charges or tariffs. The money raised through property rates is used to fund the general operations and services of the municipality, including infrastructure maintenance, street lighting, storm drainage facilities; parks, and recreational facilities.*

*On the other hand, user service charges are used to recover operating costs of services and their payment is tied to benefits linked directly to consumption of these services. The December 2000 local government elections witnessed the birth of a new system of local government which created wall-to-wall municipalities. For the first time in the history of South Africa, we now have municipalities covering the entire country.*

*This means that areas that were outside the jurisdiction of local government (such as the former homelands] are now within new municipal boundaries. Properties in these areas are now part of the municipal property tax net. The revenues that municipalities generate from the entire demarcated area will enable them to build and develop these localities, by undertaking local economic development initiatives, providing infrastructure and thereby creating jobs and contributing to a sustainable system of local government.”*

The Bill was signed into Law as an Act of Parliament of South Africa on May 11, 2004. In summary, the provisions made in the new Act included:

- Exclusion from property rating of the first R15 000 in value of each residential property (the Minister for Provincial and Local Government, in consultation with the Minister of Finance, may increase this limit to reflect inflation);

- Exclusion from property rating of all land reform beneficiaries for the first 10 years after they receive title to property (as long as they do not dispose of the property during this period);
- A mandatory three-year phase-in period for newly rateable properties in order to smooth the tax burden;
- The determination of the tax base as the improved value (land plus buildings) of the property as measured by its market value;
- Adoption and annual review of a "rates policy" by each municipal council in consultation with the local community. This policy must take into account the effect of rates on the poor, and include measures to alleviate any burden that property rates might otherwise impose on poor people;
- A uniform objection and appeal process throughout the country for valuations;
- Revaluation of properties by municipalities once every four years.

In summary, the new Act compels Municipalities and Local Councils to:

- Expand the property tax system to cover the rural and urban areas within new municipal entities through the preparation of new valuation rolls for newly established municipal areas;
- Develop the key property attribute data on which valuation rolls can be prepared;
- Introduce a property rating policy framework that will inter alia justify the level of property rates charges in terms of access to municipal services;
- Equalise the property tax rates between different previous valuation roll areas and set a property rates framework which differentiate between various categories of properties; and
- Develop billing systems so as to render property tax accounts to land and property owners.

### 5.3.3 Systems Procedures

The previous section outlined the provisions and the significant features of the Act. This section isolates the critical systems procedures in the Act and discusses how the Government of South Africa perceives the outcome of the implementation of the Act.

#### 5.3.3.1 *Rateable Properties*

Inability of the Municipalities and District Councils to administer property valuation rolls adequately was identified as a major contributor to their inability to collect the necessary revenue to improve service delivery. Property valuation and rating have been used across the globe by municipalities and local councils to mobilize revenue for local development and the new PRA seeks to do the same. The Act is to ensure all categories of properties are listed on the valuation rolls and a consistent assessment method across the country is adopted to avoid under-assessment and to be monitored much more efficiently than was done in the past.

Each Municipality or Local Authority must have a fiscal cadastre or system of recording and valuing property such that the factors used in assessing properties are clearly established on the property records and are regularly updated to reflect increases in the number of taxable parcels. The ideal fiscal cadastre format must have detailed maps with individual boundaries and codes.

The Act emphasises that all properties are to be identified by title and where property rates are newly instituted the affected city or town must be divided into zones, identifying parcels and owners as well as property characteristics. This ensures that South Africa will always have regular

street patterns, named streets, and numbered houses and that rates collection becomes easier.

**5.3.3.2 Rates Liability**

To identify the person liable for the rates, the property rates or rating administration has to ensure that the title registry is well organised to serve as a good index of property rates payers. This obviously calls for automation whereby this becomes a required functionality of a supportive (IT) system. The Act seeks to avoid a situation where the tenant (if not the owner) and not the property owner becomes liable. This will ensure that the rates bills go to the rightful owners even though they may be absentee owners of the properties.

**5.3.3.3 Valuation Process**

The Act seeks to eliminate the inelastic nature of the property rates base; thus property values do not increase automatically with inflation, increased population, or even improved economic activities. The Act forces municipalities, local authorities and accredited Valuers to be responsible for measuring and valuing those various increases and then adjusting the fiscal cadastre to reflect underlying increases in property values.

It also forces them to have adequate procedures and conduct a consistent identification of changes which increase the physical size of the rates base. Changes such as new buildings or improvements to existing ones will have to be captured together with the rising cost of land and building values that affect properties. Economic indicators such as inflation, increasing population, urbanisation and other economic activities must also be included. South Africa currently has at least ten million properties for about thirteen hundred and sixty four (1364) certified and accredited

Valuers to value. This calls for an automated mass appraisal system, which the Act approves of.

This will avoid a situation where an increasing proportion of new construction goes unrecorded on the fiscal cadastre. It will enable general revaluations to be undertaken in an orderly manner to eliminate the possibility of stagnation of the property rates base when South Africa is confronted with rapid growth in the physical size or value of properties. Though the Act does not prescribe a particular system, it approves of a system that reflects market values and in particular for residential buildings, the consideration of a building's location, size, number of rooms, or structural condition together with construction materials used. It will also include the number of stories to a building to avoid the use of rental value as a criterion of value.

#### **5.3.3.4 Rates Collection**

To avoid some property owners paying property rates and others not, a system which ensures that the fiscal cadastre does not fail is required and to provide relevant information for rates collection which, when contested in court of law, will stand.

### **5.4 SUMMARY**

This Chapter described the case study which illustrates the experience of the use of an Information system to implement the property rates policy reform framework at the City of Cape Town. The design of the reform was planned beforehand and its implementation process had the support of many internal departments, organisations and institutions in Cape Town. Below is a summary of the case study:

<b>Case Study</b>	
<i>Type of study</i>	Organisational
<i>Object of study</i>	Information System in public sector reform
<i>Initiation of the initiative</i>	Inside the Organisation
<i>Reform approach</i>	Planned based on an incident
<i>Support – internal and external</i>	Finance Services Directorate and IT Services Department of City of Cape Town, Property Agents, Valuers, Ratepayers Associations, Councillors,

**Table 5.2: Summary of the Case Study**

In context, the case study became the “heads-up” for the South African government which prompted the thinking and the introduction of the new PRA to amend the whole and/or certain sections of the Laws of the former provinces of:

- The Cape of Good Hope
- Natal
- The Orange Free State
- The Transvaal

Other Laws such as the Rating of State Property Act, 1984 (Act No. 79 of 1984), the Local Authorities Affairs Amendment Act, 1991 (Act No. 127 of 1991: sections 6 and 7), to mention a few, were also amended to reflect the experiences of the case study. That is, the new Property (or Municipal) Rates Act of 2004 was based on the outcome of the case study described above.

The next Chapter discusses the analysis and interpretation of the collected data regarding the role of an information system in legislation led

reform implementation. Here, the data collected is used to analyse and interpret the process of legislation led reform.

**CHAPTER 6: ANALYSIS AND INTERPRETATION OF THE CASE STUDY**

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### 6.1 INTRODUCTION

The previous Chapters have set the scene for the analysis and interpretation of the collected data and in particular, Chapter 4, which established the research approach adopted by the researcher in the study. In Chapter 4, we discussed the scope and limitations of the research design and positioned the research approach and methodology adopted in relation to existing research traditions in information systems. It was also established in Chapter 4 that the adopted research approach would guide the observation of the case and the data gathering process.

In Chapter 5, we outlined the new property (municipal) rates Act as an example of legislation led reform, the case study as the City of Cape Town and the General Valuation (GenVal) 2000 project of the City of Cape Town as the unit of analysis. It was established in Chapter 3 that most legislation driven property valuation and rates reform have similar characteristics in Africa and is about improving revenue collection either for the Central Government or the local governments/authorities for the purpose of improving service delivery to communities. It was also argued that the provisions and systems procedures of legislation lend themselves to automation and that most reforms driven by legislation are initiated through government and its agencies.

This Chapter therefore seeks to analyse and interpret the field results and to consolidate the elements of the analysis derived with ideas from the following theories:

- The 'Moments of Translation' concept of Actor-Network Theory described in Chapter 1. We chose to use ANT as part of our conceptual framework to examine the creation and maintenance of networks of associations amongst human and non-human elements,

which, in the case of the legislation led reform (at first view), include people, organisations, software, computer and communications hardware and technical infrastructure because an ANT informed study will attend to both the social and the technical dimensions of this reform.

In this analysis, ANT is used as a lens to understand and interpret the process and interactions between actors which led to the Property Valuation and Rates Policy reform framework at the City of Cape Town and the formation of the network. In terms of the formulation of the new property (municipal) rates Bill and its subsequent promulgation to become legislation, ANT is used as a lens to understand and interpret the process and interactions between the actors and the creation of the network.

- The Due Process Model, described in Chapter 2. The DPM is used as a tool to analyse and interpret the process of inclusion of a new actor in the network. As described in Chapter 2 and elaborated in Chapter 3, this focuses on the extent to which the interest of the new candidate is aligned to the existing collective and how the included actor contributed, if any, to the stability of the new collective.
- Structuration Theory, described in Chapter 2. ST is used as a lens to understand and interpret the continued stability and eventual institutionalisation of the network.

The first section analyses and interprets the case study from the perspective of ANT by drawing on the concept of the four 'moments of translation'. The analysis focuses on the formation and growth of the network of aligned interests, *i.e.*, the 'actor-network' created as the result of the new rates policy. The analysis starts from the premise that a stable

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actor-network was in existence due to the old apartheid municipal ordinances but had to accept new interests brought in as a result of the City needing to address the inequity in the property valuation and rating system of the City of Cape Town. We argue that the inequity was addressed through a new rates policy framework. The second section analyses and interprets using, respectively, the concepts of DPM and ST, the inclusion of an information system as an actor in the network and discusses the information system's ability to further stabilise the network and contribute towards its institutionalisation. The third and final section reviews the initial framework for the analysis of the field results discussed in Chapter 3 with the view to draw initial conclusions towards a general framework to implement legislation led reform and the role of an information system as a prelude to the seventh and final Chapter of the thesis.

### **6.2 ESTABLISHING A NETWORK OF ALIGNED INTERESTS**

The creation of a network of aligned interests, also referred to as the 'sociology of translation' is described by Callon [1986] as a process which consist of the stages of problematization, intersement, enrolment and mobilization. "By translation we understand all the negotiations, intrigues, calculations, acts of persuasion and violence thanks to which an actor or force takes, or causes to be conferred to itself, authority to speak or act on behalf of another actor or force." [Callon and Latour, 1981]. Translation is also the circular process of 'interpretation' or as Callon [1991] puts it, the 'definition' that every actor makes of other actors in the actor-network.

#### **6.2.1 Problematization**

As discussed in Chapter 2, problematization is the first stage in the translation process during which a focal actor defines identities and

interests of other actors which are consistent with its own interests, and establishes itself as an obligatory passage point (OPP), thus “rendering itself indispensable” [Callon, 1986:204]. Broadly speaking, the OPP refers to a situation or process which has to occur in order for all the actors to satisfy their interests attributed to them by the focal actor. This implies that problem resolution can only be negotiated through the OPP. By identifying the actors or agencies, we establish who they are and what they are doing.

Latour [1987] describes the process as ‘following them’ in their daily interactions between the focal actor and other actors in their attempts to enrol them. The initiators or the focal actors of the GenVal 2000 project (or the information system-based property valuation and rating policy reform) at the City of Cape Town (CCT) are the Valuation and the Billing Departments of the Finance Services Cluster through the Executive Council (ExCo) of CCT [Dunkley, 2002]. The key actors in the GenVal 2000 project consist of five main organisational groups: The Initiators, The Department of IT Services of City of Cape Town, Ratepayers Association, Association of Valuers, and Association of Real Estate Agents. The non-human actors included the valuation and rate data, the Internet, organisational procedures, other policies and by-laws of the City of Cape Town and expectations of the citizens of Cape Town.

### **6.2.1.1      *Role and interests of Actors***

#### The Valuation Department

It is responsible for the collection and administration of property data within the municipal boundaries. One of their tasks is to ensure that the property data in their possession reflects the current description of each and every property – residential, commercial, agricultural and farmland – in legal boundaries of the city. They have the responsibility for the rate calculation based on the rate policy and the administration around its

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management and implementation. The Department also has the responsibility to determine the value of properties in the boundaries of the City of Cape Town.

### The Billing Department

It is responsible for issues around billing and collecting rates – property and municipal services, *e.g.*, sewage, rubbish collection, etc. – from ratepayers within the boundaries of the City of Cape Town. In addition, it works with the Building Plans and Approval and Valuation Departments to ensure rates invoices to ratepayers have the right information and rate amount to pay. The department serves as the interface between the City of Cape Town and ratepayers.

### The Department of IT Services

Its responsibility is to deal with issues concerning IT strategic and operational competency and capacity to deliver IT/IS support to the City of Cape Town Administration. The IT department was involved in the tendering, selection and implementation process of the valuation and rating system which meets the requirements of the new rate policy.

### Ratepayers Association

It is responsible for representing the interests of property owners, tenants and property developers who, by the rate policy and related by-laws of the City, are to pay rates to the City of Cape Town for the municipal services rendered by the City of Cape Town.

### The Association of Valuers

The Association represents all certified Valuers in South Africa and had a keen interest in the rate policy reform of the City of Cape Town, this being the methodology to be applied to generate the required information needed as input into the billing and invoicing system.

### The Association of Real Estate Agents

It is responsible for issues pertaining to agents involved in property development and selling of properties. It also caters, to a limited extent, for the interests of the Deeds Office and Attorneys & Conveyancers since their charges can inflate the total cost of the properties sold by real estate agents.

Given the role and responsibilities outlined above, it is appropriate to analyse how the reform initiative was problematized. And to do that it is necessary to refresh our minds on how the problem was first identified. To summarise what has been alluded to in Chapters 2, 4, and 5 and why the initiative was necessary, is to indicate that it was due to the court ruling from the Cape Magistrate Court in 1998 which compelled the City of Cape Town to address the inequity in the rate policy of the City.

The ruling also demanded the introduction of one property valuation and rating policy framework and system across the peninsula. The Grassy Park Community (a 'coloured' township) who took the City to court attributed this inequity to the ordinances of the old political dispensation and indicated that they were ready to boycott rates. They accused the City of non-uniformity and inconsistency in the determination of rates such that in comparison, they pay more rates in the less developed areas than their counter-parts in the affluent and well-developed areas.

The initiators of the GenVal 2000 project problematized the initiation of the rate policy reform by indicating that the rate policy was discriminatory and segregatory. It was argued that to avoid any form of rates boycott in Cape Town which has the potential to undermine the financial viability of managing the City, the court ruling to address the valuation and rates inequity (see Chapter 5) needed to be implemented without delay.

They further argued that it was in the interest of the City to use the reform initiative to integrate the property valuation and rating systems of the seven municipalities which were to come together to form the new Cape Town Unicity. In their view, the integration could be used to determine the revenue base of the new Unicity of Cape Town. In addition, it was the responsibility of the City Administration to ensure continuous and improved service delivery to all communities in Cape Town and to improve revenue collection.

Although data was not gathered to substantiate any form of opposition to the policy reform framework embarked by the City's administrators, it is a known fact that certain rich and influential individual property owners did oppose the rate policy reform. It is also known (but cannot be substantiated) that these individuals petitioned the City Manager and the Executive Committee of the City Council not to implement the rate reform and rather appeal against the court ruling. It is believed that they used their Ward Councillors to vote against the reform in council. This scenario is an indication that not all Capetonians were in favour of the reform, but again, this cannot be substantiated as the research had no data to do so. Perhaps in a future research study, the opposing views can be investigated.

