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ICT *for* Development Reconsidered

**A critical realist approach to the strategic context in
Kenya's transition to E-Governance**

by

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A thesis submitted in partial fulfillment of the requirements for the degree
of Doctor of Philosophy in Information Systems

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List of Abbreviations

ALIN	Arid Lands Information Network
ANT	Actor Network Theory
APC	Association for Progressive Communication
CCK	Communications Commission of Kenya
CDF	Comprehensive Development Framework
CEPs	Cultural Emergent Properties
CRISP	Computerized Rural Information Systems Project
CSOs	Civil Society Organizations
DANIDA	Danish International Development Agency
DECRG	Development Economics Research Group
DfID	Department for International Development
DOI	Diffusion of innovation theory
DOI	Digital Opportunity Initiative
EDDI	Education for Development and Democracy Initiative
ERS	Economic Recovery Strategy for Wealth and Employment Creation
FDI	Foreign direct investment
FEMNET	African Women's Development and Communication Network
GCC	Government Computer Centre
GCS	Government Computer Services
GITIM	Government Information Technology Investment Management
GITS	Government Information Technology Services
HMIS	Health Information Management System ()
IBRD	International Bank for Reconstruction and Development
ICT	Information and communications technology
ICT4D	ICT for Development
IDA	International Development Association
IDRC	International Development Research Centre
IFC	International Finance Corporation
IFI	International Financial Institutions

IFMIS	Integrated Financial Management Information System
IMF	International Monetary Fund
IPPD	Integrated Payroll and Personnel Database
IS	Information Systems
ISR	Information systems research
IT	Information technology
KENET	Kenya Education Network
KEPSA	Kenya Private Sector Alliance
KEPSA	Kenya Private Sector Alliance
KICTANET	Kenya ICT Network
KIF	Kenya ICT Federation
KP&TC	Kenya Posts and Telecommunications Ltd
KPSF	Kenya Private Sector Foundation
M/M	Morphogenetic/Morphostatic Approach
MISD	Micro-Computer Services Department
MoEST	Ministry of Education, Science and Technology
MoF	Ministry of Finance
MoH	Ministry of Health
MoIC	Ministry of Information and Communications
MoPND	Ministry of Planning and National Development
MRTTT	Ministry of Research, Technology and Technical Training
NARC	National Rainbow Coalition
NCICT	National Council for ICT
NCS	National Communications Secretariat
NEPAD	New Partnership for African Development
NGOs	Non-governmental Organizations
NSE-HTG	NSE High-tech and Growth Committee
NSE	Nairobi Stock Exchange
OECD	Organization for Economic Co-operation and development
PEPs	Peoples Emergent Properties
PRSP	Poverty Reduction Strategy Papers
QCENT	Principal Factor (Centriod) Analysis

QPCA	Principal Components Analysis
SAPs	Structural Adjustment programmes
SEPs	Structural Emergent Properties
SIDA	Swedish International Development Agency
SRA	Strategic Relational Approach
SRS	Strategic ReStructuring model
SWG	Sector Working Group
TAM	Technology Acceptance Model
TESPOK	Telecommunication Service Providers Association of Kenya
TMSA	Transformational Model of Social Activity
TNCs	Transnational Corporations
UNDESA	United Nations Department of Economic and Social Affairs
UNPAN	United Nations Online Network for Public Administration and Finance
USAID	United States Agency for International Development
WB	World Bank
WSIS	World Summit on the Information Society
WTO	World Trade Organization

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Declaration

This research is my original work and has not been submitted for a degree at another university.

Some of its contents were presented at the following conferences/seminars.

1. “An Adequate Base for Theorizing E-Government Change In Africa: The Promise of Critical Realism and Complexity”, *ICEG 2006: The 2nd International Conference on e-Government*, University of Pittsburgh, USA 12-13 October 2006 – Published as conference proceedings
2. “Meeting the methodological challenges of context and subjectivity in information systems research”, *15th EDAMBA Summer Academy*, Soreze, France, July 2006

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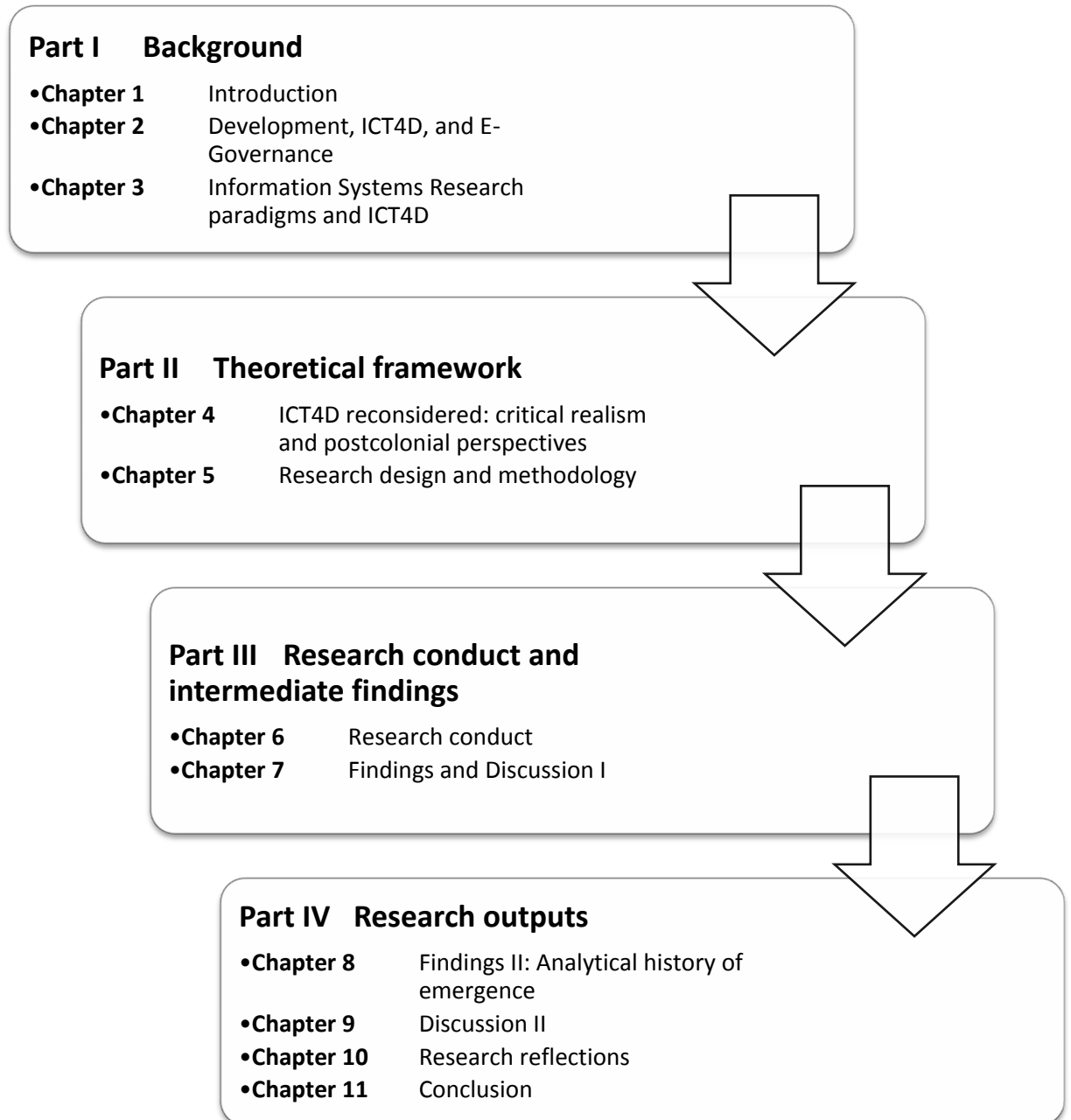
Abstract

This study contributes to critical information systems research understanding of the broader strategic context of information systems initiatives in developing countries. It investigates contextual influences with structural impacts that may lead to instabilities and discontinuities in the immediate project context using a critical realist paradigm.