### **6.2.1.2      *The Obligatory Passage Point***

Any mandatory, standardised action is called an obligatory passage point (OPP) in ANT [Latour 1988:43]. Actants who or that are enrolled in a network are persuaded to move through this OPP and thus contribute to the routinisation and durability of the network. Therefore, the OPP helps in negotiating the alignment of diverse interests of actors. The GenVal 2000 project is a computer-based implementation of the rate policy reform. In this case, the rates policy reform of the City of Cape Town or the GenVal 2000 project has become an OPP for the various actors as it was

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the only means through which to address the inequity in the property valuation and rating system. The OPP was also a means to ensure consistent interpretation and uniform application of one property valuation and rating system across the Cape Peninsula. The following analysis demonstrates how the GenVal 2000 Project was an OPP for the different actors:

### The Valuation Department

If efficiency is defined as doing things right, then the department will achieve greater efficiency in property data collection and the subsequent valuation of the property. This would help the City of Cape Town in achieving its objective of effective (*i.e.*, doing the right thing) property valuation and rating. The director of valuation described the objective as:

*“Uniformity as defined in terms of the principles of the reformed policy is to support equity and standardization.”*

*[Valuation Director\_CCT\_interview, pp 2]*

*“One of the objectives of the new rate policy which is different from the old one is the valuation and rating of individual sectional title units, in that there is also one rate policy for all Capetownians.”*

*[Valuation Director\_CCT\_interview, pp 2]*

### The Accounts (and Billing) Department

The Billing Department would achieve effectiveness through correct billing of rates to ratepayers which then brings trust and credibility to the City administrators as well as confidence in the billing information. This was supported by the Chief Accountant interviewed:

*“It allows one to raise objection on a property if either it is omitted or has an erroneous value.”*

*[Chief Accountant\_CCT\_Billing\_Interview, pp 2]*

*“The public is becoming more interested in how their property values are arrived at.”*

*[Chief Accountant\_CCT\_Billing\_Interview, pp 2]*

### Ratepayers Association

The association would achieve recognition and acceptability as representative of all ratepayers in Cape Town and will be consulted on all matters of public interests that affect ratepayers in particular. One of the ratepayers interviewed acknowledged that:

*“Improved communication and consultation with ratepayers will remove difficulties in implementing and collecting rates in the city. Ratepayers will have a better understanding of the objective embedded in the new rate policy.”*

*[Ratepayers\_Assoc\_Interview 1, pp 2]*

### The Department of IT Services

Through the GenVal 2000 project, the IT department would achieve improvement of its IT infrastructure support for Municipal activities and provide easy public access to rates information, on-line. The relationship manager from the IT Department for the Finance Cluster indicated in the interviews:

*“We saw the GenVal 2000 project compelling DITS to improve its infrastructure e.g., internet access to provide better support for the valuation system and resolving the difficulty of ratepayers’ access to rates information.”*

*[Relationship Manager\_IT\_Finance\_Interview, pp 3]*

### The Association of Valuers

Through the GenVal 2000 project, the Association together with the Institute of Valuers would achieve a common platform with which to engage the Valuation Department and for that matter the City Administration on issues of property valuation. The City's Valuation Systems Manager indicated in the interview that:

*“Because there is one rate policy across the Cape Peninsula, organisations such as South Africa Property Owners Association (SAPOA) and Institute of Valuers now have a common ground for discussion. Furthermore, the project is a solution to producing a proper valuation roll in time and with less cost against the backdrop of rising shortage of qualified Valuers nationwide.”*

*[Systems Manager\_Valuation\_Interview, pp3]*

### The Association of Real Estate Agents

Through the GenVal 2000 project, the Association would have the baseline from which to negotiate sale of properties. A ratepayer who is also an owner of a Real Estate Agency franchise – Seeff Properties, Rondebosch in Cape Town – indicated during the interviews that:

*“The GenVal 2000 provides access to recorded accurate valuation and rates collection data year on year to enable buyers or sellers of properties to make the right decisions and take the right actions when selling or buying properties in the City.”*

*[Seeff Properties Manager\_Rondebosch\_ Interview, pp 2]*

### **6.2.2 Interessement**

The interessement of the actors was fundamental to the success of the policy reform and the implementation of GenVal 2000 project. Firstly, the

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actors contributed experiential information concerning current trends of property valuation and how to ensure equity in rating. Secondly, they are the beneficiaries of an excellent reformed rates policy that takes into consideration the rich, the poor and the pensioners and embraces efficient rates collection. The assumption purported by the initiators was that, if the actors would agree to participate in the submissions to a Panel of Councillors appointed by the legislature of the City Council to debate on the provisions (listed Chapter 5 Section 5.2.2) of the rates policy, then the initiators would have obtained their buy-in. The interviews revealed the following:

*“During the negotiations, we made sure that people will not be forced to sell and move to an area because of rates affordability.”*  
[Councillor\_Interview 1, pp 2-3]

*“We ensured that certain exemptions are made for pensioners and those who cannot afford to pay the new rates if they can prove it.”*  
[Councillor\_Interview 2, pp 2]

*“Without our participation, there was no way they could implement the provisions.”* [Councillor\_Interview 3, pp 3]

These statements from various human actors are indications that they accepted the roles defined for them by the initiators and that their interests have been catered for and confirmed through their participation in submissions and debate of the new provisions of the rates policy. It made the reformed rates policy the necessary condition to prevail for all actors in the network to align their interests to that of the initiator in an attempt to address the identified and defined problem alluded to in the previous section.

### 6.2.3 Enrolment

*Enrolment* is a set of strategies in which initiators seek to convince other actors to join them in a multilateral political process. According to Callon, enrolment:

*...designates the device by which a set of interrelated roles is defined and attributed to actors who accept them.*  
[Callon1986:211].

Therefore, the acceptance and participation of the 'interessement' process by the actors prepared the grounds for enrolment. Central to a successful interessement is motivation for enrolling actors. In the case of the GenVal 2000 Project and CAMA deployment, motivation was the manner with which the inclusive processes were used and the nature of interactions adopted to co-opt each actor in the pursuit of other actors and their collective objectives for creating a heterogeneous network [Callon 1985, Latour 1987, Latour 1997], thus, building interest.

The "interest building" was possible because the political process and interactions were such that the initiators were compelled to make public the draft provisions of the new rates policy framework. This led to the submissions by the actors, leading to a debate where the actors negotiated opposing views, aligned and accepted roles defined for and with them by the initiators in a multilateral process [Callon, 1991]. It took the form of extensive multilateral negotiations (both partisan and non-partisan), trials of strength (between all the interested actors) and tricks from the initiators with their indispensable position to ensure the achievement of the "building of interest".

The process also incorporated the past inequities in property valuation and rating and the right to decent living and services by all Capetonians to re-evaluate their interests as “ideological controls” (which occur by influencing actors' current evaluations of reality and instilling notions of more desirable states and how to reach them) [Brunsson 1985; Czarniawska-Joerges 1988]. These ‘ideological controls’ served as a motivation and were central to influencing and enrolling other actors. For instance, the motivation that an information system will enforce uniform valuation and rating across all communities in Cape Town, resulted in enrolling the CAMA (*i.e.*, Computer Assisted Mass Appraisal) system provided by Sigma Technology Systems in the USA, as a non-human actor to help implement the new valuation and rates framework.

The other motivation for the CAMA system was the fact that its interest was in line with the existing collective interests or the “built interests”, *i.e.*, efficient implementation of the valuation and rates policy framework to eliminate inequity in rating. This instilled the notions of a more desirable state of stability in the property valuation and rating business in Cape Town. It was highlighted in the responses from the interview with the Director of the Valuation Department:

*“The principles of the GenVal 2000 project do not empower any individual or group of individuals to dominate the property valuation and rating industry but rather the ‘market value’ of the properties. However, accurate valuation data from the CAMA system will reduce the influence of ‘market value’ and powers of the property-selling agents and developers. Also, CAMA makes continuous municipal valuation roll possible and easy. Furthermore, the public participation made it possible for various representatives to be part of such a historic event of reforming the City’s rates policy.”*

*[Valuation Director\_CCT\_Interview, pp 3]*

The process embarked upon by the City Administrators generated enthusiasm among the Cape Town public such that the actors accepted accountability and responsibility as defined during negotiation of roles and their meaning. This was confirmed during the interview with the ratepayers association:

*“The new rates policy serves as a guide to prevent different practices by different actors after the implementation. Public education and awareness is needed to counter check and eliminate the possibility of any individual or group of individuals’ misapplying and misinterpreting the provisions of the new rates policy. Property registers, objections, appeals and concessions were but few accountabilities and responsibilities which make the new rates policy different from the old one.”*

*[Ratepayers\_Assoc\_Interview 2, pp 2-3]*

One important expectation of Capetonians from the new rates policy framework and the implementation of it through the GenVal 2000 project was that there would be clear visibility of how properties (residential and non-residential) are valued and how the rates are determined across the peninsula. An interviewee from the ratepayers association mentioned:

*“Someone living in a R500 000 mansion in Gugulethu will pay rates accordingly.”* (Note: Gugulethu is one of the less developed areas and “black” townships in Cape Town).

*[Ratepayers\_Assoc\_Interview 3, pp 3]*

*“The benefit of the new framework and access to property valuation and rating information is a fairness and consistent view of how other ratepayers are billed and the corresponding services they get.”*

*[Ratepayers\_Assoc\_Interview 4, pp 3]*

*“The new framework protects and manages the expectations of ratepayers by clearly described account statements, stating the purpose for which the rate is. In that way property owners and/or tenants know what services to expect from the municipality.”*

*[Ratepayers\_Assoc\_Interview 2, pp 2]*

*“As a ratepayer, my role in the new framework is to pay a levy that is deemed to be of a rateable property. What is different though from the old framework is differential rates.”*

*[Ratepayers\_Assoc\_Interview 3, pp 2]*

### **6.2.4 Mobilization**

The final process in the translation of actors' interests is mobilization. *Mobilization* is a set of methods that initiators use to ensure that allied spokespersons represent their constituents properly and do not betray the initiators' interests. At this stage, translation is complete, actors' interests are stabilized, and controversy is removed. Mobilized actors are committed to a common course of action. In this case, there was considerable evidence (already presented) that actors were mobilized to fulfil the interests articulated in the initiators' reform agenda or interest.

A strong assertion in the concept of Moment of Translation and the differentiating factors in the process and interactions of actors towards the alignment of their diverse interests are the acceptance and recognition of representatives as legitimate spokespersons to continue to protect (and champion) their interests. In the case of GenVal 2000 project, the reform is motivated purely by politics but stability and social order was the underlying motivation for the reform.

At this stage, the network of actors was created and the OPP had been agreed to and was fixed. Therefore, the acceptance of the interest of the initiators by the public representatives such as the ratepayers association and the department of Information Technology Services of the City of Cape Town made the formulation of the new rates policy framework easier. One of the Valuers interviewed responded by saying:

*“Ratepayers on the whole are given an opportunity to give input in the way rates are levied. The process did establish recognizable forums such as the ratepayers association and rates action groups to engage continuously the City of Cape Town concerning our current and future interests for the benefit of the industry and the continuous stability and order of the valuation industry. Also because of the community and public participation, the public has become interested in how their property values are arrived at.”*  
*[Valuers Assoc\_ Interview 1, pp 3]*

The new rates policy reform framework could therefore be considered stable because all the identified actors were enrolled and mobilised in a network of aligned interests. Furthermore, the City’s legislature approved the new framework and the City’s Executive Committee allocated the necessary resources for its implementation.

### **6.2.5 Summary**

In summary, the analysis and interpretation of the case study from the perspective of ANT established certain key themes. These are firstly, the ability of the initiators to define the problem and render themselves indispensable to garner the interests of other stakeholders (actors) into a collective objective. Secondly, the process followed by the created network or “built interests” to enrol CAMA as an actor into the perceived

stable network had the capability to influence the continued stability of the network. Finally, how the various forums became legitimate representatives of actors to engage continuously with the initiators for the protection of their interests. These themes will be taken into consideration in refining the initial framework for the analysis of field results to present a general framework of information system support for legislation led reform.

In the next section, the stability and institutionalisation of the created network is discussed by building on the above analysis of the case study using ANT.

### 6.3 THE STABILITY OF THE NETWORK

The previous section analysed and interpreted the formation of a network of actors created as a result of the design and implementation (*i.e.*, the GenVal 2000 project) of a new rates policy framework at the City of Cape Town. Various roles, identities and interests of actors in the network were defined by the initiators of the network. It was also established in the previous section that the acceptance by the actors of what the initiators have defined for them and negotiated with them led to the establishment of a network of aligned interests.

- During the enrolment translation process, CAMA was enrolled as a non-human actor into the existing, relatively stable network with the view to implement the new policy framework at the City of Cape Town. The question that needs to be answered at this stage is: "How can the stability of the social network of actors with aligned interests be maintained with the inclusion of such a new actor?" This is addressed in the next subsection.

### 6.3.1 The Inclusion of a new Interest and a new OPP

The DPM advocates that new actors to a relatively stable network in most cases do not bring certainty along with them but rather further degrees of perplexity (see Figure 2.4 of Chapter 2) [McMaster *et al.* 1999:347]. This new candidate for inclusion introduces another layer of uncertainty which requires consultations/debate to clarify its legitimacy of candidacy by the others after which the candidate's position, *i.e.*, its relative importance in the hierarchy of things must be established. Only then, the candidate becomes accepted through institutionalisation. McMaster *et al.* indicate that at this point the candidate could be rejected and excluded altogether and if not, facts begin to bring certainty into the heterogeneous network of associations, *i.e.*, after they have been imbued with values through consultation and hierarchy. The stability of the network of allies depends on the inclusion and exclusion of the interest of actors. This was confirmed during the interviews by the valuation Systems Manager:

*"The implementation of the new rates policy reform framework will put a huge pressure on the existing operational and revenue collection infrastructure of the municipality and as such, we need to look for new ways to deal with implementation challenges."*

*[Systems Manager\_Valuation\_Interview, pp 3]*

The new candidate for inclusion in the network was an information system. McMaster *et al.* [ibid.] discuss the decision to include a new candidate in an existing and relatively stable network based on technology (*i.e.*, technical decision) as deployed in an information system and/or organisational (*i.e.*, social decision) as in new controls or reporting systems and procedures. In the case of an information system as the candidate for inclusion, whatever decision one makes, will involve trade-

offs between own developed systems and commercial off-the-shelf packages.

Such was the case in the GenVal 2000 project, where a formal tender process was followed (described below) to decide on an appropriate information system. Any information system considered for inclusion would have to give effect to the provisions of the new rates policy framework of the City of Cape Town as inscribed programs of actions in the form of functionality. It is clear that the enrolment of a new actor of this kind into the network introduces uncertainty and perplexity, using the DPM terminology.

If this perplexity is not properly attended to and the due process is circumvented, as described in Chapter 2, by making a jump from perplexity to institutionalisation [*ibid.*], the risk of destabilising the network would increase, leading to a situation where the network becomes unstable and likely to disintegrate. Given what has been said, the two processes which are crucial in the DPM are consultation which proposes the solution and hierarchy which then validates the solution to ensure continued alignment of actors' interests. These are discussed next.

### Consultation

During the *consultation* stage the debate among the actors is about the legitimacy of the candidacy of the new interest. It [*ibid.*] is the process through which the suitability of the candidate for inclusion in the network is assessed. From the perspective of the case study and for that matter the interviews conducted and the discussions which took place, a tender process was used as a consultation process to obtain and include an information system which would be suitable to automate the provisions of the rates policy framework.

The Director of Valuation at the City of Cape Town indicated in the interviews that:

*“Though there was an option for automation and non-automation, considering the use of CAMA is to avoid the physical inspection of every rateable property which was the case in the past and still the case in many municipalities in South Africa.”*

*[Valuation Director\_CCT\_interview, pp 3]*

From the interviews conducted, it emerged that a three-staged process was used:

- (i) Request for Information (RFI);
- (ii) Request for Proposal (RFP); and
- (iii) Adjudication of responses and appointment of supplier.

The RFI enabled the panel to debate on what type of candidates are available in the market. The RFP assisted the panel to address the question ‘how can we live together?’ in the network and ensure continued stability of the network. The Director of Valuation had this to say:

*“Eleven companies world wide responded to the RFI on property valuation and rating information system. Only three of the eleven - NOVALIS from USA/South Africa, STI Software Development from USA and SIGMA Technology Systems from USA - responded to the RFP.”*

*[Valuation Director\_CCT\_interview, pp 3]*

The acquisition of the CAMA system from SIGMA Technology Systems required that formal tender procedures were followed which necessitated a detailed consultation process, addressing the interests of all actors. Almost five years after implementation of the CAMA system, a member of

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the adjudication panel had this to say during the interview to confirm the excellent consultative work of the panel:

*“CAMA enabled the City of Cape Town to address the property valuation and rating inequities in the former systems, improved valuation methodology, capability and capacity and the responsibility for valuation quality control.”*

*[IT Manager-Parliament\_ Interview, pp 3]*

The interpretation of the above interview responses is that the CAMA system and the associated proposed actions were accepted by the existing actors. This then allowed the panel to move to the next stage (*Hierarchy*) of assessing the value the new candidate (the CAMA System) brings to the network. This meant that the City of Cape Town had to make changes to certain processes and procedures in the Property Valuation Department and the Billing Department.

The next subsection analyses and interprets the *Hierarchy* stage.

### *Hierarchy*

The second important aspect of DPM is the hierarchy stage which is the process of understanding how the new actor will be positioned within the network such that it will be acceptable to the current configuration of people and things. It is therefore necessary to ensure that when a new candidate is being considered for inclusion in an existing network, the value it brings, but also the extent to which the network stability is strengthened in terms of procedures, skills of people, standards, etc., will be considered. From the perspective of the case study, the interviews and discussions conducted, the following was revealed by the Valuation Systems Manager:

*“CAMA did provide the structure to assess rateable properties more efficiently. Its ability to use GIS capability to link plots or parcels to permanent structures made property valuation administration very handy.”*

*[Systems Manager\_Valuation\_Interview, pp 3]*

*“Experience in Cape Town has shown that Computer assisted Valuation can achieve the desired results not only cheaper than conventional valuation, but also significantly reduces cost with subsequent valuations.”*

*[Systems Manager\_Valuation\_Interview, pp 3]*

The interpretation of the above interview responses is that the new candidate was accepted by the existing network in terms of the value that it would add to the network. We submit that through its inclusion in the network, the provisions of the new rates policy framework, inscribed in CAMA, represents a new OPP.

The above two crucial stages of DPM makes the process symmetrical [McMaster *et al.* 1999:353], *i.e.*, moving from *consultation* (stage 2) to *hierarchy* (stage 3) and not asymmetrical, *i.e.*, moving from *consultation* (stage 2) to *institutionalisation* (stage 4). This “one collective approach suggests that the technical decisions and social decisions are not different in kind and that a symmetrical approach needs to be taken” [ibid.] to ensure that the four stages of DPM are adhered to. According to McMaster *et al.*, a technical decision could refer to program maintainability versus performance and social decisions, job satisfaction versus intensification and routinisation of work. This was the case at the City of Cape Town in the context of the case study and was confirmed during the interviews and discussions with the Chief Accountant (Billing):

*“The lack of appropriate systems, existing administrative problems resulting in revenue underperformance and in-house capacity problems required a turn-key solution to ensure that the revenue is managed more effectively and that management has a much wider in scope of the tax net that is anticipated. The introduction of CAMA into the valuation and rating procedures at the Council was the right thing we have done.”*

*[Chief Account CCT\_Billing\_Interview, pp 3]*

*“The Accuracy and preparation of valuation data is of critical importance. The production of the valuation rolls for the municipality is only a small part of the revenue system. CAMA has created an integrated approach – systems and procedures – that had helped the City’s management to put their fingers on the ‘pie’. Any other approach other than CAMA at the City would have been a disaster.”*

*[Chief Account CCT\_Billing\_Interview, pp 3]*

The above comments suggest that any two asymmetry stages of DPM – *i.e.*, asymmetry in either direction of *perplexity* (stage 1) to *hierarchy* (stage 3) or *consultation* (stage 2) to *institutionalization* (stage 4) would have led to distortion and increased the likelihood of failure *i.e.*, it would have destabilised the network.

Thus far, our narrative has focused on the use of DPM as an analytical tool for understanding the processes of including a new actor in an existing and relatively stable network. The above interview responses are also an indication that the network has been stable since the introduction of the CAMA system and this was due to the adherence to the due process (*i.e.*, *perplexity*, *consultation*, and *hierarchy*) that ensured that the network’s stability was maintained.

The next subsection analyses and interprets how the inclusion of an information system in the network helped to achieve institutionalisation.

### 6.3.2 The role of the CAMA System: Network Stabilisation

The role of CAMA as an information system is a combination of inclusion in an existing network of actors and how it was used in the network to ensure further stability over time. This section seeks to analyse and interpret the use of CAMA as an information system in the network and how it did stabilise it. The analysis is based on “inscription” from the perspective of ANT where an information system is a medium of inscription. This concept was introduced in chapters 2 and 3 and described by Callon as follows:

*“...Inscription as a medium or material of “embodied texts” of interests that become the support in the creation of unified needs into one and same solution whereby when the solution is in use, the context of the specific work tasks and situations of the users are translated.”*

*[Callon, 1991:143]*

By inscribing the provisions of the new rates policy framework as programs of actions in the form of functionality of CAMA, CAMA's position in the network was further endorsed as an actor imposing its inscribed “program of action” on the other actors in the network. The inscription of the “program of action” or the provisions and procedures of the rates policy framework can be strong/inflexible or weak/flexible. The strength of the inscription as functionalities into CAMA was dependent on whether the actors will follow or avoid the network. From all indications, it had not been avoided and this was confirmed in the interviews with one of the valuation officers at Cape Town Unicity:

*“CAMA prevented wrong interpretation and miscommunication of the provisions of the rates policy framework that could have undermined the good intentions of the new policy.”*

*[Valuation Officer\_Interview, pp 3]*

Analysing Callon’s [1991] description of “inscription” in relation to the new rates policy framework shows that the policy framework with the embedded collective interests of actors was the unifying medium of the network. The CAMA system’s role in the network was a supporting one and for that matter, for specific tasks and situations as “programs of action”. Thus, the inscribed "program of action" in CAMA (as a supporting information system) is actually used in the daily administration of property valuation and rating at the City of Cape Town. Responses from the interview sessions such as indicated in the quotes below were given to the question, “What do you perceive to be the role of the CAMA system in the implementation of the new rates policy framework?”

*“CAMA influenced any form of practices or behaviour after the implementation of the policy framework because access to information via the Internet provided support to interpret and communicate relevant information.”*

*[Valuation Director\_CCT\_VD\_interview, pp 3]*

*“CAMA influenced any form of practices or behaviour after the implementation of the policy because rating policy and the valuation roll are all expected to be published on a municipality’s web site.”*

*[Valuation Officer\_Interview, pp 3]*

*“CAMA influenced positively the conduct of Valuers in the Valuation Department after the implementation of the rates policy because the support provided by CAMA helped them to work better due to*

*their small numbers. CAMA have to be used to produce proper property valuation and the publishing of valuation roll thereof.”*

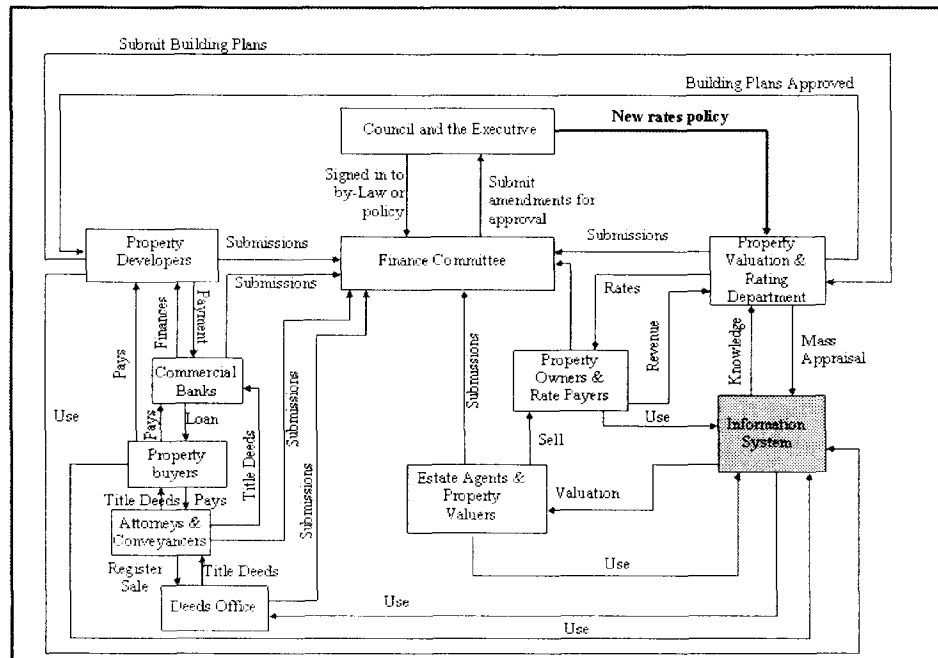
*[Valuer Assoc\_ Interview, pp 3]*

*“CAMA influenced practices or behaviour after the implementation of the rates policy framework because it provided web/internet access which facilitated an understanding of the demographic makeup of property owners in the municipal area.”*

*[Chief Accountant\_CCT\_Billing\_ Interview, pp 3]*

Arguably, stability in the property valuation and rating (*i.e.*, in the network) was achieved through stabilisation of the CAMA system. The actions by actors as they interact with the system and in the network, guided by the system, ensured consistent communication across time. It could therefore be argued that actions taken by actors in these interactions are intended for the growth and stability of the network.

Furthermore, drawing from the work of Orlikowski [1991] and Applegate [1994], one can infer that an information system plays a crucial role in enabling and amplifying the dominating trends of a reform agenda. Thus, the relationship between an information system and reform is one which is underpinned by effective communication through the inscribed “program of action” (which emerged from the reform agenda) as functionalities of the system.



**Figure 6.1: The role of CAMA as a supporting Information System**

By imposing its inscribed "program of action" on other actors in the social network, the information system itself became "frozen" [Bowker and Star 1994:187] such that the inscribed "programs of actions" from the new rates policy became irreversible making the network stable. This means that the information system becomes "black-boxed," *i.e.*, no longer controversial [Holmström and Robey 2000].

The CAMA system (shaded in Fig 6.1) with its functionalities leveraging on the provisions of the rates policy framework is seen as the link between the actors. As already alluded to in this Chapter, the provisions of the new rates policy framework inscribed in the CAMA system is seen as a new obligatory passage point (OPP). The OPP provides the means whereby stability and social order could continuously be negotiated to align actors' interests. That is, with an information system as an enabler (to properly go through the OPP), each new actor ought to re-engineer its processes

and procedures to ensure passage through the OPP either for compliance and/or uniformity. The use of the CAMA system and processes around it had become stable and routine (*i.e.*, following the patterns of reform), such that it is less likely to be challenged in future, thereby stabilising the network. It presupposes that the “inscription” into the CAMA system was strong and inflexible.

The inscribed collective interests in a medium such as the CAMA system led to strong stabilisation which enhanced the network's stability. Hence, the reform agenda inscribed into the CAMA system gained the properties of irreversibility *i.e.*, the degree to which it is subsequently impossible to return to a point where alternative possibilities exist [Walsham, 1997]. The CAMA system has peculiar characteristics, which to some extent influenced the way it was customised and used. As a type of an information infrastructure, it is a systemic technology (a characteristic alluded to by Monteiro and Hanseth [1995]), which regulates communicative behaviour, roles and status of standards. This implies that with the CAMA system, it is absolutely essential that all actors in the network adhere to a standard and communicate according to the standard at any given time otherwise it may destabilise the network. It is therefore arguable that the intentions of the initiators and actors forming the network as agreed to in the rates policy framework, have become the standard [Law 1990].

It is important to note that the inclusion of the CAMA system is understood in the context of inclusion of a new actor in the existing and relatively stable network as a shared understanding of the phenomenon by the actors. This understanding is the outcome of the interactions to align diverse interests of actors in a heterogeneous network and to ensure its stability as a socially constructed reality. From the above discussion, the CAMA system's relative importance in the collective interests had

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emerged from the due process. The process enabled effective consultation to resolve the uncertainty emanating from the introduced perplexity (caused by the CAMA system) in the network.

CAMA played a crucial role in enabling and amplifying the dominating trends for implementing the reformed rates policy framework to address the inequity in property valuation and rating. The alignment to the objectives of the network initiators was an attempt by the initiators to recreate or broaden the existing network by the inclusion of the CAMA system, reinforcing the reform agenda through standardisation, control, efficiency and communication. One interviewee commented that:

*“The new rates policy framework enabled better understanding of property valuation and rating because there is one piece of rates framework for the entire Cape Peninsula.*

*[Ratepayers\_Assoc\_Interview 2, pp 2]*

It presupposes that the customisation of the CAMA system did align with the objectives of the reform, *i.e.*, with the provisions of the new rates policy framework. Furthermore, the reformed rates policy framework, inscribed as functionality of the CAMA system had become “discursive furniture” [Wastell in Wynn *et al.* 2002:182] such that if it is held off, we would regard the reform effort as having failed.

In the framework of things, the new rates policy framework has become a by-law of the City of Cape Town which makes it obligatory for all actors to conform to it. Hence, it is upon all actors to adhere to the outlined provisions in the policy framework. The interviews identified that the provisions of the new rates policy framework was properly setup in CAMA such that it was able to assist in determining the revenue base of the municipality. It was very clear in the collected information that

connectivity, privacy and end-user capacity to assess and apply the provisions of the rates policy via the CAMA system might initially be a problem in the less resourced townships or areas of the City.

The penetration of the reform was largely dependent on the CAMA system and the extent to which it was adequately customised to accommodate the provisions of the rates framework. The penetration was also dependent on how the parameters for valuation and rating were modelled to reflect the economic realities of the residential areas of the City. It was suggested by the Valuers during interviews that due to shortage of certified Valuers, the CAMA system should be able to support the policy framework by allowing individuals via the Internet to mock up their property valuation and rating if they have all the necessary information or data to inquire. It was also suggested by one of the valuation experts that it requires the education of the public.

Information or data such as location of property, number and sizes of rooms, number and sizes of bathrooms and toilets, size of swimming pool(s), number and size of garage(s), etc., will enable individuals to mock-up their own interim property values and rates thereof to assess their investments across residential location and over time. In relation to the rates policy framework, the standards are but the provisions of the policy.

A very important characteristic of the CAMA system was its ability to create stability. This is because standards inscribed as functionality in an information system, when routinely used, become adopted and increasingly difficult to modify [Monteiro and Hanseth 1995]. As such, any modification to the standards, *i.e.*, the new rates policy, ought to be coordinated and/or organised properly, similar to how it was created to avoid losing its communicative capability thereby ensuring stability. This

creates the situation where the value for the users increases with the diffusion of the CAMA system, creating lock-ins and self-reinforcing effects. That is, the value for actors increases as they continue to adhere to the provisions of the policy framework already inscribed in the CAMA system as functionality, thereby creating acceptability, consistency, uniformity and lock-ins. This in particular means a “re-engineering” of the processes and procedures of generating data and populating the system by new actors joining the network who are required to use the CAMA system to ensure continued stability of the network.

The next subsection analyses and interprets the institutionalisation of the network made possible by the stabilised CAMA system due to the actions of actors in the network.

### **6.3.3 The role of the CAMA System: Network Institutionalisation**

In this subsection, we will use Structuration Theory (ST) as an analytical tool to understand and interpret how the inclusion of the CAMA system in the network contributed to the institutionalisation of the network. We will draw on the discussion presented in subsection 3.6.2 in Chapter 3, and on the analysis and interpretation of the role of the CAMA system as a supporting information system in stabilising the social network, presented in subsection 6.3.2 above.