It was informed by literature on development as discourse, ICT4D policy and technology transfer, E-Government adoption, and information systems research paradigms and applications in developing countries. A disconnection was observed between ICT4D policy practice that favors positivist technology diffusion models and research findings that suggest interpretive and critical contextual approaches. A theoretical framework was developed to reconsider ICT4D from a postcolonial country perspective by integrating critiques of modernity from Critical realism and postcolonial theory. An empirical case study investigation of change in Kenya's transition to E-Governance was then conducted and analyzed using a critical realist research framework, the Morphogenetic approach, supplemented by Q-methodology to study subjectivity. Finally ICT change was interpreted using critical realist concepts for structure, culture, and agency, with an overriding direction towards greater freedom.

The main research contribution is a new approach to ICT4D where change is conceived within a dialectical framework that assumes people are moral and ethical beings possessing values. Research findings have implications for understanding the strategic context of E-Governance and ICT4D, time and temporality in contextual integrative frameworks, and suggest an alternative approach to strategy analysis in situations of rapid political and institutional change. They highlight the importance of political leaders and development agencies as mediators and interpreters of the strategic context. Development was conceived as a dialectical process towards transformative praxis, which together with the suggested approach to the strategic context, may require us to rethink the meaning of IS project success or failure in postcolonial developing countries.

Thesis Layout



PART 1 BACKGROUND

CHAPTER 1 Introduction

CHAPTER 2 Development, ICT for development, and E-Governance

CHAPTER 3 Information systems research paradigms and ICT4D

CHAPTER 1 INTRODUCTION

Chapter 1 is an overview of information systems research in ICTs for development and E-Government. Key research issues are highlighted to lead up to the research problem and theoretical foundation for the study. The last section outlines the rest of the thesis.

1.1 INTRODUCTION

Information and Communication Technologies *for* Development (ICT4D) in information systems research (ISR) is a diversified field of study that investigates the relationship between ICTs and development in countries considered less developed. It is a relatively recent field for ISR that comprises studies in information and communications technologies (ICT) and development. ICT4D research draws from information systems (IS), information technology (IT), economics, sociology and anthropology. Navigating these diversified and contested fields of knowledge to produce measurable human development progress in the ‘real’ world is the challenge for ISR in ICT4D.

Emphasis on ICTs as a way out of poverty to ‘development’ by development agencies is relatively recent starting only in the 1990s. Contextual difference between the ‘developed’ world design context and the ‘developing country’ usage context is an important analytical construct to ISR in developing countries (Heeks, 2002b). E-Government and ICT4D research has explored the relationship between IS processes and their contexts using integrative interpretive and critical approaches. This study focuses on the broader context for ICT4D that has structural implications, rather the internal or immediate context that has received more attention. An attempt will be made to better understand it and its linkages to the immediate context and project outcomes.

Motivation and potential beneficiaries from the study

Experience gained in large scale public infrastructure projects financed by international development agencies sensitized me to the complexities of the Kenyan development context. It exposed to me the difficult relationship between ‘donors’ and

third-world governments, problems arising for affected indigenous communities, and the effects of grand corruption. As a 'local' participant in most cases I had no role in important strategic decisions during project conception and design but was expected to oversee their successful implementation. Most project actors and staff were trying to do a reasonable job in the midst of such problems. This study is an effort at representing what 'actually' exists, and theorize from there to understand and explain why ICT4D projects may or may not work from a broader strategic perspective.

Research findings would benefit IS research in general especially critical ISR when conceptualizing ICTs and change in developing countries. Project actors at the policy, strategy and implementation levels may benefit from a better understanding of the broader ICT4D project context and how to manage it for improved project performance.

1.2 ICT4D RESEARCH

Walsham and Sahay's (2006) survey of IS research in developing countries suggests that there is increasing production in numbers, and sophistication in methodology in comparison to a previous survey in 1995 (Sahay and Walsham, 1995). However, only few appear in premier journals like *MIS Quarterly* or *Information Systems Research*. According to Walsham and Sahay (2006) most research papers for IS in developing countries surveyed described themselves as interpretive in contrast to studies in the west where positivist studies dominate. The nature of research questions and challenges addressed would not lend themselves as well to positivist analyses. A selection of important research themes in ICT4D makes this clear. They include success and failure (Heeks, 2002b), sustainability (Kimaro and Nhampossa, 2005, Kumar, 2006), technology diffusion (Mbarika et al., 2005, Musa, 2006, Musa et al., 2005), participation (Byrne and Sahay, 2007, Puri et al., 2004, Puri and Sahay, 2007), conceptualizing the IT artifact (Corea, 2007, Sein and Harindramath, 2004), social and community applications (Rensburg et al., 2008), ICT as development strategy (DOI, 2001, Mansell and Wehn, 1998b), particular groups like youths, women, and the marginalized (Arun and Arun, 2002, Halewood and Kenny, 2008, Letch and Carroll, 2008), development and discourse (Avgerou, 2003, Schech, 2002, Walsham,

2005a). E-Government and E-Governance projects and programs are an important and highly visible component of ICT4D and are often used as case studies.

An important construct to conceptualizing ICT4D research is contextual differences between developed and developing countries (Avgerou and Madon, 2004, Heeks, 2004b, Krishna and Walsham, 2005). Secondly, developing country contexts are considered to be much more complex than are found in developed countries because of their unique historical, social and institutional characteristics (Berman and Tettey, 2001). ICT4D research therefore takes into account factors beyond a technocratic paradigm of change to include individual, social, political and economic factors not found or that are less significant in developed countries. For example Berman and Tettey (2001) explain that malformed bureaucracies may explain ICT project failures in Africa whereas bureaucracies can be very efficient in some European countries. Madon (1994) found that IS interventions in India had to factor in problems associated with development *per se*. Hence Prakash and De' (2007) encourage ICT4D policy makers and project designers to "broaden their perspectives of what constitutes development and explicitly acknowledge the importance of development contexts in influencing the outcomes of ICT4D projects." Not surprisingly, contextual and interpretive approaches that seek to develop comprehensive frameworks are common in ICT4D research.

According to Sahay and Walsham (1995), "The process of IT use in developing countries is a complex phenomenon and it typically involves actors at various levels. It is important to study the interaction of these different actors on the process of IT implementation and use". This call appears to have been met in several ways. First is the general preference for interpretive research methodologies that relate context to process. Second is a significant recent trend towards the conception, development and testing of multi-level frameworks to guide ICT4D research (Walsham and Sahay, 2006). Alvarez (2003) used a context-process perspective to develop an interpretive integrative framework to conceptualize social change in large scale information systems based on studies of public health systems in Ecuador. It relates levels of organizational complexity to the implementation process in time. Corea (2007) conceives development and technology innovation as learning to develop a behavioral

model for required competencies IT innovation for societal growth. He introduces the notion of IT artfulness as a required competency in varied interpretive schemes.

Korpela et al. (2001) propose the Two times Four Levels + History framework. It has four levels from individual to society with each level having two perspectives; internal (intra) and external (inter) relations. In addition each level has a temporal dimension (history). According to the researchers, although it improves upon other multilevel frameworks like Pettigrew's (1987) model, it still requires much theoretical and empirical work.

Sein and Harindramath (2004) reconceptualize the ICT artifact in the context of national development from three perspectives, ICT views, ICT use and ICT impact. ICT impact is assessed at three levels, primary, secondary and tertiary. They then relate impact to human development, which in their model is compatible with different development paradigms. Gerhan and Mutula (2007) tested it in Botswana in an attempt to validate it and recommend building in time and financial sustainability into the model. Other approaches that integrate multiple levels and actors include institutional theory (Kimaro and Sahay, 2007, Avgerou, 2000, Bada et al., 2004), multimethodology (Hosman et al., 2008), Socio-technical interaction network (STIN) (Letch and Carroll, 2008) and a Sensemaking Model (Muhren et al., 2008).

Gap Analysis (ITPOSMO model discussed at length in Chapter 3) evaluates design-reality gaps based on a selected set of managerial and technological parameters and is widely cited in ICT4D literature (Heeks, 2002b, Heeks, 2004b, Heeks, 2004a). It is a heuristic model to evaluate the possibility of ICT project success or failure in developing countries and give guidance on possible measures to mitigate the gaps. The design context is assumed to be the west while the usage context is a developing country, hence the gaps. Some quantitative positivist frameworks were adaptations of the Technology Adoption Model with Sen's (1999) capability approach to freedom or with socio-economic factors prevailing in Sub-Saharan Africa (Mbarika et al., 2005, Musa, 2006, Musa et al., 2005). These are discussed in greater detail in Chapter 3.