The inscribed "program of actions" in CAMA is, in the words of Orlikowski [2000], “at best, potential structuring elements”, ...“until such time as these are actually used in some ongoing human action”. That is, when these inscriptions are routinely mobilized in use, they can be seen to “structure” human action, and thereby become implicated as rules and resources in the constitution and reconstitution of a particular social practice – in this case, property valuation and rates administration.

Through the recurrent use of these inscribed “program of actions” by the users, who used some or all of the functionality and other properties of CAMA, certain properties of CAMA became implicated in an ongoing process of structuration. The resulting recurrent use (as a social practice) of CAMA produced and reproduced a particular “structure of technology use” [op.cit.]. CAMA (as a structure of technology use) therefore became stabilized and in effect institutionalized (successful) amongst the users interacting with it, thereby institutionalising the network in which CAMA – the information system shaded in figure 6.1 – was deployed.

Furthermore, Orlikowski [op.cit.:410] indicates, from her structural model which is based on Giddens’s model and discussed in subsection 3.6.2 in Chapter 3 (the enactment of technologies-in-practice), that “when people use a technology, they draw on the properties comprising the technological artefact – those provided by its constituent materiality, those inscribed by the designers, and those added on by users through previous interactions (*e.g.*, specific data content, customized features, or expanded software/hardware accessories). People also draw on their skills, power, knowledge, assumptions, and expectations about the technologies and its use, influenced typically by training, communication, and previous experiences. These include the meanings and attachments – emotional and intellectual – that users associate with particular technologies and their uses, shaped by their experiences with various technologies and their participation in a range of social and political communities. Users also draw on their knowledge and experiences with the institutional contexts in which they live and work, and the social and cultural conventions associated with participating in such contexts”.

The majority of the people interviewed were of the view that actions by ratepayers, property valuers, rates administrators, politicians, and property owners are less likely to have any impact on the validity of valuation

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figures, valuation procedures, management of property valuation, and municipalities' commitment to improving property rating. The CAMA system is carrying the "rules" of property valuation and rating, and as such has become "technology-in-practice" (using Orlikowski's structural model as an explanatory device) which enables users to draw upon in the sanctioning of their own and other's conduct in the interaction. The actions of the users (people, governance, etc.) as they interacted in the network over time were guided by the functionality of the CAMA system, enforcing the institutionalisation of the system, and in turn, enforcing the institutionalisation of the network.

The analysis also indicates that certain users (*e.g.*, the Council's Valuers, billing department, and the IT department) draw upon the CAMA system as a resource to exercise power either "authoritatively or allocatively" to, in the words of Orlikowski, enact a "specific set of rules and resources in practice that then serve as structure for future use as people continue to interact with the technology. Thus, over time, people constitute and reconstitute a structure of technology use, that is, they enact a distinctive technology-in-practice" [*ibid.*], which here implies that any valuation outside the CAMA system is null and void. Thus, actors in the existing network (the users of the information system – the CAMA system), would, through their recurrent interaction with the system, enact the emergent structures of the system. Since the information system is inscribed with the aligned interests of the network, *i.e.*, property valuation and rates reform, and functionality to support it, the institutionalisation of the system would lead to increased irreversibility, and therefore increased institutionalisation of the network.

The negotiated and aligned interests of actors which have become the intentions of the new valuation and rates policy framework, subscribed to by all actors, should inform the intended actions of actors. But the tacit

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knowledge of the actors which includes 'unconscious sources of cognition' [Jones 1999:109] is likely to make actors act differently to the intended actions and the consequences thereof are new structures [op. cit.] produced and reproduced as they continuously interact. This was confirmed during the interviews by the following statements:

*"Rates levied on public service infrastructure could be passed on to the already burdened consumer and such actions are recognizable by increased price of service delivery."*

*[Valuation Officer\_ Interview, pp 2]*

*"Inadequate public education is likely to introduce different practices by the public after the implementation of the new rates framework."*

*[Seeff Properties\_Manager\_Rondebosch\_ Interview, pp 3]*

*"Political opponents are likely to undermine the rates policy framework by using the provisions as a means to expose a municipality's inefficiencies and incompetencies."*

*[Valuation Director\_BC\_interview, pp 3]*

*"Misinterpretation during implementation of the provisions of the rates policy could re-allocate resources."*

*[Systems Manager\_Valuation\_ Interview, pp 2]*

*"Misinterpretation and miscommunication of the provisions of the rates policy framework and its implementation could create new roles to undermine the good intentions of the new framework."*

*[Relationship Manager\_IT\_Finance\_ Interview, pp 2]*

*“There will be grey areas in the framework particularly where the provisions interface with other by-laws that are likely to be pursued as actions to undermine the policy framework.”*

*[Councillor\_Interview 2, pp 2]*

*“Misuse of specific sections of the policy by members of the public could unintentionally increase administrative burden which could collapse under-staffed municipal valuation offices. These actions could come in the form of written requests for information and reasons for decisions.”*

*[Valuation Officer\_Interview, pp 3]*

The above interview responses demonstrate that the stability of the information system is only stable-for-now [Orlikowski 2000] and as such, the network is temporary stable and provisionally institutionalised. Orlikowski [op.cit.:410] notes that these technologies-in-practice “can be and are changed as actors experience changes in awareness, knowledge, power, motivations, time, circumstances, and the technology. ...People may change their technologies-in-practice by deliberately modifying the properties of their technology and thus how they interact with it. Even when a technology appears to have stabilised, with the discourse around its properties and functionality apparently having reached “closure” ... the stability of the technology and its applications is only provisional. It is provisional because different elements continue to be developed, existing functions fail and are fixed, new materials are invented, new standards are set, and users modify the artefact and/or its content for new and different uses. Technologies are thus never fully stabilized or “complete”, even though we may choose to treat them as fixed, black boxes for a period of time.”

### 6.3.4 Summary

In summary, an existing actor-network was reformed and extended as a result of addressing inequity in the rating system of the City of Cape Town. The inequity was addressed through a new rates policy framework. The framework was achieved through different phases. In the first phase, the initiators of the extended network tabled their intentions in the form of new rates provisions before the citizens of Cape Town. It included how the inequity should be addressed and defined who the role players were and how to get them to participate.

The second phase took the form of getting the actors to accept the initiators' intentions. This was achieved through the process of "building of interest" to align their interests to that of the initiators. This was done by assuring them of the opportunity to contribute to further refinement of the initiators' intentions and the benefits they would be getting. The third phase enrolled the actors to form the network through the submissions of interests by the actors to a non-partisan panel which enabled genuine debate to align interests to that of the initiators and which resulted in the acceptance of the new rates framework.

The fourth and final phase recognised and legitimised the various representatives as forums representing the interests of Capetonians to engage continuously with the City of Cape Town on matters pertaining to property valuation and rating. These phases created a stable network of actors with aligned interests. Next, a non-human actor – a computer-based information system called CAMA was enrolled. The interest of the CAMA system was to implement effectively the provisions of the new rates policy framework.

The CAMA system became the tool to facilitate the modelling of the property rates which took into consideration the economic realities of the communities. The stability of the network was also seen as being dependent on the inclusion of the CAMA system and the institutionalisation of the network depended on the extent of the institutionalisation of CAMA, through the irreversibility properties gained as the result of the 'inscribed' provisions of the rates framework as functionality of the CAMA system.

In the next section conclusions are drawn from the above analysis and interpretation to review the initial framework of analysis.

### **6.4 REVIEW OF INITIAL FRAMEWORK FOR ANALYSIS**

#### **6.4.1 Background**

The previous sections analysed and interpreted the results of the case study and made certain observations and conclusions. In this section, the intention is to review the initial framework for analysis of the case study (see Chapter 4, section 4.6) and suggest how the new PRA could be implemented across South Africa taking into consideration the local challenges. It is appropriate, therefore, to draw the discussions together by recapping the way the analysis was done and how the main results highlighted in this section were obtained.

We declared in Chapter 4 (research approach) that the research study adopts a single-case design containing a single-unit of analysis. Consequently, the City of Cape Town's General Valuation Roll (GenVal) 2000 project was selected as a unit of analysis of the new PRA as a case study because it was expected that the analysis of the unit will provide the context for describing and analysing the case study. The suitability of this

project is demonstrated by the fact that it amalgamated seven different valuation rolls and property rating systems of seven formerly autonomous municipal areas into a single valuation roll and property rating system for the new Cape Town Unicity.

We also declared in Chapter 5 that the view is that there are lessons that have been learnt on GenVal 2000 project at the City of Cape Town which could be applied to the rest of South Africa in implementing the new PRA. Therefore, the analysis focused on the created actor-network as the result of the rates policy reform framework introduced by Cape Town Municipality (*i.e.*, City of Cape Town) to address inequity in the property valuation and rating system in the City. The concept of 'translation' of actor-network theory (ANT) provided the lens through which we were able to analyse the established actor network. As part of the growth of the network, a computer-based information system, the CAMA system, was introduced and included in the network as a non-human actor. The due process model (DPM) was used to analyse the CAMA system's contribution and relative importance to the network.

### **6.4.2 Initial conclusions**

The analysis of the established network of aligned interests used the 'translation' concept of ANT as explained in Chapter 2. Firstly, the rationale for using 'translation' as an analytical tool was to determine what was used to negotiate the alignment of actors' interests to establish the network. That is, how the reform initiative (the new rates policy framework) became the obligatory passage point (OPP) as a situation (or process) which has to occur in order for all the actors to satisfy their interests which have been attributed to them by the reform initiator [Callon, 1986:204]. Secondly, it enabled us to discuss the factors that contributed to the stabilisation of the network. This included the analysis of the

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inclusion of the CAMA system using DPM. The DPM was used as an analytical tool to understand how the new actor was included in the network and whether further stability of the network was undermined or not.

The case study described in Chapter 5 and analysed in this Chapter, tells the story about an active builder of an actor-network, how the network was stabilised and grew. The four phases of the translation process for the understanding of the network of aligned interests indicate the diverse competency and capacity of human (*e.g.*, Valuers, Ratepayers, etc.) and non-human (*e.g.*, the CAMA system) actors needed to enable interactions in the growth of the actor-network.

The problematization and interesement processes demonstrated the importance of problem solving, negotiation and communication skills required by senior valuation officials and city administrators to persuade the public and its representatives to go through the obligatory point of passage. It became evident that an increased level of enrolment success is dependent on the initiator's competency (*i.e.*, skills, experience, and knowledge) to negotiate and convince other actors to enrol in the reform initiative of the rates policy reform framework. The mobilization stage was dependent on the initiator's ability to identify representatives of stakeholders as actors and to integrate them in the network where they acted as active spokespersons, drawing ever more actors into the network.

The analysis of the introduction of a computer-based information system, CAMA, as a new non-human actor in the network and its subsequent role, introduced another perspective into the debate. It was found during the analysis that CAMA's inclusion as a non-human actor in the network enabled and constrained human actions (using Orlikowski's technologies-

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in-practice as an explanatory device). It was noted that a shared understanding of CAMA's function and functionality between actors contributed to the stability of the network. The analysis confirmed that the shared understanding of the CAMA system's functionality enabled CAMA's use as a mechanism to communicate the provisions of the rates policy reform framework.

As a resource, the CAMA system commanded human actors to conform to the "rules" enshrined in its functionality. It was also inferred that as users interacted in the network and routinely used the CAMA system, they unconsciously reproduced structures of domination. In the next subsection, the initial framework presented in Chapter 4 (see section 4.6) is refined in order to create a general framework which could act as a guide to support the rollout of the new PRA across South Africa and beyond.

### **6.4.3 The initial framework refined**

From the interpretation of the analysis, the research suggests that there are four key interrelated roles of importance for an information system in legislation led reform such as the rates policy reform framework at the City of Cape Town which was implemented as the GenVal 2000 project. These four roles are critical for the institutionalisation of the network and to ensure stability when the information system is included in the network. The roles are played by the initiator of the legislation, *i.e.*, the national government (or the Council's executive committee (ExCo) as the case may be), and three stakeholders: the local ratepayers association, the Property Valuation Department, and the Information Technology Department.

Each of these roles has their own significance in the light of the actor-network. The initiator defines identities and interests of other role players that are consistent with its own interests (*i.e.*, defines the nature of the problem as perceived), and establishes the means by which these role players will achieve their interest. The local ratepayers association features prominently in co-ordination, control and feedback across property owners, property developers, property Valuers, and other property valuation and rating advocacy groups, while simultaneously stimulating debates towards alignment of interests.

The role played by the Property Valuation Department is crucial if we desire excellent interpretation and application of the provisions and systems procedure of the rates policy framework, particularly as they influence the functionality of an information system. The role played by the IT Department is also significant in creating the necessary IT infrastructure to ensure successful implementation of the information system.

The absence of any one of the four roles may seriously hamper the implementation of legislation led reform using an information system as an enabler. If the initiator does not take ownership of the formation of the actor-network, the alignment of diverse interests of actors cannot be achieved. Furthermore, the initiator needs to remain involved and active throughout the course of design and implementation of the reform to coordinate the process and interactions between actors. We cautiously infer that the initiator's coordinating role contributed to the successful implementation of the GenVal 2000 project of the City of Cape Town. Although we did not extensively investigate the initiator's role, a premature withdrawal of the initiator would have spelt disaster for the stability of the network.

The ratepayers' association role was very prominent and active and contributed to meeting the overall objective of the policy framework reform. If the role of the Property Valuation Department is absent or neglected, the range of possibilities in interpreting and applying the provisions and systems procedure of the rates policy framework becomes an academic exercise. Consequently, the information systems whose functionality is based on the interpretation of the provisions and systems procedures of policy framework will simply not function correctly. This would obviously spell disaster for the stability of the network given the need to institutionalise the network.

Finally, if the role of the IT Department is absent or seen differently and not as an actor, this may hamper the information system implementation with regard to institutionalising the network. Table 6.1 below captures the involvement of the key role players during the different stages of the DPM.

<b>Key Role players</b> <b>Stages of DPM</b>	Initiator of network	Local Ratepayers Association	Property Valuation Department of Municipality	IT Department of Municipality
Perplexity (or problem)	<b>X</b>	<b>X</b>		
Consultation (or solution)	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Hierarchy (or validation by accepting roles and responsibilities)	<b>X</b>		<b>X</b>	<b>X</b>
Institutionalisation (or stabilisation by accepting representations of legitimacy)	<b>X</b>		<b>X</b>	<b>X</b>

**Table 6.1 : Involvement of key role players during the different stages of the DPM**

The interactions between the key role players during the different stages of the DPM are given below in Table 6.2. It provides a basis for the

analysis of the interactions between actors in a stable actor-network to introduce a new actor, the information system. It can also serve as a guide to include an information system as an actor in a network of aligned interests created by reform driven by legislation. As shown below, this could be useful when implementing the new property (municipal) rates Act 2004 of South Africa across the country.

We now have all elements to propose a general framework for the role of an information system in legislation led reform. This is given in Figure 6.2 below, and captures the process that has been described, discussed and analysed in this chapter. As such the framework is descriptive, describing the actual situation in the GenVal 2000 project of the City of Cape Town, although the framework depicts the situation for the implementation of the New Property (Municipal) Rates Act 2004. This means that we have already generalised from the GenVal 2000 project and in that sense are not describing an actual situation, but the probable one that would develop when the new PRA is implemented. This generalisation is justified, we believe, given the particular relationship between the rate policy reform at the City of Cape Town and the new PRA. Furthermore, it is submitted that more than being just descriptive, the framework could also be used normatively during implementation of the new PRA. Used in that way, one is not saying that following the framework would guarantee successful implementation of the new PRA, but expects that the likelihood of success would increase.

The framework, which is an output of the City of Cape Town's experience, could serve as a guide for the implementation of the new PRA across South Africa and beyond, but it does not provide a short-cut to a successful adoption and use because practices cannot simply be copied or replicated. In a next subsection, we will address some of the implementation challenges likely to confront the rollout or "scaling" of the

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new property (municipal) rates Act across South Africa. First, however, we take up the point that was made above about the normative use of the general framework presented in Figure 6.2 below.

<b>Model Elements</b>	<b>Reform Agenda</b>	<b>Conditions to prevail</b>	<b>Underlying Process</b>
Perplexity or problem	Define the problem(s) and its impact on the network	Translate agenda into a discussion document	The use of credible consultation forum
Consultation or Solution	Consultations or negotiations to align interests	Incentives to enable alignment of interests	Submissions into a debate in a credible consultation forum set up by the initiator(s)
Hierarchy or Validation (Accept Roles & responsibilities)	Agree and accept roles to enforce aligned interests	Recognition and acknowledgment of defined roles and responsibilities	Submissions to debate in National Parliament or a credible consultation forum set up by the initiator
Institution or Stabilization (Accept Representations of legitimacy)	Recognition of representativity; Accountability and probity; Access to relevant information or data; Improvement in service delivery and increased revenue	Recognition and acknowledgment of agreed representativity; Support for the provisions of the Act as functionality of an information system made available; Information System accessible across the country by users; Framework to collect and validate relevant information/data to ensure stability and social order	Submissions into debate in a credible consultation forum set up by municipalities and/or National Government; Provisions of the Act translated into functionalities of an information system; Web-enabled front-end to access back-end information or data; Periodic validation of information or data relevant to stability and social order

**Table 6.2: Interactions between key role players during different stages of the DPM**

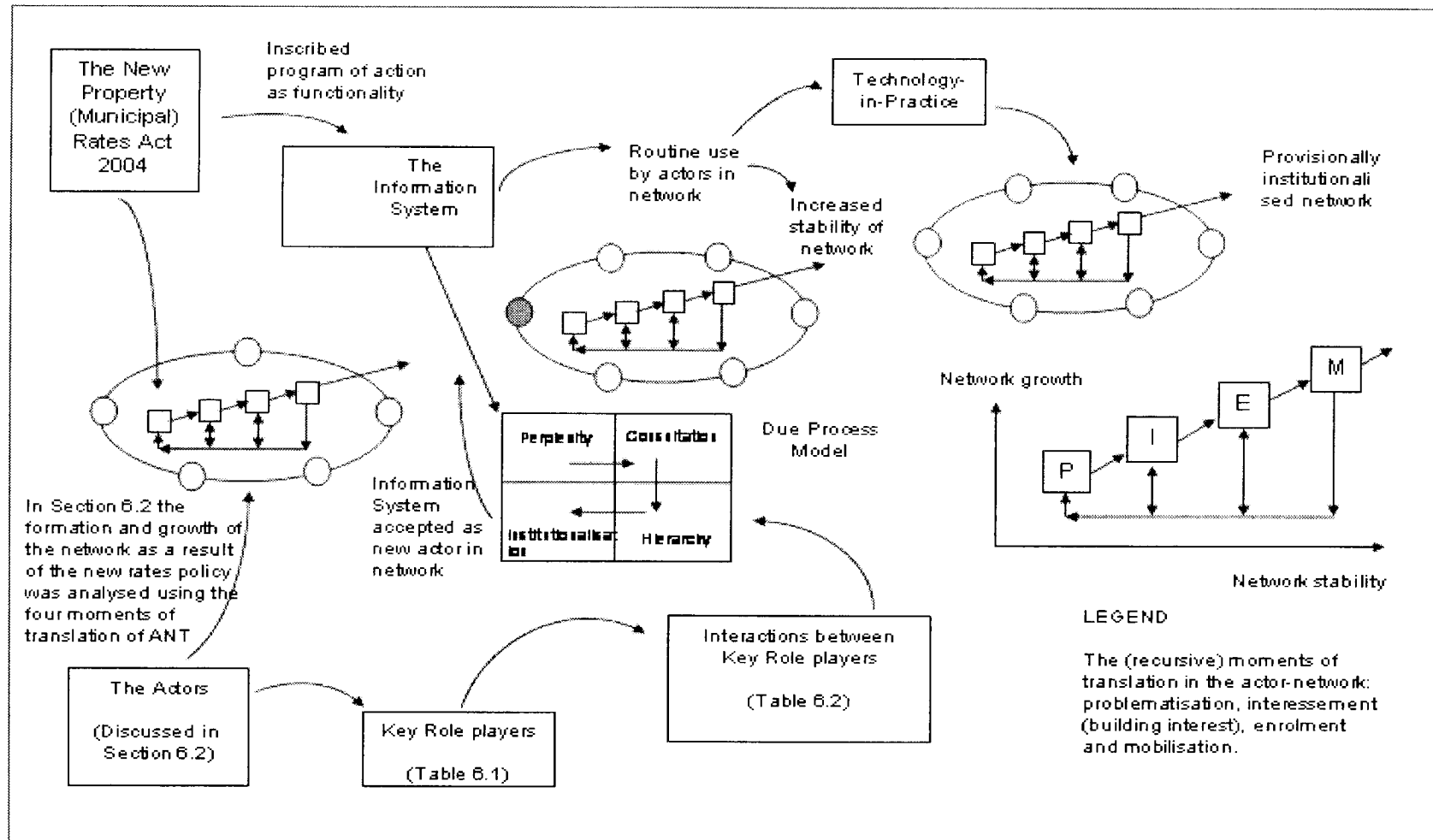


Figure 6.2: A General Framework of Information System Support for Legislation Led Reform

**6.4.4 A phased, normative approach to introduce IS support for legislation led reform**

In this subsection, the general framework presented in Figure 6.2 is further discussed. In particular, we discuss the normative use of the framework that was alluded to in the previous subsection. Throughout this discussion, it should be kept in mind that a normative "application" of the framework does not in any way guarantee a successful implementation of the new PRA. Rather, as mentioned before, we expect this only to increase the likelihood of success.

In order to facilitate the discussion, we imagine a project leader that has to guide the implementation of the new PRA in a South African municipality, intends to use an information system in support of the legislation, and will use the general framework of Figure 6.2 as a guide.

In Figure 6.3 below the life of the project has been divided into three Phases. During Phase One, an actor-network is established around the aligned interests of the involved actors, as described in the case of the GenVal 2000 project, starting with the Problematization provided by the initiator. Similarly, to the GenVal 2000 project at the City of Cape Town, an existing stable actor-network would also be in existence due to the old apartheid municipal ordinances, but new interests would be brought in as a result of the City needing to address the inequity in the property valuation and rating system. This would be addressed through the new rates policy framework of the new PRA.

While the project leader cannot mechanistically steer the formation of an actor-network around this new interest, he or she could be guided by the framework that suggests which actors should be involved. The absence of certain actors could thus be attended to by advising the involved actors about the need to engage such non-involved actors in the process.

Similarly, while the project leader cannot and should not attempt to enforce the moments of translation upon the process, the knowledge of the various moments of translation that should take place, and the need to ensure that a particular moment of translation is successfully completed before the next translation process starts, could again assist the project leader to skilfully guide the process of establishing a renewed actor-network.

The next Phase in the phased approach of Figure 6.3 pertains to the enrolment of an information system as an actor in the network. Such an information system, as shown in Figure 6.3, should contain an inscribed program of action as functionality which would be derived from the new PRA. The process of successfully enrolling this new actor as a new OPP would be guided by the Due Process Model, as shown in Figure 6.3. The framework also suggests who the key role players should be who would be involved in this process, and what their interactions would be as they work through the different stages of the DPM. Again, the project leader would not insist on the stages of the DPM to be followed mechanically by the role players, nor would he or she attempt to enforce the involvement of the "prescribed" role players, and certainly could not ensure that their interactions occur according to the framework. But having the framework at hand could again help the project leader to guide the involvement of the "right" actors, to assist them as they interact, and, keeping the different stages of the DPM in mind, to ensure that no short-cuts are not taken.

During Phase Two, when the new OPP constituted by the information system has been successfully negotiated, actors in the existing network (the users of the information system), would, through their recurrent interaction with the system, enact the emergent structures of the system. As has been explained before, this structural process would over time lead to a "stabilized-for-now" [Orlikowski 2000: 411] status of the system –

a provisional institutionalization that, while it could grow stronger, would always be open for change.

Phase Three cannot clearly be distinguished from Phase Two, except that during Phase Three the information system is already institutionalized within the network. Since the information system is inscribed with the aligned interest of the network, namely, property rates reform, and functionality to support this, the institutionalization of the system as technology-in-practice in Phase Three would lead to increased irreversibility, and therefore increased institutionalization of the network as such. At the same time, during Phase Three, constant “maintenance” would obviously be required, as changes in the environment, the technology, and the actors (some of whom may desert, or forced to leave the network) bring new perspectives and challenges to the status quo.

The Phased, normative approach described above was based on a hypothetical implementation project of the new PRA in a South African municipality. While the suggestion is that the general framework of Figure 6.3 could be used as a guide in such projects, other implementation challenges would also confront the rollout or “scaling” of the new property (municipal) rates Act across South Africa. These are discussed in the next subsection.

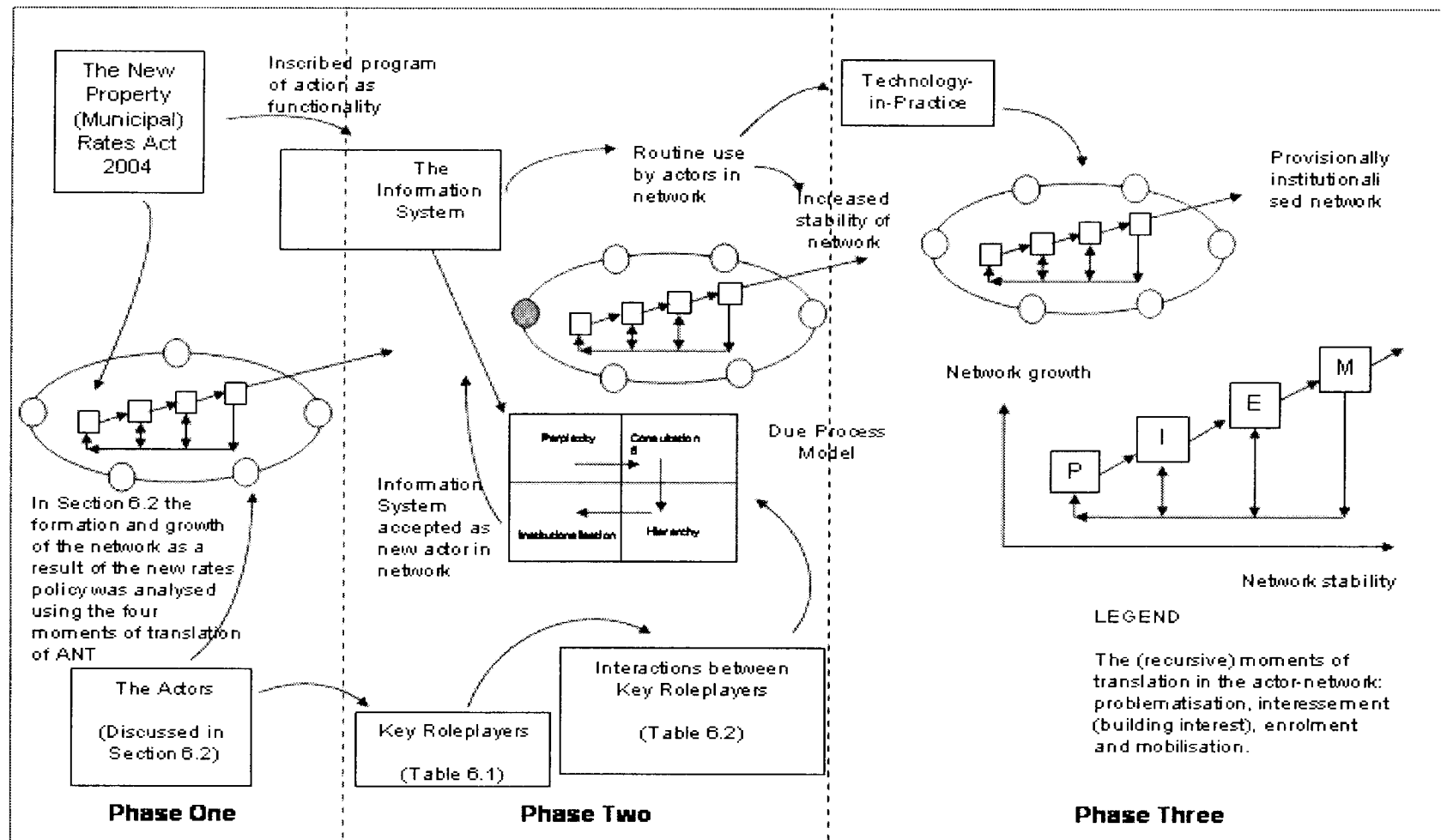


Figure 6.3: A Phased Approach to Introduce IS Support for Legislation Led Reform

### 6.4.5 Implementation of the new Property (Municipal) Rates Act

In chapters 1 and 5, we indicated that the GenVal 2000 project at the City of Cape Town led to the promulgation of the new PRA of South Africa. The GenVal 2000 project is a localized computer-based implementation of the property rates policy reform framework of City of Cape Town. The processes and interactions between the actors in the actor-network that led to the new policy framework and its implementation had local considerations. As already indicated in this thesis, the City of Cape Town is a very well resourced (*i.e.*, both in capacity and competencies) municipality in South Africa and as such had its own unique implementation challenges. Each Province (“global”) and its Municipalities (“local”) in South Africa would thus have their own complex and interconnected systems which will require different levels of analysis due to local actors’ interests and challenges and the global expectations. Furthermore, there are 284 municipalities in South Africa, each having its own challenges and interests. They could be considered as a unified socio-technical network of different technologies, people, processes and the institutional context within which they are embedded. The implementation of the new PRA at each municipality in South Africa using the experiences of the GenVal 2000 project should, however, not be seen as “one size fits all” or a simple replication of the GenVal 2000 project. Instead, one would have to carefully examine what aspects of the system are “scaleable” (see next subsection) and what would require local customization [Sahay and Walsham, 2005:41].

During the interviews, the Director of Valuation at Buffalo City said:

*The implementation of the new PRA needs different mind sets from the public and perhaps better understanding of how municipalities function in both local and provincial perspectives.*

*[Valuation Director\_BC\_interview]*

The above interview response is an indication of implementation challenges of the new PRA across South Africa. The following subsections suggest and discuss two approaches (scaling and rollout) to the implementation of the new PRA across South Africa.

### **6.4.5.1      *Scaling***

Scaling, according to Sahay and Walsham [2005:43], refers to the processes and embedded practices by which heterogeneous networks around a technology (or an information system) are spread, enhanced, scoped, and enlarged. They argue that scaling concerns aspects of geography, software architecture, people, processes, infrastructure, technical support, and political support. In the context of an information system-based property valuation and rating, scaling could imply the expansion of the system in scope and size (where scope could mean an increase in the number of users and size an increase of its functionalities). In other words, scaling is the process of taking what is “local” into a “global” framework that ensures that local consensus and conditions are considered, *i.e.*, “glocalization” [Robertson, 1992; Rolland and Monteiro, 2002].

As such “scaling” the new PRA would be problematic for the well-resourced and well-developed municipalities (the Unicity or Megacities) in South Africa (the City of Johannesburg, the City of Tshwane and Ekurhuleni in Gauteng, Nelson Mandela in Port Elizabeth and eThekweni in Kwazulu-Natal). These Cities would prefer to have full ownership of the implementation of their property valuation and rates systems. However, “scaling” would be suitable for the less resourced and less developed municipalities who would be looking up to their Provinces for capability and capacity support. This presupposes that each Province (global) may have to decide to have a centralised system of core “global” functionalities

that is uniform across the province for the less developed and resourced municipalities and district councils but with “local” customisations that allow for local requirements or expectations. The Director of Valuation at Buffalo City in East London, when asked how he compares the GenVal 2000 project of the City of Cape Town with the new PRA, indicated that:

*Although we were not involved in GenVal 2000 project, what we have learnt from it tells us that the two are very similar. It brought stability and equity to the Cape Town property valuation and rating system. Many people of similar position like me took keen interests in the development of GenVal 2000 project.*

*[Valuation Director\_BC\_interview]*

The above response is an indication of the local challenges and opportunities vis-à-vis the “global” expectation. Therefore, in context, “scaling” is to implement the new PRA by extending from a centralised point the GenVal 2000 project of the City of Cape Town “as is” for another site or municipality such that it “grows” the existing capabilities and functionalities with the local requirements with the view to meeting the local expectations. Here, we refer to the Genval 2000 project as the valuation and rates policy reform framework and the CAMA system. However, it would require some form of guidelines (see cultivation and unanticipated effects below) to ensure a certain level of success. This is because different groups will view “globalization” processes based on their socio-political-historical contexts and will therefore see scaling of systems to be inherently problematic [Sahay and Walsham 2005:41].