1.3 RESEARCH PROBLEM

Although ICT4D frameworks in the literature address multiple levels, different types of actors, and relationships, certain aspects merit further research. The broader context of ICT4D has not received much direct attention in research. It would include political economy and sociological factors that immediate project actors can do little about directly such as material and ideological relations between regions and countries, or between internal national actors and socio-economic factors. Their interactions give rise to specific political and institutional systems, cultures, and discourses. The effect may be to alter the whole landscape or context for national development constraining policy choice, and possibly impact significantly on financial and other material resource allocation decisions at the highest levels. Some of these would result in discontinuous rather than continuous change and would be a source of instability for the immediate project context.

Puri and Sahay (2007) after evaluating participation in community based ICT projects state that developing countries need *structural changes* because of bureaucratic functioning, colonial legacies and infrastructural constraints. Similarly, Ciborra and Navarra (2005) associate continued reliance on external resources for E-Government in Jordan with negative structural impacts. Corea (2007) states as a limitation that his framework for IT innovation for social development (mentioned earlier) does not factor in material and social conditions in developing countries like political instability and adverse market dynamics. A contribution towards greater IS researchers' understanding of this broader material and ideological context, and its impact on ICT4D outcomes would be welcome.

Researchers have put forward several proposals to incorporate time in framing ICT change. Gerhan and Mutula (2007) suggest time as an additional consideration in Sein and Harindramath (2004) model. Similarly, models by Korpela et al. (2001) and Alvarez (2003) include temporal dimensions as history and time. Both models are in their early development stages. Walsham and Sahay (2006) suggest longitudinal studies as part of the future research agenda for ICT4D. This call may be associated with calls for new epistemological and ontological perspectives that ensure history is

factored into our accounts of social transformation (Clark, 1990, Sumner and Tribe, 2004, Wallerstein, 1991). Conceptions of change as path dependence derived from complexity theory have popularized time and history in modern management theory (Merali, 2004). Any future possibilities are constrained by the present establishment, conditions, and circumstances. In developing countries these are generally considered unfavorable for rapid ICT uptake due to poverty, poor infrastructure, poor education systems and economic underdevelopment (Odedra-Straub, 1993, Heeks, 2002b). Further development in theorizing temporality for different levels and entities in social reality would add to existing models and frameworks, and to IS researchers' understanding of time and change in ICT4D contexts.

Understanding the broader context includes theorizing its links to the immediate project context and onto groups and individual actors. This entails considering ICT4D in the context of the broad variety of development discourses and schools of thought in development economics, international research institutions, development agencies, and their role in power-knowledge relations that shape the context of ICT4D (Schech, 2002). It would further examine the continued presence and role of donors, foreign technical assistance, external financing mechanisms, and discourses that according to Schech (2002) imply that the west has the key to develop the south. It may also problematize the developed-developing country dichotomy in the conception of ICT4D research, where 'developed country' usually means the west.

One suggestion by Walsham and Sahay (2006) as a way forward for ICT4D research is to investigate 'the development to which ICTs can contribute' by drawing on wider definitions of development and by seeking to contribute to associated disciplines like development and organization studies, anthropology, and sociology. Already there are studies in this direction using Amartya Sen's capability approach (Sen, 1999) as noted in several citations above. Macueve's (2008) study of e-Government in Mozambique suggested the need for mechanisms that can better evaluate individual capabilities and how they arise. Walsham's (2005a) reflections on development, ICTs and critical IS research raised important questions about the meaning of development. An exploration of alternative meanings of development or an improvement in critical ISR understanding of present ones would be useful to researchers and policy makers.

A high possibility of failure is often presumed in information systems research in developing countries especially in the public sector that forms a large portion of ICT4D initiatives (Berman and Tettey, 2001, Heeks, 2002b, Heeks, 2004a). IS failure in developing countries has been a major research theme (Sahay and Avgerou, 2002). Yet ascribing failure or success is never a clear-cut decision for it also depends on individual perspectives (Wilson and Howcroft, 2002). Development policy paradigm revisions are frequent in the aid industry following failure (Unwin, 2004, Emmerij, 2005). Given such paradigm revisions, complex contexts, material poverty, and multiple local and international actors with vested interests, project performance will likely be compromised. It would be fruitful to revisit this research theme after factoring in the broader strategic structural and ideological context.

1.3.1 RESEARCH QUESTIONS

We may summarize our research problem into three questions:

1. What is the nature and form of the broader context of ICT4D projects, its relationship to actors, organizational entities, and to project outcomes including success or failure?
2. What may development mean in critical ISR given actual practices, value systems, and the broader material and ideological context for ICT4D initiatives?
3. How is temporality manifested in ICT4D and E-Government change taking into account existing infrastructure, systems, institutions, and the ideological context for development?

These questions are closely related and may be answered through an approach that offers theoretical grounding for an integrated historical understanding of ICT4D and social change. Theoretical frameworks that integrate structural and behavioral approaches have been suggested as desirable (Avgerou, 2005, Heeks, 2005, Kallinikos, 2004, Puri and Sahay, 2007, Wilson, 2004).

1.4 PHILOSOPHICAL AND METHODOLOGICAL APPROACH

Critical Realism is a relatively recent philosophical movement arising from the realist school in philosophy of science and the Marxist tradition in social science (Bhaskar, 1978, Bhaskar, 1986, Bhaskar, 1993, Bhaskar, 1998). It was selected as philosophical foundation because it provides an alternate ontological rather than epistemological perspective on social reality. Critical realist methodologies integrate behavioral and structural aspects of social change using a dialectical perspective that may yield new insights. No specific empirical study in information systems was encountered in the literature except for suggestions in this direction for information systems in general (Dobson, 2001, Mingers, 2004b, Carlsson, 2005, Smith, 2006), and for ICT4D (Smith, 2005).

Critical realism aims at overcoming a limitation of dominant approaches identified as shared commitment to empirical realism, which is said to presuppose system closure, and consequently neglects ontology (Bhaskar, 1978, Bhaskar, 1998). Bhaskar (1978) holds that ever since Kant's appropriation of Newton's science (and with good reason then) and implied world system into *a priori* conditions for the possibility of any empirical knowledge, philosophy of science has been living in the shadow of past scientific thought. Newton in effect established a *scientific ontology*. Philosophy of Science' role was reduced to debates about "justified belief" other than giving attention to the object and practice of science (pg 44). He further argues that only with his reformulation can Philosophy of Science account for how scientists actually work. For now we only have an implicit scientific ontology, that is "what we can know to exist" as the possible content of a scientific theory, with epistemology taking precedence (Bhaskar, 1978:39).

A *philosophical ontology* would allow philosophy of science to resume its critical role about the content of knowledge by posing the transcendental question: "What must the world be like for science to be possible?" The research questions indicate a gap in knowledge of the broader context of ICT4D projects that may have structural implications that affect the whole project. Investigating deep local contextual realities and differences between 'developed' and 'developing' countries including historical,

political, ideological and economic relations requires approaches that integrate structural and behavioral factors.

1.4.1 CAUSAL EXPLANATIONS IN SOCIAL SCIENCE

Causality and its implicit understanding in a given account of social change are central to its value as knowledge and in practical interventions. It may lead us to wrong conclusions or actions if implied relations between a cause and effect do not hold. According to Cartwright (2004) there may exist many different forms of causation, some are 'thick' while others are 'thin' causal concepts. Listing six that claim universality, she argues that the word 'cause' is only as good as the assumptions we make when using it, which makes formalisms important to scientific explanation. We may thus appreciate Markus and Robey's (1988) concern in urging greater clarity in causal structures implied in IT and organization change research to avoid improperly specified models. ISR frequently requires us to theorize structural and behavioral aspects in integrative models, which raises important question about implicit causal structures and their specification.

Explanation in social science varies in purpose from prediction to understanding (Archer, 1995). Two dominant philosophical accounts of causality are the covering law model and the empiricist theory of David Hume. Humean empiricism is also termed the succession view of causality, or constant conjunction of events (Bhaskar, 1978). Causal conclusions are drawn from observing a succession of events where cause and effect are considered as independent objects, any relation they may have is external to causal attribution. The deductive-nomological explanatory model (or 'covering law model') is the foundation for positivism. Universal laws (usually probabilistic) are formulated from observations of empirical events, and that may then be used to predict individual empirical events. Their validity as causal explanations is directly linked to their predictive power (Caldwell, 1994, Ekstrom, 1992, Friedman, 1966).

1.4.2 GENERATIVE CAUSATION AND CRITICAL REALISM

A generative view of causation differs in important ways from the two dominant perspectives. Generative causation rejects the independence of cause and effect implied in Humean empiricism and is interested in their 'internal interrelatedness' (Ekstrom, 1992). This is analogous to explaining how cause leads to effect in the physical and biological sciences. Investigations into how the human body functions require causal explanations that best account for each and every entity, their relations as natural necessities, and processes and effects at the biological, the chemical and even physical levels (Machamer et al., 2000).

Critical realism is founded on a critique of Humean empiricism and recognition that the deductive-nomological explanatory model retains a Humean empiricist account of social reality. Critical realism assumes things in social reality have causal powers, explained in Ekstrom (1992) as "the structuration of capacities to act and bring about change in reality". Causal explanation lies in identifying these things, termed generative mechanisms, and their causal powers to account for empirical observations. In the case of neurobiology and neuroscience, Machamer et al. (2000) explain that "Mechanisms are entities and activities organized such that they are productive of regular changes from start or set-up to finish or termination conditions."

Empiricism implies an atomistic mechanical world, while positivist explanations imply a social reality that consists of a mass of separable events that may be evaluated through probabilistic deductions (Ekstrom, 1992). In critical realism reality is usually conceived as an open system, with social entities existing in contingent dialectical relationships. It is stratified such that higher levels are emergent from lower ones but cannot be reduced to them. Explaining events and empirical observations in such systems requires that we identify generative mechanisms that would give rise to the observations. Because we cannot reduce one level into another in such explanations, there is an 'ontological gap' between natural necessity and contingent relations. Causality in open systems is therefore evaluated as 'tendencies'. This means that causal powers may be present for a given generative mechanism but are not always

exercised; their actualization and effects are in most cases context dependent and are evaluated as such (Collier, 1994, Ekstrom, 1992).

Human motives and intentions are an important causal mechanism to explanation in social systems. Human actions influence the social system, which is also a source of certain desires and intentions in people by supplying them with reasons. “The reconstruction of the mechanisms and structures whereby social entities are interwoven - of how they are constituted in relation to one another - can in fact be seen as the very essence of a causal-explanatory social science.” (Ekstrom, 1992) A good example is Weber’s *The Protestant Ethic and the Spirit of Capitalism* (Weber, 1992), which according to Ekstrom (1992) contributed to the generative view of causal explanation in social science. He interprets Weber’s argument linking the emergence of capitalist society and rationality to the protestant ethic on the basis of generative causation. Starting with general observations from quantitative correlations between occupation, religion, and the emergence of Protestantism, Weber came up with forces in society and individuals that were *critical* to explaining observed patterns.

With this perspective on social reality Critical realism can serve as a philosophy for both the physical and social sciences. It also sustains the interpretive and critical research agenda by incorporating meaning and human interpretations in societal analysis (Smith, 2006). There are important differences in their accounts of contingency and social ontology since poststructuralism generally eschews ontology (Dean et al., 2005). Further explanation of its relation with poststructuralism and postmodern philosophies that inform some interpretive approaches are discussed in Section 9.3.2.

Critics have taken issue with the rather dismissive approach of certain proponents and arguments of critical realism especially against positivism. In practice most researchers are careful to specify the limitations of their works and do not fully subscribe to a Humean perspective on social reality (Kemp and Holmwood, 2003, Nash, 2004, Monod, 2004). Objections to critical realism and philosophical issues concerning its account of social ontology and applications in social science research

are discussed at the end of the main discussion in Chapter 9. Critical realism does make researchers more aware of implicit assumptions and ontological commitments as has been suggested for better theory building (Cartwright, 2004, Markus and Robey, 1988).

1.5 CRITICAL REALISM IN ICT4D RESEARCH

Critical Realism advocates a non-reductive evaluation of human agent interaction using objective social system constraints and enablements to generate a rich picture of emergent social reality for theory building. Change in social systems occasioned by ICTs in developing countries would be conceived as occurring in real, stratified, open systems in history. Important to this study is human freedom (and emancipation) that is a principal axiom within Critical Realism. Smith (2005) strongly suggests that critical realism can resolve the sort of theory-practice inconsistencies found in ICT4D practice, and that its notion of causality allows the quest for ‘why’ that often arises in information systems. Inconsistencies in research “are disjunctures between researchers’ stated (or implicit) ontological assumptions and research practice and results.”(Smith, 2006) Positivist and interpretive empiricist notions of causality may not admit important development related factors into ICT4D analysis:

If there is nothing objective and knowable outside of human subjectivity (or intra-subjectivity), then an ICT for development researcher must deal with the intuitively and empirically contradictory position that research cannot incorporate situations and concepts like poverty, social inequality, and power relations as objectively real and in some way causally efficacious phenomena (Smith, 2005).

Clearly this is an untenable proposition for any development related research or intervention. Sumner and Tribe (2004) make a similarly strong case that development studies phenomena have different ontological statuses. They range from the sociological to the technical, (e.g. poverty and engineering) which creates difficulties of location between positivism and constructivism; and of measurability for positivism, as it frequently relies on proxies. They too propose realism as a middle ground to achieve rigor in development studies research. Realism would show logical linkages from one end to the other, and balance bias and subjectivity by allowing for

mixed methods (Mingers, 2004c) to lead onto intellectually defensible choices. Rigor is attained via making explicit reflective choices in research methods to make independent evaluation possible.

Researchers have associated critical realism with Complexity theory as providing complementary perspectives on social reality (Byrne, 1998, Harvey, 2002).

Complexity theory has challenged common perceptions of the world including development studies by undermining established epistemological certainties and creating awareness of the ubiquity of non-linear dynamical systems and emergence in natural systems (Anderson et al., 1999, Rihani, 2002, Rihani and Geyer, 2001). Its implicit critique of positivism has yet to filter into mainstream academia and is at times presented as simply another fad in business studies (Maguire and McKelvey, 1999, Horgan, 1995). Nevertheless, occasional real world catastrophic failures such as the Long Term Capital Management¹ (LTCM) hedge fund remind us that overt positivism is a dangerous fallacy (Lissack and Richardson, 2001). Leading proponents for critical realism and complexity theory have expressed hope for a possible “re-enchantment” of nature from bridging the gap between the humanities and the sciences (Archer, 2000, Horgan, 1995, Prigogine and Stengers, 1984).

For us to validly use critical realism it is necessary to investigate the nature of development as a phenomenon in international relations and ICT4D contexts in developing countries. Critical realism positions itself outside of current oppositional debates in philosophy of science by critiquing basic premises. Published works will therefore be read from multiple perspectives to mitigate interpretative bias.

1.6 THESIS OUTLINE

This thesis is organized into four parts: Background, Theoretical Framework, Research Conduct and Intermediate Findings, and Research Outputs, with each comprising a few chapters.

¹ LTCM – A massively leveraged hedge fund founded and ran by a team that included two Nobel laureates in economics. Its trading strategy was based on positivist assumptions of market equilibrium (FER (1999) Statement on Long-term Capital Management and the Report of the President’s Working Group on Financial Markets. *The Financier*, 6, 6-9.)

The Background comprises this introduction and literature review to highlight key issues and frame the study for a critical realist research methodology. Since critical realism requires deep knowledge of underlying issues and their causal linkages to explain observations and events, it extended into areas well beyond information systems into history, development economics, postcolonial theory, and global governance. In Chapter 2 I outline the current status in the theory and practice of development, ICT4D and development discourse, and issues in E-Government adoption. This is followed in Chapter 3 by a comparative review of contemporary information systems research paradigms with reference to ICT knowledge and technology transfer from the ‘developed’ to the ‘developing’ countries. Critical realism is identified as a promising alternative in ICT4D research and practice.