### 6.4.5.2 Rollout

A rollout is a staged series of activities that often accumulate meaning as they occur<sup>15</sup>. That is, in the context of this research, rollout is replicating what is “global” to “local” but accommodating local conditions or realities such that the outcomes at the local situation are not different from the global one. To elaborate further is to say that using the experiences of the Genval 2000 project at the City of Cape Town to implement the new PRA is to replicate the experience to another site or municipality but accommodating the local dynamics such that it brings meaning to the use of the new experience. Rollout, therefore, would be suitable for the well-resourced and well-developed municipalities (the Unicitys or Megacities) in South Africa who would prefer to have full ownership of the implementation of their property valuation and rates systems. Rollout would also require some form of guidelines (see cultivation and unanticipated effects below) to ensure a certain level of success.

In view of the above theoretical perspectives, one can scale or rollout the implementation of the new PRA in all municipalities across South Africa by adopting different approaches. Any such approach should consider, in an interconnected manner, aspects of technology (or information systems), people, processes and the institutional context within which they are embedded to examine the socio-technical processes and embedded practices by which the information system-based property valuation and rating is constructed and used. Drawing on the work of Sahay and Walsham [2005] in respect of information infrastructure and its influence on the scaling (also appropriate for rollout) of a health information system in India, the following are recommended for the implementation of the new PRA across South Africa.

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<sup>15</sup> [http://whatis.techtarget.com/definition/0,289893,sid9\\_gci212918,00.html](http://whatis.techtarget.com/definition/0,289893,sid9_gci212918,00.html)

**6.4.5.3 Cultivation approach**

In this approach the existence of the installed base and the lock-in effects are acknowledged such that we follow a smooth and incremental strategy that involves changing one small part at a time while keeping the changes simultaneously aligned with the rest of the network, provincially and nationally. In this context, the installed base is the current IT infrastructure of the municipality, users' experience and practices of property valuation, rate calculations and billing. The Director of Valuation at Buffalo City indicated:

*I believe information system-based implementation of the new PRA will be influenced by how it is implemented. Access to property valuation and rating information by ratepayers should be possible via internet with a solid back-end system like Cape Town's CAMA System. It will require an army of Valuers and project management competency and capability. [Valuation Director\_BC\_interview]*

The response is an indication of the need not to “throw away the baby with the bathwater” but rather to recognise, accept and expand incrementally the workings of the current system while incorporating the new provisions and systems procedures of the new PRA. The approach should be based on the Due Process Model, discussed earlier in Chapter 2 to increase the likelihood of success of accommodating new interests in the network without disturbing the stability of the already existing heterogeneous network. Furthermore, the cultivation approach should address the lock-in-effects created by the entrenched current systems and procedures and take into consideration the new patterns of use dictated by the requirements of the new PRA. This change would be achieved by incremental and gradual customization of the functionality of the existing information systems and step-by-step replacement of the existing

information system to a robust one that incorporates the requirements of the new PRA.

Alternatively, one could follow an approach where scaling or rollout is introduced without following a smooth and incremental strategy. This is discussed next.

#### **6.4.5.4 Unanticipated effects**

The nature of the interconnected network already described above creates potential for “unanticipated effects” [op.cit.] if one would attempt to rollout or scale the GenVal 2000 project of the City of Cape Town through replication into other Municipalities in the country to implement the new PRA. The following interviewees had this to say when asked if Municipalities have the capacity (i.e., personnel, structures, etc.) to interpret and apply the PRA consistently:

*Where I'm sitting, I doubt if we have the capacity to implement the new PRA. That is why we have not started the process to implement the new Act. We have no qualified people to implement the new Act and I'm using consultants to sustain the current system. [Valuation Director\_BC\_interview]*

*Currently I doubt. The reason why we have not started is basically that and the political tension it will create will consume the time of the limited staff. [Gauteng Valuation\_officer\_interview]*

Buffalo City and the Gauteng Province are a well-resourced municipality and Province, respectively, in comparison with the majority of the municipalities and Provinces and one cannot predict the capability and competencies of those municipalities and Provinces which still have to

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implement the new PRA. This is so, not only because we cannot have complete knowledge of the local situations in those municipalities and Provinces, but also because of the non-deterministic nature of the socio-technical systems represented by these entities. Therefore, there is the need to adopt an approach that allows for flexibility in thinking and action such that we are in the position to identify challenges or the unexpected as interests to be addressed. We would then be in the position to accept the unexpected as opportunities for change to be included in the collective interests of the network (using the DPM) as the new PRA is implemented. This approach would again increase the likelihood of maintaining the stability of the institutionalised network.

### **6.4.6 Summary**

In summary, although the General Framework presented in Figure 6.2 is not prescriptive, it does suggest the process to be followed, the key role players and the interactions between them, and the necessary conditions required for a successful implementation of reform driven by legislation. It also shows how an information system can play a role to ensure that the provisions of the legislation are interpreted and applied consistently and uniformly across time and space and bring about stability and social order.

The study is a reflection of the need for human resources capacity development. Such a development should focus not only on the technical issues but also on a sound understanding of the needs for systems implementation through rollout and scaling. The development should also focus on the processes, not only related to software architecture (no matter how crucial it might be) but also related to the escalation of complexity associated with institutional issues, such as politics, and the growth of the rollout and scale up team(s) themselves. Furthermore, the rollout and scale up team(s) should have the competency to identify

opportunities that may arise as the result of unplanned (or unexpected) events and use it to their advantage to address effectively the rollout and the scaling challenges [Sahay and Walsham, 2005:50-51].

In the next and final Chapter, the research effort is concluded. This is done by evaluating the contribution of each Chapter towards the research work, how these Chapters have contributed to addressing the research questions, and the contributions made to the body of knowledge. Finally, the limitations of the research are pointed out and recommendations are made for further research.

**CHAPTER 7: CONCLUSION**

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### 7.1 INTRODUCTION

As described in Chapter 1 and elaborated in Chapter 2, the core of this research is the extent to which the interest of a new actor becomes aligned to an existing, stable collective of interests of actors and how the inclusion of the interest affects the continued stability of the new collective. The previous Chapter was devoted to discussing the analysis of the Case Study results at three levels using the initial framework for analysis illustrated in Figure 4.1 of Chapter 4.

The first level of analysis was from the perspective of the 'Moments of Translation' concept of Actor Network Theory. The concept which was described in Chapter 2 was used as a tool to analyse and understand the process and interactions between actors that led to the new rates policy framework of the City of Cape Town and the formation of a stable social network of actors. The translation concept was also used to understand the drafting and promulgation of the new PRA of South Africa and how it created a network of interest groups. The second level of analysis was from the perspective of the Due Process Model which was also described in Chapter 2 to analyse and understand the inclusion of a new actor in the stable social network and how its stability was affected.

The third and final level of analysis used the perspective of Giddens' structuration theory as an explanatory device to analyse human actions in relation to the development of rules and resources associated with the policy reform framework at the City of Cape Town that influenced the production and reproduction of structures.

Given the outcome of the analysis of the results, the previous Chapter discussed the refinement of the initial framework for analysis of the results to a general framework. The latter emphasises the need for a logical

relationship between the collective interests of actors due to the reform policy framework and the approach needed to implement the framework using an information system as an actor.

It has to be mentioned that in Chapter 2, we highlighted the uncertainties the South African government faces when seeking to implement legislation led reform. Although legislation may be initiated at the national level, its implementation is at the local government level where service delivery is provided. In reference to this, we highlighted in Chapter 2 that the implementation of legislation which drives reform in society creates interactions between human and non-human actors resulting in the establishment of social networks of aligned diverse interests. As such, this study sought to determine if there exists a logical relationship between the aligned diverse interests of these actors and an approach needed to implement the new legislation using an information system as an actor.

In this Chapter we conclude the research effort by analysing how each Chapter contributed towards addressing the research questions. The Chapter is organised into six sections. The second section gives an overview of the research and the third section discusses how the main results have contributed towards addressing the research questions established in Chapter 2. The fourth section is devoted to contributions the research has made and the fifth section assesses the contributions made by the research. The sixth and final section discusses the limitations of the research and recommends areas of further research.

### **7.2 OVERVIEW OF THE RESEARCH**

In Chapter 1, the thesis examined the nature of the research problem. It was established that the political changes since 1994 have had significant impact on the social structures of South African society. We alluded to the fact that these changes are mostly driven by legislation whose purpose is

to institutionalise reform across South Africa. We did point out that legislation by its nature usually creates interactions and associations between different agents or actors (human and non-human) at different levels of society and gave examples such as the National Government (Macro), Provincial Governments (Meso), and Municipal and Local Councils (Micro).

We also pointed out in Chapter 1 that some of these interactions are so complex that they create new political processes and social networks of association not only at the implementation level but also at the strategy planning level and have technological and social implications. The consequence scenarios alluded to were as follows:

- The creation of a heterogeneous network of associations with aligned diverse interests arising from the design and promulgation of legislation;
- The implementation of legislation that requires an information system to become part of the network of associations with either similar or different interests; and
- The assurance of the stability of the network across time and space.

In view of the above scenarios, the new Property (Municipal) Rate Act (PRA) was given as an example of legislation led reform driven by the South African Government to reform how properties should be valued and rated across the length and breadth of South Africa. The Chapter also established the rationale behind the new PRA. Here, we argued that the national government was given a wake-up call to reform the old municipal ordinances to avoid a wide-spread rates payment boycott due to the Grassy Park incident. The incident, we argued, was the threat of rates payment boycott by predominantly 'coloured' residents of Grassy Park, a

suburb of City of Cape which made the City reform its rates policy framework.

The research therefore sought to investigate the nature of the interactions and the processes that enabled the City to address the inequity in the old framework and to establish how the new property valuation and rates policy framework and its implementation using the GenVal 2000 Project were achieved. This, we assumed, could fundamentally guide the implementation of the new PRA across South Africa – an urgent need, since many of the municipalities in South Africa have not conducted acceptable property valuation rolls for at least 20 years and the current capacity and capability – infrastructure and skills – would not be sufficient to implement the new PRA.

Chapter 2 examined the theories underpinning the research, particularly towards the interpretation of the logical relationship between the alignment of interests of affected actors and the role of an information system. A review of this demonstrated that a network of association was established as a result of the initiation of the reform. The conceptual understanding of the role of an information system as an actor in this network to create standardisation, leading to effective communication, was established in Chapter 2.

Conceptually, Chapter 2 also gave an indication as to how we could achieve an expansion of the actor network without destabilising it. In Chapter 2 and particularly, in Chapter 3, where the literature was reviewed, a review was also conducted of the nature of legislations and how the new PRA has become a means to reform property valuation and rating across South Africa. Finally, in Chapter 2, a conceptual framework was developed to provide a picture of the problem the research intended to address.

Chapter 3 was devoted to a literature review of this theme. The intention of the literature review was to outline the current thinking in terms of reform driven by legislation. The review was also to extend the thinking in terms of how an information system could play a role in institutionalising a network of aligned diverse interests of actors across time and space. The review established that social change could be enacted through an all-inclusive process where other actors who might oppose a reform process are enrolled in the effort. The literature did not review the legislation formulation process in Parliament but argued how Governments through parliament often act as initiators of most Bills that lead to Acts of Parliament which when implemented and accepted by citizens and institutions, become part of a network of association. The literature review continued that legislation as an Act of Parliament could be used to build the functionality of an information system to create a new discourse that could transform society. It was argued that an information system could become a medium for stabilising and institutionalising an actor network, and a means to enrol other interests in a network. As a non-human actor it becomes a delegate for a particular interest, authorised to “stand in” or “speak for” a human actor – the initiator.

In Chapter 3, we established that there are enough reasons to suggest that ‘patterns of reform’ emanating from collective interests when routinely used can gain the properties of irreversibility when institutionalised. Furthering the argument, we articulated that an information system with inscribed ‘patterns of reform’, if used to implement the collective interests, contributes to the stability of the established network. It was also argued that a reform agenda initiated by a network initiator with a view to enrol more actors into a network towards reform could be inscribed in an information system, and when adopted through routine usage would lead to successful reform.

Chapter 3 also revealed that property valuation and rates reform initiatives differs from one African country to another and in most cases it is to address colonial and past inequity. In the case of South Africa and Namibia, it was to address the Old Municipal Ordinances which created property valuation and rating inequities. In other African countries reviewed, it was to improve the revenue base of the Municipalities and Local Authorities and generally, the government tax collection net. It was therefore argued that all the property valuation and rating reform Acts have provisions and systems procedures which lend themselves towards possible automation.

Chapter 4 reviewed the theoretical and philosophical assumptions underlying research methodology in the field of information systems and discussed the fieldwork. The fieldwork provided an insight into the nature of the rates policy reform, particularly from the perspective of the Grassy Park incident, the process used in facilitating the rates policy change and the use of the CAMA system as an information system. We also discussed the research design for this study. We further argued that in order to conduct this research project the epistemological and ontological assumptions of interpretive research were required and motivated a research strategy based on a single case study. Further to this, the data collection techniques adopted were observation, semi-structured interviews, individual discussion, documentation and archival reports analysis. The City of Cape Town was selected as the Case and the unit of analysis was the new rates policy framework implemented as the General Valuation (GenVal) 2000 project whose valuation roll was to have been published in 2001.

In addition, the Chapter established the initial framework with which the results of the fieldwork were analysed and interpreted. The framework adopted Actor Network Theory (ANT), the Due Process Model (DPM) and

Structuration Theory (ST) as the underpinning theories to guide the analysis and interpretation of the process and interactions between the actors in the network. DPM was used as a lens to analyse the inclusion of a new actor into the existing actor network and ANT as a tool for the analysis of the formation of the existing network. ST was employed to further understand and interpret the institutionalisation and the stability of the network.

Chapter 5 discussed the case study. Data was also collected from Gauteng Provincial Government, and Buffalo City in East London. Though the questions to these two areas were the same as that used for the City of Cape Town, the responses reflected the views of the ratepayers, Valuers and Revenue Officers on the new PRA, its implementation and the benefits thereof. They also answered questions about their views on the rates policy reform framework implemented as the GenVal 2000 project at the City of Cape Town. In Chapter 5, we justified the rationale for the new PRA using the incident at Grassy Park and the subsequent court ruling which was in favour of the ratepayers association at Grassy Park in Cape Town. In addition, we highlighted the experiences of the GenVal 2000 project at the City of Cape Town, as a further justification for the new property (municipal) rates Act.

In Chapter 6, the data collected in the case study were analysed and interpreted at three levels. The first level analysed the results of the case study by using the 'moments of translation' concept of Actor-Network Theory. The analysis established certain key themes. These are, firstly, the ability of the initiators to define the problem and render themselves indispensable to garner the interests of other stakeholders (actors) into a collective objective. Secondly, the process followed by the created network to enrol CAMA as an actor into the stable network and how that influenced the continued stability of the network. Finally, how the various

forums became legitimate representatives of actors to engage continuously with the initiators of the network for the protection of their interests. These themes were taken into consideration in refining the initial framework for the analysis of the process and interaction between actors in the implementation of the new PRA using an information system.

The second level of analysis used DPM as a tool to interpret the results of the case study from the social context perspective of institutionalising the network. The third and final level of analysis applied ST as a lens to interpret the results of the case study from the perspective that institutionalised features of a network of aligned interests have structural properties that contribute towards social stability across time and space.

The analysis started from the premise that a stable actor-network was in existence due to the old apartheid municipal ordinances but had to accept new interests brought in as a result of the City needing to address the inequity in the property valuation and rating system of the City of Cape Town. We argued that the inequity was addressed through a new rates policy framework. Given that context, we suggested that the objective of the GenVal 2000 project was achieved through different phases. In the first phase, we argued that the initiators of the network tabled their intentions in the form of new valuation and rates provisions before the citizens of Cape Town. It indicated how the inequity could be addressed and defined who the role players were and how to get them to participate by aligning their interests to that of the initiators.

The second phase took the form of getting the actors to accept the initiators' intentions. This, we argued, was done by assuring them of the opportunity to contribute to further refinement of the initiators' intentions and the benefits they would be getting out of the initiators' intentions. The third phase enrolled the actors to form the network through the

submissions of interests by the actors to a non-partisan panel which enabled genuine debate to align interests to that of the initiators' and which resulted in the acceptance of the new rates framework. In the fourth and final phase we discussed the recognition and legitimisation of the various representatives, *e.g.*, the ratepayers association, as forums representing the interests of Capetonians to continuously engage with the City of Cape Town on matters pertaining to property valuation and rating. We argued that these phases created a stable network of actors with aligned interests. For the growth and further stability of the network, a non-human actor, a computer-based information system called CAMA, was enrolled. We suggested in our discussion that CAMA's interest was to implement effectively the provisions of the new rates policy framework.

Furthermore, we argued that further stability of the network was also seen as dependent on the inclusion of the CAMA system and its stability and that the network stability depended on the extent of institutionalisation of CAMA and the irreversibility properties gained.

Next, the initial framework for analysis presented in Chapter 4 was reviewed and refined, based on the conclusions reached from the analysis and interpretation of the case study results. A general framework was presented in Figure 6.2. It was submitted that this framework could be useful as a framework to guide the implementation of the new property (municipal) rates Act 2004 of South Africa across the country. Such a guide was presented as a phased, normative approach to introduce information system support for legislation led reform in Figure 6.3.

Finally, the implementation of this Act across the country was addressed by discussing the options of rollout and scaling, and recommendations were made to support the different implementation options.

In the next section, we discuss how these Chapters of the thesis contributed to addressing the research questions established in Chapter 1.

### 7.3 THE RESEARCH QUESTIONS REVISITED

This research recognised the role of an information system in legislation led reform as an integral part of the broader transformation of society for improved service delivery, and attempted to address the challenges associated with implementing social reform. The implementation process and the interaction between role players - human and non-human – were investigated within their broader context. Details of the influences, challenges and approach are captured in the answers to the stated research questions.

#### 7.3.1 Research Question 1

***How can new actors (human and non-human) and their interests be included in a complex heterogeneous network of actors of aligned diverse interests resulting from legislation?***

The research assumed the existence of a stable network of actors with aligned diverse interests as the result of the old Municipal Ordinances before the introduction of a new rates policy framework at the City of Cape Town. It must be reiterated that the reform of the property valuation and rating policy framework at the City of Cape Town led to the reform of the national property rates law referred to in this thesis as the new Property (or Municipal) Rate Act (PRA). The research therefore attempted to trace and explain the processes whereby the existing stable network was transformed into a new stable network to deal with the challenges of introducing the new PRA. ANT, DPM and ST were used as lenses for this purpose.

In Section 6.2 the formation and growth of the network as a result of the new rates policy was analysed using the four moments of translation of ANT. In Section 6.3 the inclusion of an information system as an actor in the network was analysed using DPM, and, using ST, the ability of the information system to further stabilise the network and contribute towards its institutionalisation, was discussed.

The analysis and interpretation of the case study from the perspective of ANT showed the ability of the initiators to define the problem and render themselves indispensable to garner the interests of other stakeholders into a collective objective. The analysed interview data also showed how the various forums (e.g., the valuation department, the ratepayers association, the association of valuers, and the association of real estate agents) became legitimate representatives of actors to engage continuously with the initiators for the protection of their interests. Tracing the actions of stakeholders through the four moments of translation, the analysis concluded that a stable network was established around the objective of implementing the new rates policy framework.

In Section 6.3 the inclusion of an information system, CAMA, into the network was analysed using DPM as a lens. The analysis focused on two phases of the DPM, namely, consultation and hierarchy, and established that these phases were successfully concluded, leading to the inclusion of the information system into the network without destabilising it. Next, using ST, the analysis focused on the contribution CAMA made to the institutionalisation of the network.

The provisions of the new rates policy framework were considered as inscribed programs of actions in the form of functionality of CAMA. CAMA's position in the network was thus as an actor imposing its inscribed "program of action" on the other actors in the network. Based on

the analysis of the case study data, we were able first to conclude that CAMA created stability in the network. This confirmed the observation of Monteiro and Hanseth [1995] that standards inscribed as functionality in an information system, when routinely used, become adopted and increasingly difficult to modify. Using the concept of "technology-in-practice" of Orlikowski [2000], we next investigated and argued how CAMA contributed towards the institutionalisation of the network. We were careful to note that the stability of the information system is only stable-for-now, and that consequently, the network also is only temporarily stable and provisionally institutionalised.

### 7.3.2 Research Question 2

***What is the role of an information system as an actor in consolidating the collective interests of actors in a social network resulting from reform driven by legislation?***

The case study results illustrated the role an information system would typically play in consolidating the collective interests of actors in a social network. The analysis of the results showed that the institutionalisation of a heterogeneous network of actors with aligned diverse interests can effectively be supported using an information system. That is, we can inscribe a program of action as functionality of an information system which ensures that through its routine use all actors in the network interpret the collective interests consistently and apply them uniformly.

Furthermore, as the information system is used, we see an increasing mutual influence between the information system and the actor network. As the information system becomes entrenched in the network, we see that the network has an increasing reciprocal influence on the information system in terms of actors' interests, standardisation and new ways of

communication as the information system becomes a definitive source and organisational memory. The argument, therefore, is that as the use of the information system increases, a lock-in effect is created, contributing towards the network's stability and its provisional institutionalisation.

Although we do not believe that an information system alone is sufficient to support reform as required by the collective interests of the actors in the network, we do believe that as a highly visible non-human actor in the network, an information system can be used as a powerful and crucial tool to support legislation led reform. However, it must be stressed that misinterpretation of the provisions of the Act by property valuation and rating officials at municipalities could replicate and reinforce wrong meanings of the Act and as such, the functionality of the information system would perpetuate this to the detriment of the social network. For example, in the rollout of the new PRA across South Africa, historical events and inadequate capacity in certain municipalities may influence the interpretation, application of the provisions of the Act and their inscription as functionality of an information system.

If this is allowed to happen, the information system may thus 'lock-in' the features of the misinterpretation. If the network becomes institutionalised in this manner, the information system may turn out to be a barrier to reform. As a means to consolidate the collective interests of actors in an actor-network, an information system as an actor and social structure (as technology-in-practice) in the network should be properly designed and implemented.

7.3.3 Research Question 3

***Which general guidelines are required to enable an information system to play a major role in implementing legislation led reform such as the new property (municipal) rates Act in South Africa?***

We described the process of re-stabilising the actor-network when an information system was included as a new actor. An information system was considered due to its ability to provide the means for consistent interpretation and uniform application of the provisions of the policy framework or the new PRA when these are inscribed in the functionality of the system as programs of action. When the information system is routinely used, and becomes institutionalised in the network, it stabilises the network and contributes to its (provisional) institutionalisation.

In section 6.4.3, we discussed the importance of four key interrelated roles played by different stakeholders (actors) when introducing an information system as a new actor into an already existing stable actor-network, aligned around the interest of implementing the rates policy reform framework at the City of Cape Town. With reference to the Due Process Model (DPM), Table 6.1 showed the involvement of key role players in the different stages of the DPM. The argument was that the likelihood of including an information system successfully into the existing actor-network crucially depended on the active involvement of the right stakeholders during the relevant stages of the DPM. Table 6.1 therefore serves as a first guideline to negotiate the point of inclusion of an information system successfully.

The interactions between key role players during the different stages of the DPM were captured in Table 6.2 which shows, for each stage of the DPM, the aspects of the reform agenda to be taken into account, the

conditions that should prevail, and the underlying process that should be followed to complete the particular stage of the DPM successfully.

Together Tables 6.1 and 6.2 therefore provide guidelines on how to enable an information system to be included into an existing actor-network, where, as has been discussed before, it could through its inscribed program of action play a major role in implementing legislation led reform. Using these guidelines as described amounts to a normative application of the DPM, and we stress that this should not be expected to guarantee success, but could be expected to increase the likelihood of success. Having said this, it must be pointed out that we have extrapolated from the Case Study results of the GenVal 2000 Project at the City of Cape Town to the general problem of the new PRA. This generalisation is justified on the basis that similar conditions as in the case of the GenVal 2000 Project would prevail for each implementation of the new PRA. In Table 6.1 the relevant role players or stakeholders might, depending on the local conditions, be different.

In the context of the answers to the research questions given above, it is appropriate to discuss the contributions made by this research. This is done in the next section.

### **7.4 RESEARCH CONTRIBUTIONS**

This section reviews the theoretical, the methodological and the practical contributions of the research.

#### **7.4.1 Theoretical Contributions**

The theoretical contribution of the research in essence consists of the general framework that was put forward in Chapter 6 in Figure 6.2. It

encapsulates the entire research effort, but more than that, could serve as a guideline for the implementation of the New Property (Municipal) Rates Act 2004. The framework is descriptive and was derived from the actual situation in the GenVal 2000 project of the City of Cape Town, the Case Study of the research. It was submitted, however, that the framework could be used normatively during implementation of the new PRA. Used in that way, one is not saying that following the framework would guarantee successful implementation of the new PRA, but expects that the likelihood of success would increase.

The framework also provides a basis for approaching the more general problem, beyond the implementation of the new PRA, of information system support for legislation led reform. As such it represents a theoretical contribution, by providing an understanding of the complex interplay of all elements (human and non-human) involved in the process. It not only shows the various interactions, but also indicates the respective theoretical underpinnings that play a role in providing this understanding.

### **7.4.2 Methodological Contributions**

In Chapter 4, we argued that in order to conduct this research project the epistemological and ontological assumptions of interpretive research were required and motivated as a research strategy based on a single case study. The City of Cape Town was selected as the Case and the unit of analysis was the new rates policy framework implemented as the General Valuation (GenVal) 2000 project whose valuation roll was to have been published in 2001. The data collection techniques adopted were observation, semi-structured interviews, individual discussion, documentation and archival reports analysis.

In addition, we established in Chapter 4 the initial framework with which the results of the fieldwork were to be analysed and interpreted. The

framework adopted Actor Network Theory (ANT), the Due Process Model (DPM) and Structuration Theory (ST) as the underpinning theories to guide the analysis and interpretation of the process and interactions between the actors in the network. DPM was used as a lens to analyse the inclusion of a new actor (CAMA) into the existing actor network and ANT as a tool for the analysis of the formation of the existing network. It was pointed out in Chapter 2, section 2.1 that DPM could be used in general to study how human and non-human actors come together in a single collective, but in this study DPM was focused on the inclusion of CAMA alone, due to the great importance of CAMA in terms of its contribution to the stabilisation and institutionalisation of the network. ST was employed to further understand and interpret the institutionalisation and the stability of the network.

The methodological contribution of the research, therefore, is the way in which the concepts of Actor-Network Theory, the Due Process Model and Structuration Theory were combined and applied, using the initial framework presented in Chapter 4, to study the interactions and processes in the case study of legislation led reform supported by an information system. It is submitted that this could serve as an example to other researchers, involved in similar projects. Looking back over the life of this research project, the researcher can testify how much has been gained by using the underpinning theories instead of just relying on common sense. It is often pointed out that these underpinning theories do not come with a method of how to make use of them. It is hoped that this research would provide some methodological insights to other researchers who intend to apply the underpinning theories used in this research.

### 7.4.3 Practical Contributions

The principal aim of this study was to understand and interpret the role of an information system in reform driven by legislation. Throughout the study, the aim has also been to provide results which could inform the process of reform driven by legislation in practice. Our review of the available literature showed a dearth of researched models and theories that could facilitate this process – especially as far as information systems support for the process is concerned. It is the hope that this study goes some way towards filling this void.

The practical contribution of this research is the phased, normative approach to introduce information system support for legislation led reform that was discussed in Chapter 6, Section 6.4.4. The approach is based on the general framework presented in Figure 6.2, and as discussed in Section 6.4.4, details in a normative way how an information system-based legislation led reform initiative could be guided through three phases. We hasten to stress, as before, that the normative application of the general framework cannot and will not guarantee success, but we expect that its use would increase the likelihood of success.

The phased, normative approach incorporates all aspects of the research based as it is, on the general framework which encapsulates in a descriptive manner, the whole research project. Thus, any project leader involved in the implementation of the new PRA, or other similar legislation led reform project, where an information system would be required to support the process, would have an excellent guide at hand to steer the difficult implementation process.

Another practical contribution is the detailed insight provided by the case study. The case study reveals that “build-deploy-run-maintain” information

systems initiatives in the public sector of developing economies should be linked to productive activities of the government. Thus, for effective implementation, emphasis should be placed on the importance of understanding the social context of work, tasks and government (as an organisation). This then will help increase the social integration of the information systems initiative and, hopefully, its institutionalisation.

In the next subsection Whetten's [1989] principles are used to assess the contributions made by this research.

### **7.4.4 Assessing the contributions**

Whetten [op.cit.] identified four aspects to be taken into account as part of an assessment of the contribution made by a research study to the body of knowledge in the particular field. These are as follows:

1. What? What factors and concepts should be included as part of the explanation of the contribution? This involves the inclusion of all relevant factors and parsimony. However, it excludes those factors that have little role to play in improving the understanding of the contribution.
2. How? Subsequent to the identification of the factors and concepts which are part of the contributions, the researcher should reflect on how these factors are interrelated.
3. Why? Why select certain factors? That is, what are the underlying assumptions of the theory or model? This means that the logic of the proposed conceptualisation should be of interest to other researchers.
4. Who, where and when? These enquiries define the boundaries for generalisation.

Given Whetten's framework for the assessment of the contribution of this research, the following questions are asked to help assess the contribution.

*What is new in this research study which makes a significant contribution to current thinking?*

*What is the theory likely to change in the way legislation led reform initiatives are implemented in societies affected by inequity?*

*How so are the underlying logic and supporting evidence compelling?*

*How so are the underlying logic and supporting evidence compelling?*

*How well does the research work reflect seasoned thinking, convey completeness and thoroughness?*

*How well is the thesis written? Does it flow logically? Are the central ideas easily accessed?*

*Why is this topic of contemporary interest to scholars and practitioners in this area?*

*Who amongst academia would be interested in this topic?*

In what follows, these questions are answered.

*What is new in this research study which makes a significant contribution to current thinking?*

Based on the results of the case study, and the analysis and interpretation thereof, a general framework (See Figure 6.2) was developed and

discussed in Section 6.4. Furthermore, in Section 6.4.4 a phased, normative approach to introduce information system support for legislation led reform was presented (see Figure 6.3) and discussed. It was argued that the framework could be used information system-based legislation led reform initiatives. The framework can be used to guide the process of initiating social reform to be driven by legislation where consistent interpretation and uniform application of the provisions of the legislation is critical and the systems procedure of the legislation is to be implemented to ensure stability and social order.

Secondly, the methodological contribution of using Actor-Network Theory, the Due Process Model and Structuration Theory to analyse and interpret the results of the case study is believed to be fresh and innovative. The approach employed in this study could be of use to other researchers in conducting similar studies in other developing countries affected by inequities.