Part II Theoretical Framework starts with Chapter 4 where I present a more complete overview of the critical realist movement in philosophy of science, and a postcolonial critique of modernity to make the case for a reconsideration of ICT4D from one postcolonial perspective on knowledge. Critical realist research methodology and design is presented in Chapter 5 for an intensive case study design supplemented by Q-methodology, a technique for the scientific study of subjectivity.

Part III is Research Conduct and Intermediate Findings. Field research was done over four months as a case study of the historical evolution of Kenya’s public ICT until E-Governance today. I present its conduct and data analysis as a two stage process for the case study (Part 1) and Q-methodology (Part 2) in Chapter 6. Chapter 7 presents intermediate research findings and a discussion from both parts in readiness for the analysis of emergent change.

Part IV is Research Output, collectively comprising the main findings, discussions and conclusions. The main output from data analysis is presented in Chapter 8 which is an analytical account of the change process using critical realist principles. Chapter 9 is the main discussion of findings from the analytical account in Chapter 8. It provides new perspectives on the broader strategic context of ICT4D and E-Governance initiatives, time and transformational decisions, the meaning of development in information systems research, and the success-failure criterion in

developing country contexts. Philosophical issues and limitations of Critical realism in social science research are highlighted at the end to contextualize the findings in existing paradigms. In Chapter 10 I reflect on the research process and findings to draw valuable lessons from methodological issues encountered in the course of the study. It covers methodological and practical issues arising from the research constructs, frameworks, tools employed, and an assessment of research validity. The conclusion in Chapter 11 summarizes the thesis and findings and implications in response to the research questions. It ends with a discussion of research contributions and suggestions for further research.

CHAPTER 2 DEVELOPMENT, ICT4D, AND E-GOVERNANCE

Chapter 2 reviews the current status, thinking, and practice of development, ICT4D, and E-Governance, together with an evaluation of the international ICT4D policy dialogue between developed and developing countries. It includes a discussion of issues and factors important to E-Government adoption in developing countries in the literature.

A note on terminology

The following terms development/ underdevelopment, developing/developed country, third-world/first-world, and the west, should be read with awareness of their usage in structuring discourses as they may mean different things to different people. For the same reasons, the term *tricontinental states* adopted in 1966 at a conference of Asia, Africa and South America in Havana, Cuba, is preferred by some postcolonial writers when referring collectively to postcolonial nation states in these continents (Young, 2001, Cabral, 1966b). It shall be preferred whenever possible. The term Europe whenever used in most cases includes North America and other parts of the world that share its genealogical, intellectual, historical and cultural heritage (Roberts, 1995), generically termed the west .

2.1 ‘DEVELOPMENT’ AND DEVELOPMENT POLICY

Development has been the most notable policy goal over the years for tricontinental countries, many of which gained independence from European nations after the Second World War. Like the agrarian (1000 BC – 1800s) and industrial (1800 – 1950) revolutions, Mowlana (1997) holds that the information revolution (1960 – present) is similarly transformative. ICTs have a central place in the pursuit of development since ICT discourse is strongly associated with the linear time-based modernity discourse, while ICT implementation is associated with modernization

(Mowlana, 1997). ICT also reflexively shapes development discourse when instrumentally linked to knowledge as power (Thompson, 2004).

Wallerstein (2004) explains that the original meaning of the term ‘development’ was “to exploit, draw profit from” the colonies by European powers. After World War II it took on new meaning as the present development phenomenon founded on economic principles to assist newly independent tricontinental countries attain industrialization and higher standards of living. It became the ideology of *developmentalism* when the new states came to believe that they could develop themselves through appropriate policy choices (Wallerstein, 2004).

The International Bank for Reconstruction and Development (IBRD), better known as the World Bank², was started to help reconstruct Europe after the war. Later it found new purpose spearheading ‘development’ across the globe. Together with the International Monetary Fund (IMF) and World Trade Organization (WTO) they wield enormous power over ‘developing’ nation-states and their ideological orientation at any time greatly influences global development policies (Broad, 2006). For these reasons much of the discussion on development policy and practice will be centered on these institutions, collectively termed International Financial Institutions (IFIs).

According to Dow and Dow (2005) the preferred model of development has generally been modernist in outlook based on rational models of economic growth. Rostow’s (1960) liberal capitalist development model with five stages from traditional subsistence to modern consumer societies is widely cited. Policy emphasis in the form of development paradigms has changed over the years ranging from modernization to structural adjustment in 1980 (Emmerij, 2005). Initial focus was on large infrastructure projects like dams and irrigation, later followed by social projects in education and healthcare. Impressive gains in Agriculture, primary healthcare, and basic education were recorded in the 1950s and 60s from the wider application of basic technologies like fertilizers, mechanization, and immunization. Some of these were reevaluated with increased global awareness from lobbying and advocacy by

² The World Bank Group comprises IBRD and International Development Association (IDA). It has three affiliates that provide more specialised services especially for the private sector. IDA gives *concessional loans* to eligible developing countries that are the main form of ‘aid’.

civil society and human rights groups on negative impacts. Issues like environmental destruction by large infrastructure projects, intensive farming and subsequent loss of biodiversity, and the rights of indigenous peoples displaced by large projects have tempered previous enthusiasm for ‘development’ (Caufield, 1998).

With the rise of liberalism (small government, macro-economic stability, free markets, termed the Washington Consensus) in the late 70s in the west (Britain’s Margaret Thatcher and US’ Ronald Reagan), neoliberal positive economics came to dominate development analysis (Friedman, 1966, Fine et al., 2001). For the tricontinental countries it culminated in the Berg Report of 1981 *Accelerated development for Africa: an Agenda for Africa* that instituted it as the solution to ‘developing’ through Structural Adjustment Programmes (SAPs). ‘Aid’ disbursements to developing countries henceforth were made conditional upon sticking to highly specified IMF and World Bank policy and structural reforms, targeted towards market liberalization and the privatization of state enterprises.

The World Bank in its 1980 World Development Report ‘officially’ signalled the end of the long-running definition of development as nationally managed economic growth. Henceforth, ‘development’ would measure the extent of participation in and integration with the world market. The notion of ‘reform’ was also rewritten to erase any connotation of income redistribution or agrarian reform, to signify the extent to which market mechanisms should be given free rein (Munck, 2000).

SAPs effectively reversed the drive to industry by again encouraging primary commodity exports on the basis of the neoliberal argument of comparative advantage (Pender, 2001).

‘Good governance’ was added to aid conditionality in the late 1990s. Critics have presented the resultant scenario as the vain pursuit of theoretical ideal states designed by WB/IMF ‘experts’ for aid recipient countries (Grindle, 2004, Mbembé, 2001). Funded public ICT initiatives would be required to meet new standards for *transparency* and *accountability* as part of the good governance agenda adopted by leading development agencies (World-Bank, 2005, Ciborra and Navarra, 2005). ICTs

importance to monitoring and control for better governance make them an important rallying point for developmentalism.

By the 1990s there was a major crisis of confidence in WB/IMF policies. The record in transforming economies from dependence on primary products to industry was mixed with only a few Asian countries attaining a newly industrialized country (NIC) status by the 1990s. A Bank report *The East Asian Miracle* of 1993 undermined its own free market policy prescriptions when it acknowledged the positive effects of some active state intervention in the market (Pender, 2001). This was a shift from neoliberal orthodoxy towards the emerging New Institutional Economics that considers the role of institutions and social norms in economic theory (Cameron, 2004).

Acceptance in principle that markets can fail paved the way for reform minded President James Wolfensson and Chief Economist Joseph Stiglitz to make fundamental changes to its vision for development in a globalizing capitalist world. Subsequent ideological battles within the Bank resulted in measured policy changes to accommodate criticism over SAP failures and the Asian currency crisis of the late 1990s (Wade, 2002).³ Wolfensson and Stiglitz integrated the ideas of social capital and neoliberal economic growth into the *Comprehensive Development Framework* (CDF) as the new vision for development (World-Bank, 2004, Stiglitz, 1998).

The Comprehensive Development Framework, then, is precisely what it says it is—a blueprint for a complete set of social and governmental relations and institutions, founded on macroeconomic discipline and extending across a range of economic and social policies without parallel in the depth and intensity of intervention they implied in the affairs of supposedly sovereign states (Cammack, 2004).

CDF is presented as a set of four principles that embody values desirable to the Bank: Long-term, holistic vision, Country ownership, Country-led partnership, and Results focus (World-Bank, 2004). In line with this vision, the bank strategically incorporates

³ These battles finally led to Joseph Stiglitz's firing in 2000 and the resignation of Ravi Kanbur, appointed by Stiglitz to head the World Development Report 2000, both apparently at the instigation of the US treasury. – WADE, R. H. (2002) US hegemony and the World Bank: the fight over people and ideas. *Review of International Political Economy*, 9, 215-243.

civil society and the private sector in the drive towards participatory development processes to increase ‘social capital’.

The major policy implication arising for developing countries was a new requirement to develop *Poverty Reduction Strategy Papers* (PRSP) that operationalize the principles of CDF.⁴ As policy tools PRSPs are a great improvement over SAPs in sensitivity to development contexts. They may however embody a fundamental contradiction between country sovereignty and the bank’s supervisory role. It is required they be developed in a participatory process and country owned, but to also provide a policy matrix ‘summary management tool’ for ongoing WB/IMF supervision (Cammack, 2004). According to Cammack (2004) country ownership, is necessary for governments to implement the strategy and to legitimate it vis-à-vis the citizenship and the international community. ICT4D initiatives in the tricontinental countries are hatched and executed within these spaces of opportunity and contradiction in development discourse and practice.

2.1.1 CRITIQUES OF ‘DEVELOPMENT’

Development and its associated institutions that Hancock (2004) pejoratively terms ‘Development Incorporated’ have been criticized in the popular press as perpetuating rather than reducing poverty and inequality (Caufield, 1998, Hancock, 2004, Rivero, 2001). I shall outline two critiques of development relevant to this study, political economy and postcolonial studies. For our purposes ICT4D research is informed by information systems research and development studies. The political economy critique stays within established frames of reference for economic analysis. In contrast, postcolonial literary studies constitute critical reviews and interpretations of the post-independence settlement. They explicate emergent identities and cultures to touch on and problematize received epistemologies and ontologies. Some critique development from its ‘exteriority’ by posing positions outside of modernity (Dussel, 2002). We shall first consider the political economy critique.

⁴ PRSPs are also used by the WB/IMF to assess whether countries qualify for the Highly Indebted Poor Countries Initiative (HIPC) for debt forgiveness program that emerged at about the same time.

Political economy critique

Distributional and equity issues from a Marxian and historical political economy perspective have for long constituted the most important critiques of developmentalism (Rodney, 1972, Leys, 1975, Rupert, 2000). Under colonialism and neocolonialism, European nations are said to have systematically underdeveloped today's poor countries (Rodney, 1972). Wallenstein's (1991) sociological critique of capitalism is closely associated with the Latin American dependency school (Ruccio and Simon, 1992). Both use a system theoretic approach to conceptualize the capitalist economy as a World System in historical time to explain the continuity of economic imbalances. His most innovative extension beyond western episteme was the notion derived from Gunnar Myrdal that capitalism requires and generates an 'understratum' in the form of reserve labor in third world countries to cushion the capitalist system from normal ups and downs and afford it flexibility.⁵ Development under liberal capitalism would thereby be more of an illusion sustained through developmentalism as discourse. Evidence from state led Asian 'tiger' economies⁶ and Japan supports interventionist states that curb large corporations so that producers keep the surplus (Wallerstein, 1991, Pender, 2001).

An additional and increasingly important source of criticism is campaigns by anti-globalization Non-governmental and civil society organizations. Official development assistance from developed to developing countries has had to contend with determined campaigns like the *Jubilee 2000* and *50 Years is Enough* that seek debt forgiveness and are calling for IFIs to be abolished.

Critics also take issue with the concept of social capital as employed in the new CDF approach to development. Fine (2001) accuses the bank of selective appropriation of social capital literature by relying on James Coleman's *functional* definition and Gary Becker's extensions to all spheres of human life as 'economics colonizes sociology' (Archer and Titter, 2000). Pierre Bourdieu's more critical, contextual and ultimately

⁵ This 'understratum' may be expanding in the west and developing regions as a 'fourth world' of 'failed humanity' while multinational corporate profits hit record levels. See CASTELLS, M. (2000a) *End of millennium*, Blackwell Publishers. and also SCHWARTZ, N. D. (2003) Down and Out in White-Collar America Professionals have never had a tougher time finding a job. It's not just the economy; the rules of the game are changing. *FORTUNE*.

⁶ See earlier discussion of World Bank report *The East Asian Miracle* in Section 2.1.

Marxian take on social capital is ignored. Fine further expounds on the non-trivial measurement problems arising from social capital model specification, multicollinearity, multiple variables, and linearity assumptions. Similar criticisms on the limits of the underpinning Rational Choice Theory are leveled by contributors to the compilation in Archer and Tritter (2000).

IFI's appear to have difficulties when dealing with criticism of the core tenets of neo-liberalism as Toussaint's (2004) exposition of a speech by then IMF First Managing Director Anne Kueger (Krueger, 2003) illustrates. In a rather simple and straightforward but damning analysis, he finds her defense of globalization and corporate interests in the name of helping the poor as simply untrue, and in many cases self-contradictory. The seemingly credible charges of intellectual dishonesty leveled at the World Bank by Fine (2001) and the IMF by Toussaint (2004) raise serious questions of an ideological nature. It would appear as has been proposed that paradigm maintenance in development policy by IFIs and by extension the US Treasury, supersedes all other concerns (Broad, 2006, Wade, 2002).

Yet what appears as neoliberal intransigence on development policy may stem from a different perception of inequality by classical and neoliberal economists. Inequality is not a 'problem' in classical liberal thinking, rather it is said to arise from natural differences in endowment (Mises, 1985). Inequality is desirable in capitalist systems for it provides incentive for enterprise. Communist and socialist policies that equate persons materially are assumed to kill incentive for human enterprise or creativity. The rise of neo-liberalism was accompanied by the regression of Keynesian economics in the west that advocated government management of the economy. It is this more extreme version associated with Ludwig von Mises, Frederick von Hayek and Milton Friedman and the Chicago School of economics (Friedman, 1966) that Margaret Thatcher and Ronald Reagan took up in the 1980s, and that continues to shape IFI's economic and development policies. The collapse of communism and China's enthusiastic embrace of capitalism would have strengthened their hand. It becomes clear that the gulf between neo-liberal economics advocates and those advocating for some form of redistribution in economic policy is primarily

ideological and *ethical*. Each position embodies certain values that would lead onto different approaches to development.

Constructivism in international relations too has come in for some criticism though its advocates are associated with progressive liberal ideas in economics, human rights, and minority rights (gender, racial etc.) advocacy. Landolt (2004) discusses three constructivist texts on international relations that analyze the diffusion of the western liberal norm, including how poverty fighting became a moral requirement for richer nations and institutions such as the World Bank. She finds that they tend to censor material factors during explanation in order to demonstrate that ‘norms matter’ on the belief that social factors determine material interests. Excluding or downplaying the possibility of structural influence from material interests and power relations on norm diffusion keeps their findings firmly within the boundaries of the neoliberal agenda of minimal government and free markets. She proposes the inclusion of both social *and* material factors in analyzing norm diffusion in international relations.

Landolt (2004) further argues that constructivists focus on elite socialization at a global level, downplaying domestic material factors and political processes. Another consequence is to obscure ongoing North-South struggles over the international distribution of wealth, and that influence norm diffusion. Consequently she concludes that constructivists cannot fully explain instances of successful norm diffusion.