*What is the theory likely to change in the way legislation led reform initiatives are implemented in societies affected by inequity?*

Regarding the general framework of Figure 6.2 as "theory", its use in the phased, normative approach of Figure 6.3, discussed in Section 6.4.4, is quite clear: it would provide the basis for an orderly process of implementing legislation led reform supported by an information system. Instead of seeing such an exercise as simply an IS implementation problem, the phased, normal approach gives due recognition to the social processes underlying such an implementation process. It goes beyond the mere technical aspects of the information technology artefact and through its deep focus on the establishment of a network of interests, first aligned around the concept of the legislative reform, and secondly around the information system as an obligatory passage point that has to be

negotiated by all actors in the network, establishes the acceptance of the information system, its subsequent routine use and eventual contribution as technology-in-practice towards institutionalisation of the network.

*How so are the underlying logic and supporting evidence compelling?*

In Chapter 1, we discussed the context within which this research study was undertaken. The research problem was established and reviewed from three perspectives, namely, the inclusion of additional interests in a stable network of actors (human and non-human), the role of an information system as an actor and social structure and the need to provide general guidelines for the role of an information system in legislation led reform in South Africa. Three theoretical perspectives, *i.e.*, ANT, DPM and ST were adopted as lenses to analyse and interpret the results of the case study and were discussed in Chapter 2. A conceptual framework that depicted the aspects of the research problem was also discussed in Chapter 2.

Chapter 3, on the other hand, provided a review of the relevant literature which contributes to the main concept of legislation led reform. The review was done in four major areas namely: reform in general, property rate/tax reform, legislation and reform, and information systems and reform. The results of the literature review provided the research situation which informed the development of the initial framework for the analysis of legislation led reform initiatives in South Africa.

The new property rate Act (PRA) of South Africa was used as an example of legislation led reform. In Chapter 4, different research approaches were discussed. At the end, an interpretive approach and case study strategy were selected to conduct the research study. In Chapter 5, we provided the outline of the case study as well as the unit of analysis. In Chapter 6

the results of the case study were analysed and interpreted. Using ANT, DPM and ST, this was based on data collected during the case study, and any claims made were supported by quotations from the actual interviews. Conclusions drawn from the analysis and interpretation led to the refinement of the original framework of analysis, and were presented in Section 6.4 (see Figure 6.2). The proposed phased, normative approach to introduce information system support for legislation led reform, which is based on the general framework, was presented in Figure 6.3 and discussed in Section 6.4.4.

It is submitted, therefore, that the evidence supplied for the research work that has been done is sound and convincing, and that a logical progression of steps led to the results and conclusions of the research.

*How well does the research work reflect seasoned thinking, convey completeness and thoroughness?*

The research problem and the results of the case study were viewed from different angles. Different research approaches were discussed in Chapter 4 and the interpretation of the analysis was undertaken from an in-depth single-unit case study discussed in Chapter 5. ANT, DPM and ST were used as lenses to analyse and interpret the results. This last Chapter of the thesis is devoted to reviewing the research, the research questions and contributions made by the research study. This indicates thoroughness and reflection on the part of the researcher.

*How well is the dissertation written? Does it flow logically? Are the central ideas easily accessed?*

The research topic, the background to the context of the reform initiative, and the research problem were discussed in Chapter 1 and the theory

underpinning the research study were introduced in Chapter 2. Chapter 3 presented a broad, relevant literature review which informed the development of the framework used to investigate the phenomenon.

The research approach followed was discussed in Chapter 4. Here we emphasised that the major premise is the use of an information system to institutionalize the actor network to enhance stability and social order. An empirical study was done in the context of the City of Cape Town's General Valuation Roll of properties in 2000.

Chapter 5 discussed the outline of the case study which emphasized the major elements of the new Property Rates Act (PRA) of South Africa as an example of legislation led reform initiative. The Chapter also gave the historical background of why the preamble to this piece of legislation – the GenVal 2000 project at the City of Cape Town – was identified as a case study for the role of an information system in legislation led reform. It described similar initiatives in three selected African countries in order to substantiate for the need for social reform that is driven by legislation. The results of the case study at the City of Cape Town were analysed and interpreted in Chapter 6, using the underpinning theories introduced in this thesis. This resulted in the refinement of the framework for the analysis of the interactions between the reform initiator and other stakeholders.

The logical structure of the thesis, as outlined above, should facilitate access to the central ideas of the study. A serious attempt was made to ensure the logical flow of the material presented, and matters of language and grammar were specifically attended to. It is the hope of the researcher that the end result of his work, this thesis, reflects these characteristics.

*Why is this topic of contemporary interest to scholars and practitioners in this area?*

South Africa, like many African countries, is an emerging economy with the challenge of addressing social and economic inequities. Several pieces of legislation have been introduced with the view to reform and address the inequities. However, the use of information systems in implementing some of these legislations has not been considered. If it has, it has not been thoroughly researched. As such, it was important to conduct an empirical study in the context of the new property rate Act (PRA) of South Africa as a case study of legislation led reform in order to contribute to a better understanding of the process of introducing an information system to sustain the reform initiative driven by legislation across time and space.

Moreover, the need to understand the process of institutionalisation of the collective interests of role players using an information system in the context of reform driven by legislation – particularly in developing countries – has been of interest to different scholars in the area of information systems development and research. This study emphasises reform initiatives driven by legislation where the provisions and systems procedure of the legislation can be inscribed as functionality of an information system. In this way, it contributes to the discourse on a new approach to implementing reforms driven by legislation in South Africa and elsewhere.

It should be clear that the topic is of special interest to practitioners: the new PRA has been promulgated in 2004 and has to be implemented across the country. The idea of information system support for legislation led reform initiatives, however much it might be of interest from an academic point of view, has to be taken seriously by practitioners, and

studies such as this study are urgently needed to inform the implementation process.

*Who amongst academia would be interested in this topic?*

Besides the researcher, the supervisor and hopefully the external examiners of this research study, it would be of interest to academics who are involved in the development and application of information systems to effect or support change in organisations and in particular, local government structures. Working Group 8.5 of IFIP, the International Federation for Information Processing, focuses on Information Systems in Public Administration and is an international, very active grouping of academics who are interested in and actively involved in research of this type of problem.

The topic might also be of interest to researchers involved with issues of addressing ICT/IS-related initiatives for development in the global context. IFIP's Working Group 9.4, with its focus on Social Implications of Computers in Developing Countries, is an example of such an international group of academic researchers.

It is clear that the field, within which this research has been conducted, is part of an active area of research within the international academic ICT/IS community. It can confidently be stated that the topic addressed in this research will, if it is not already, become a major area of concern and further studies.

### **7.5 LIMITATIONS AND FURTHER RESEARCH**

Four limitations to this research study have implications for further research work. The first limitation is related to the fact that although the

proposed framework was developed based on the results of a case study which can be regarded as a preamble to the new property (municipal) rate Act of South Africa, the Act is yet to be implemented across municipalities. While this study has provided a general conceptual framework (see Figure 6.3 in Section 6.4) of information system support for legislation led reform, it requires further research to validate it.

The framework presented represents a generalisation from the results of the case study done at the City of Cape Town. This focused on the GenVal 2000 project, in which the City of Cape Town addressed the inequities of the past and established and implemented a new property valuation and rates policy framework. Flyvbjerg [2006] discusses five misunderstandings about case studies and points out that one of these misunderstandings is the generally held belief that one cannot generalise on the basis of an individual case. Flyvbjerg corrects this misunderstanding and argues that one can often generalise on the basis of a single case study. It depends, he says, on the case one is speaking of and how it is chosen. While we cannot argue that the case study in this research was chosen from amongst several alternatives, as a case study it does have a particular relationship to the generalised situation implied in the general framework of Figure 6.2. The new PRA, as discussed in Chapter 5 (see Section 5.4), was a direct consequence of the Grassy Park incident in Cape Town [ibid.] which in turn led to a reform of the City's property valuation and rates policy framework, which led to the GenVal 2000 project. Given these circumstances, we believe that the generalisation from the GenVal 2000 project to the implementation of the new PRA, implied in the general framework of Figure 6.2, is justified.

Nevertheless, further investigation and research during the implementation of the new PRA could be used to validate and/or refine the general

framework. The same applies to the phased, normative approach proposed as an implementation guide in Figure 6.3.

Secondly, there are limitations relating to the transferability of the results into other contexts or settings. Since the research took place in South Africa, within a set of particular set of challenges, and at the fairly affluent and very well resourced City Council of Cape Town, the methodology and the lessons learnt cannot just be transferred or replicated. Rather, in using the phased, normative approach there should be allowances for flexible thinking and action such that challenges or the unexpected can be identified and incorporated into the guidelines. The application of the proposed frameworks may need various levels of modifications in different environments or settings. This is due to the non-deterministic nature of the socio-technical systems such as users' experience and practices of property valuation, rate calculations and billing, and the use of the installed base of IT infrastructure of the municipalities. For example, the application of the findings of this research to less resourced and poorly managed municipalities may need to consider a smoother and more incremental strategy than implied in the frameworks.

Given what has been said above, further research in other municipalities and local councils, both in South Africa and in other developing countries, would add to the usability of this research. Future studies could include the detailed planning and implementation of the proposed phased, normative approach, and the assessment of property valuation and administration skills of the target communities. Furthermore, future studies could focus on the comparative differences in capacity and competency between the municipalities in each Province in South Africa and other countries and appropriately adapt the proposed approach.

A third limitation of this research is the fact that Actor-Network Theory concepts, the Due Process Model and Structuration Theory were applied in retrospect. It would be useful to follow or observe the formation of the initial network that will be negotiating the change in the rates policy framework towards reform in the other municipalities yet to implement the new PRA, how to acquire and include an information system, and apply the concepts from the onset.

A final limitation, perhaps applicable to most studies which involve organisational change, is the fact that change itself is an ongoing process. The presentation of the role of an information system in legislation led reform initiative at the City of Cape Town case does not suggest that the actors involved have stopped changing or introducing modifications.

There will continue to be capacity problems such as turnover of staff, organisational changes, and re-ordering of power structures within the municipality. During the process of writing up this thesis, different initiatives and new obstacles may have taken place at the City of Cape Town and other municipalities and/or Unicity in South Africa. Continuous development of the proposed approach and possibly minor adjustments to the framework may be necessary to increase the likelihood of its successful application. There is an opportunity to consider this research as a longitudinal study, particularly as an integration of ICT/IS and social reform models to improve community development derived from an understanding of the relative events at the City of Cape Town since 2000. In this way, continuous data can track how and where the role of an information system in the reform of rates policy frameworks is initiated, how it is being adapted and how it is impacting on municipalities' ability to improve service delivery over time.

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**Appendix 1: Interview guidelines Municipality staff**

**1. Interviewee Demographics**

- Interviewee's: Title, First Name, Position, Organization, Division, Department, Business Unit or Team, Address, Phone, Fax, Email, Immediate supervisor or /Manager
- *Career: Number of years with organization*
- *Previous positions (in organization, elsewhere):*
- *Interview Date, Venue, Duration (hrs), Language to be used,*

**2. The Case**

- a) What is your level of understanding of the New Property Rates Act (PRA)?
- b) How will you describe your role in terms of the PRA?
- c) What the role of a municipality is as defined in the PRA?
- d) What have you identified in the PRA that is different from the current property rates acts?
- e) How do you compare GenVal 2000 project with the PRA?
- f) Was the GenVal 200 project necessary as a reform mechanism?
- g) Do you think the PRA will improve rates collection? Why?
- h) Do you think the Municipalities have the capacity (i.e. personnel, structures, etc) to interpret and apply the PRA consistently? Why?
- i) Discuss how the PRA will reduce misunderstanding between Municipalities, ratepayers and valuers?
- j) What difficulties need to be overcome in order to implement the NPRA?
- k) Are these difficulties easily identifiable? How?
- l) Why have there been these difficulties?
- m) What needs to happen or put in place to overcome these difficulties?
- n) Do you think what is described in (d) above will make any difference?
- o) What is your understanding of Information System (IS)?
- p) Do you for see IS playing role in the implementation of NPRA?

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- q) Do you see IS resolving some or all of the difficulties you have highlighted earlier in the interview? How?
- r) How do you see access to the IS by ratepayers and valuers? Is it necessary?
- s) Do you see different levels of access by different roll players, e.g. ratepayers?
- t) Discuss how do you see the rollout of the provisions in the new Act?
- u) Discuss what the PRA will delivery to the communities and how?
- v) Mark the extent to which the PRA will bring property rating reform nationally (use a 3-point scale: 1 = no reform; 2 = less reform; and 3 = more reform)

Property Valuation			
Policies and procedures	1	2	3
Validity of valuation figures	1	2	3
Access to and transparent valuation procedures	1	2	3
Valuation process	1	2	3
Management of property valuation	1	2	3
Property Rates			
Rates	1	2	3
Interpretation of rates figures	1	2	3
Access to interpretation of rates	1	2	3
Management of property rates	1	2	3
Revenue base of municipalities	1	2	3
Support for PRA and GenVal 2000			
Municipalities commitment	1	2	3
Property owners and ratepayers support	1	2	3
Property developers and agents support	1	2	3
Funding to support PRA implementation	1	2	3
Infrastructure support	1	2	3

**Appendix 2: Interview guidelines Ratepayers**

**1. Interviewee Demographics**

- Interviewee's: Title, First Name, Position, Organization, Division, Department, Business Unit or Team, Address, Phone, Fax, Email, Immediate supervisor or /Manager
- *Career: Number of years with organization*
- *Previous positions (in organization, elsewhere):*
- *Interview Date, Venue, Duration (hrs), Language to be used,*

**2. The Case**

- Are you aware of the new property rate Rates policy change (PRA)?
- How much do you know about the new PRA or the GenVAI 2000 project?
- Describe briefly your current knowledge of the Rates policy change and the use of CAMA system.
- Are you in agreement with the intentions of the Government in the new Rates policy change? Briefly explain your answer.
- Do you foresee misinterpretation and misapplication of the Rates policy change? Briefly explain your answer.
- Which of the following are likely to undermine the Rates policy change?  
Property owners/Estate Agents/Valuers/Ratepayers/Municipalities
- What actions do you suggest are likely to be performed by them to undermine the Rates policy change?
- Is it possible to avoid or prevent these actions?
- What do you think should be done to avoid these actions? Explain.
- What do you suggest should be done if these actions occur? Explain.
- Do you agree that computerization of the rates poly change at City of Cape Town did improve the knowledge of the public? Strongly Agree/Agree/Don't Agree
- Has the new Rates policy change been meaningful to you as a ratepayer? Explain.

- What do you think is in the PRA for you that were different from the old property rate Rates policy change?
- Describe how the PRA will protect and manage your expectations?
- Do you think the PRA will increase rates paying net? Explain?
- Describe how the PRA will enable better understanding of property valuation and rating?
- Describe how different property rates charges could justify access to municipal services?
- Did you anticipate computerization of the rates policy change with CAMA system will ensure municipality entrenchment in the property valuation and rating business? Explain
- Do you foresee the powers of the property Agents developers being reduced by the new Rates policy change? Explain.
- Did the Rates policy change empower any individual or group of individuals to dominate in the property valuation and rating industry in Cape Town? Explain.
- Do you agree that computerization of the Rates policy change with CAMA system constrained the public and that led to the PRA? Explain.
- Will different rates policy changes as explained above led to modification of pattern of use of the computerized system? Explain
- Do you consider the provisions and procedures in the new PRA to be normal and acceptable in the property valuation and rating industry? Explain
- Do you foresee possible complaints by the public after the implementation of PRA? Explain
- Did you see IS influencing any form behaviour during and after implementation of the Rates policy change? Explain.
- Is it possible to misinterpret and misapply the new PRA by individuals to undermine the legitimized roles inscribed in the Act and the IS? Explain.

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- Did it ever occur to you that lack of conformity to the processes and procedure of the rates policy change will create new roles and re-allocation of resources? Explain.
- What other actions by individuals are likely to undermine the new Rates policy change? Why?
- Are these actions recognizable? How?
- Will lack of access to updated property valuation and taxation figure influence the intended actions of individuals?