Postcolonial theory critique

The postcolonial critique of developmentalism draws from ‘third world’ literary writers and postmodern philosophers to provide alternative visions of development. Arguably the mission to ‘save’ and ‘civilize’ others has been the western world’s conscience for several centuries through the beneficial intermingling of religious, commercial and imperial interests (Coquery-Vidrovitch, 1988, Thiongo, 1996). Academic disciplines and industries today flourish around the ideas ‘postcolonial’ and ‘development’ where ICT4D may be located. A pertinent question would be, on

whose behalf are the proponents of development speaking or acting? Spivak's (1988) famous question 'Can the *subaltern* speak?' is a fundamental one.⁷

'Third-world' writers prefer to read it through historiography, closer to Antonio Gramsci's original Marxist class based appropriation of the term 'subaltern' (Chakrabarty, 2000). It may be rephrased as: Does the subaltern in the tricontinental countries have voice in ICT4D? It is contemporary as these seek to redefine their relations with global institutions of governance to recover agency and begin participating in history. This aspiration is captured in the case of Africa:

The African continent and its people occupy a 'subaltern' position in global politics where voices from the African continent remain on the peripheries of global governance. Since the Human Rights Council is envisaged to be a forum for dialogue on thematic issues on all human rights, Africans need to seize the opportunity to be heard, rather than remaining as a problem to be solved... It calls for the African continent to transcend its current 'subaltern position' in international relations and make its voice heard within global governance. (Ndlovu-Gatsheni, 2007:3)

Why do the tricontinental countries lack voice on the international arena decades after attaining independence? The postcolonial critique of development links the large body of postcolonial literary writings to actual development policy in addressing this question. Sylvester (1999) illustrates in one sentence from Appiah (1991) the everyday nature of the development studies/postcolonial literary critique dilemma.

'Despite the overwhelming reality of economic decline; despite unimaginable poverty; despite wars, malnutrition, disease, and political instability, African cultural productivity grows apace: popular literatures, oral narrative and poetry, dance, drama, music, and visual art all thrive'. Remove the word 'despite', and end the sentence after 'instability', and one has a capsule statement of the types of issues that occupy development studies. Put 'despite' back in, and fast-forward to the second half of the sentence beginning with the word 'African', and some sources of postcolonial studies' interest in the 'Third World' are highlighted.

⁷ Gayatri Spivak is often noted for her opaque poststructuralist writing style. In SPIVAK, G. C. (2005) *Scattered speculations on the subaltern and the popular. Postcolonial Studies*, 8, 475-486., she reflects "I think disapprovingly on the subaltern's entry into history" for to her 'Subalternity is a position without identity'.

Both fields ought to be considered together since “development studies does not tend to listen to subalterns and postcolonial studies does not tend to concern itself with whether the subaltern is eating” (Sylvester, 1999); an eloquent expression of the schism Sumner and Tribe (2004) identified in the epistemology and ontology of development studies. Today, there is a move to bring the two closer and operationalize long dormant critiques and reformulations where development meets postcolonial discourse (Sylvester, 1999). According to postcolonial critics policies founded on putatively objective development economics conveniently elide colonial and imperial history in political economy discourse and to institutionalize neocolonialism (Biccum, 2002, Matthews, 2004). Postcolonial theory’s response to misrepresentation has so far been confined to literary fields, but it is now “interrupting the discourse of development” (Biccum, 2002, Nustad, 2001, Munck, 2000, Escobar, 1995).

Escobar’s (1995) pioneering Foucauldian deconstruction study of ‘development’ showed that as an institutionalized and professionalized practice, it invents its own problems, disciplines, and study programs dedicated to the ‘Third World’, essentially for its own self perpetuation through powerful discursive strategies. He shows how in the case of women in development it proceeds as discursive formation, professionalization and institutionalization. In the long run human subjects (such as poor or peasant women – Spivak’s (1988) *subalterns*) become invisible and are disempowered in the de-politicized discursive space.

In reaction to modernity and developmentalism there are many calls for alternatives to development, *post-development*, or for substantive reforms. But coming up with alternatives that are not in some way related to, or that simply reflect, western frames of reference is a big challenge (Matthews, 2004, Pieterse, 1998, Ziai, 2004). The search for authentic or originary traditional forms not ‘contaminated’ with coloniality and modernity by postcolonial development thinkers is a difficult one to say the least. Mudimbe’s (1988) *The Invention of Africa* demonstrates the difficulty of defining present Africa apart from colonialism and its accompanying army of anthropologists and ethnographers, many of them amateurs, upon whose representations, whether

good or bad, the present must be read. As he states in another paper *Globalization and African Identity*:

"All utopias of a unitary field of knowledge have become suspect. Diversity is not only a fundamental component of life but a major perspective on both our identities and our knowledge. We are, all of us, *métis*. Thus a fundamental element of our present situation and our major difficulties is a need to negotiate universalization and particularization." (Mudimbe, 2003)

This is only one position and may have overstated the case. But it demonstrates the dilemma and centrality of identity in the postcolony when conceptualizing 'development' and its possibilities. These will be considered at greater length in Chapter 4 when reconsidering ICT4D 'from the margins' of modernity.

ICT *for* development is conceptualized and practiced in the context of ideological and theoretical contestation amidst the search for firm postcolonial identities. Researchers ought to be cognizant of contemporary debates and of "turning points in development thinking" at which 'development' takes on new meanings (Emmerij, 2005). Having considered the broader aspects of 'development' as a modern phenomenon, in the next section we explore ICT4D and E-Government and their defining issues in the literature.

2.2 ICT4D AND THE E-GOVERNMENT IMPERATIVE

There is near universal consensus on the efficaciousness of adopting ICTs in the whole world including developing countries (Avgerou, 2003). ICT4D and E-Governance are widely championed by international development agencies as important avenues out of poverty for faster integration into the modern global economy. It is frequently cited as a major opportunity for them (Mansell, 2002) and in the public sector, E-Government is associated with good governance (CAFRAD et al., 2003, Grindle, 2004). A high point in the formation of this consensus was the G8 summit in Okinawa in the year 2000 when the G8 leaders adopted the Charter on the Global information Society and established a public-private partnership, the Digital Opportunity Task Force (DOT Force), to champion ICT globally. It resulted in *Digital Opportunity Initiative* (DOI, 2001), a report that put ICT at the heart of

development. ICT was recognized as an *enabler* development beyond the traditional conception of ICT initiatives as stand alone infrastructure projects, now they would be evaluated in the context of broader development goals. The report underlined ICT as a major contributor to fighting poverty and to achieving the UN Millennium Development Goals.

In 1995 the World Bank established the *InfoDev* programme with funding by several countries to promote ICTs in ‘developing’ countries and contribute to the fight against poverty. Its 1998 World Development Report was titled *Knowledge for Development* with the bank repackaging itself as “The Knowledge Bank” (King, 2002).

International development agencies were quick to take the cue. The United Nations (UN) established the UN ICT Task Force that organized the *World Summit on the Information Society* (WSIS) in Geneva (2003) and Tunis (2005). WSIS drew in civil society organizations (CSOs), non-governmental organizations (NGOs), and the private sector on an unprecedented scale to shape the global agenda in collaboration with governments. Broad-based participation and inclusiveness assured that a positive ICT message percolated downwards through government officials, CSOs and NGOs to the grassroots. It also brought to the fore the importance of rights based advocacy networks to future ICT developments in tricontinental countries (Mueller et al., 2007). The United Nations Online Network for Public Administration and Finance (UNPAN) third *Global Forum on Re-inventing Government* in 2001 centered on E-Government; UNPAN also maintains the UN *E-Government Knowledge Base*. With such high level attention, the pursuit of ICT4D and E-Government becomes imperative for national legitimacy in the international arena (Mansell and Wehn, 1998b, Stoltzfus, 2005).

2.2.1 INTERNATIONAL ICT4D DIALOGUE AND DISCOURSES

The relationship between the developed and developing countries in ICT4D and technology transfer requires an appreciation of associated discourses. It will help us understand observed trends in ICT4D and E-Governance, and E-Government adoption in developing countries. Contributions to Olsson and Wohlgemuth’s (2003a) study on development dialogue indicate that development policy dialogue

favors richer nations (Edgren, 2003). It has not been successful in Africa where in the 1990s development policy was increasingly made to ‘please donors’ thus increasing aid dependency (Heijden, 2003). Over the 1990s technologically advanced countries formulated national ICT policies and strategies to guide its exploitation. By the start of the new millennium tricontinental counties joined in with assistance from western countries, international development agencies, and international civil society organizations with different policy emphases. Because this information revolution took place at a time of rapid change in development policy as outlined in Sections 2.1 to 2.2., the ICT4D policy dialogue process ought to be understood in the context of broader reforms in addition to its immediate technical computing and telecommunications aspects. ICT for development dialogue is therefore a contentious topic with strong vested interests.

Two discourses are especially important to shaping, and possibly sustaining inequalities in the developed-developing country ICT4D policy dialogue: ICT and *poverty*; and the *digital-divide*. Both should be read in the context of the earlier discussion of development and developmentalism. They illustrate the complexity of making sense of ICT *for* development in a world with many players, groups and interests.

ICT and poverty

The ‘war on poverty’ spearheaded by the World Bank is the most visible and arguably successful discursive strategy in development practice. According to Escobar (1995) it led to a massive expansion of its ‘poverty fighting’ strategies and lending programmes⁸, accompanied paradoxically by an increase in poverty. Escobar (1995) and like minded critics attribute this paradox to the absence of any real intention to do anything about poverty except as part of discursive strategies that perpetuate dominant power relations and resource distribution patterns. ICTs would then be construed as only the latest fashionable ‘weapon’ against poverty. McNamara’s (2003) recent review of ICT4D global practices for the World Bank backed *InfoDev*

⁸ The ‘third-world’ debt crisis discussed in Section 2.1 that necessitated SAPs may be traced to these programmes.

ICT4D program acknowledged that poverty-ICT links were complex, requiring a multifaceted approach.

‘Poverty fighting’ involves the promotion of intermediate advocacy groups between citizen and state (participation in CDF approach) that raise the demand for good governance. Ultimately they reduce the role of central governments as they pursue ‘alternative’ non-government solutions (McNamara, 2003). Therefore while the bank legally can only deal with governments, at the same time it may come across as undermining their legitimacy through such advocacy. Digital ICT internetworks and personal networks are central to facilitating these links.

Advocacy for the poor is divided between the dominant perspective of leading development agencies and of left leaning social activists and movements. Pithouse (2003) compares a World Bank report *Voices of the Poor* on poverty to a contemporaneous report by a social activist Ashwin Desai *We are the Poors* that evaluates poverty post-apartheid in South Africa. He finds that the Bank’s report presents the poor as victims and persons incapable of agency that can only be saved within the Bank’s neoliberal vision. Desai’s analysis is from a historical perspective to arrive at different left leaning conclusions.

Not all development agencies agree on approaches to poverty, but ever since the High Level Ministerial Forum on Aid Effectiveness in Paris (HLF-Aid, 2005) the major agencies work together to coordinate policies and aid disbursement. This gives the Bank greater control over development activities as undisputed leader. Its version of what poverty is and how to fight will likely continue to set the agenda even for ICTs.

The digital-divide

Aid and development agencies exist to address perceived material and ideational disparities across nations. An exemplar today is the *digital-divide* in knowledge and capabilities to use ICTs, and in infrastructure. It is often linked to poverty eradication to inform much of global ICT policy formulation (McNamara, 2003). However its role as discursive strategy is ambivalent in the construction of power asymmetries as it may be presented positively or negatively. It may be presented as easier to transcend than industrialization through technology leapfrogging, as evidenced with

the rapid uptake of mobile and wireless communications in Africa (Wijkman and Afifi, 2002). Conversely, the rush to close the divide also provides an entry point for the west to lock up developing countries into quasi-monopoly providers of ICT services (Wade, 2004). This would be a serious long-term difficulty under the current WTO trade regime that appears to favor trans-national corporations (TNCs) over the poor and nation-states (Pithouse, 2003).

Presentation modalities and interpretations of the notion digital-divide in positive or negative terms (utopian vs. dystopian visions in Younis (2005)) are subject to human or institutional goals, interests, norms, and values. Castell's (2000b) global informational network economy spatializes inclusion and exclusion creating horizontal global categories. Useful social analysis would go beyond the nation state to economic and social class, ethnic, gender, age, and location differences among others. Accordingly the rich in poorer countries are hardly excluded while the poor in richer countries are marginalized.

Evidence shows that successful and beneficent transition to an information based society requires judicious management of relationships with global capital. Today India is often cited as an ICT success story, but it mandates that 51% of all foreign direct investment (FDI) in ICTs be locally owned against the logic of neo-liberalism and globalization (Mowlana, 1997). According to Wade (2004), ICTs and globalization would reinforce existing patterns of dependency if we 'bridge the divide' without giving attention to existing and potential ideological and structural pathologies in global power relations. It is instructive that since the early 1950s the realist (power oriented) paradigm other than idealist (traditional western liberal democratic values) has dominated in the field of international relations (Mowlana, 1997). The digital-divide as discourse may therefore be used positively to generate innovative interventions, or negatively to sustain historical power and resource distribution differences. Linkage with poverty multiplies the complexity of discourse and policy making in ICT4D.

2.3 GLOBAL TRENDS IN ICT4D

Though inter-country comparisons can give us global trends in ICT their construction and interpretation is open to considerable debate (bridges.org, 2005). Comparative statistics and individual success stories should be read with caution for even by 2004 Africa could still be described as a “data vacuum” with many countries unable to provide even the most basic data for ITU’s annual reporting annals. When indicators exist they are often inappropriate to the context since they are designed for developed country contexts (Gillwald, 2004).

Global ICT surveys indicate widening disparities in penetration and usage indicators between rich and poor countries. A major exception is mobile telephony for which dramatic growth rates have been recorded in developing countries. In an encyclopedic global ICT survey and analysis, Mansell and Wehn (1998) compare countries using an approach termed INEXSK (INfrastructure, EXperience, Skills, Knowledge) geared towards conceptualizing linkages from infrastructure to knowledge for sustainable development. It is based on separate indices for personal computers, main telephone lines, electronics production, electronics consumption, technical graduates, literacy levels, Internet hosts and TVs. They are presented in diagrams termed ‘ICT Footprint’ (pg. 23), a heuristic device to facilitate graphical comparison for countries and regions. Comparison data is drawn from the International Telecommunications Union’s (ITU) comprehensive ICT database.

Telephone main line data as the most comprehensively reported statistic indicates recent dramatic growth in poorer countries though there is still a long way to go. According to the report sub-Saharan Africa and Central Asia may require at least 50 – 100 years to catch up with the lowest rated industrialized country. Africa is rated at two thirds of world average and 30% of North America. The bigger problem is widening disparity since only 18 of 43 African counties maintained or improved their ranking over the survey period (Mansell and Wehn, 1998: 25). Banerjee and Chau’s (2004) evaluation for E-Governance convergence gave similarly dim prospects for most tricontinental countries.

Mobile telephony's fast penetration in developing countries has prompted optimism by leading international development agencies for wireless Internet capacity to bridge the digital divide. It is the key theme in a World Bank (*InfoDev*) and UN backed report titled *The Wireless Internet Opportunity for Developing Countries* (WII, 2003). The report recognizes that cheaper connectivity has no value without growth in demand from other e-services like e-government, e-health, e-business or e-learning. Poor regulatory environments, existing usually bloated public monopoly landline companies, and administrative obstacles are noted as additional constraints to mobile telephony. Successful wireless applications are usually from unexpected 'grass roots' linked entrepreneurship creatively addressing local needs (WII, 2003). A good example is the pioneering text messaging money transfer service in Africa (M-Pesa) by a Kenyan mobile phone company Safaricom (Katz, 2007).⁹ Considering that Visa International intends to replace plastic cards with the mobile phones in banking (VISA, 2007) such innovations from 'developing' regions would appear particularly significant. UK based Vodafone that part owns Kenyan Safaricom recently entered into a joint venture with Citibank to roll out the service internationally (Citigroup, 2007).

2.3.1 TRENDS IN E-GOVERNANCE

According to the latest *Global E-Government Readiness Report 2005*, 179 of 191 UN member states were online in one form or another (UNPAN, 2005). UNPAN prepares an annual E-Government Readiness Index described as a "composite measurement of the *capacity* and *willingness* of countries to use e-government for ICT-led development" (pg. 14). It comprises the Web measure index, the Telecommunications Infrastructure index and the Human Capital index (based on the UNDP Education Index). Table 2-1 indicates that North America and Europe are the best performing regions with most tricontinental countries at the bottom.

⁹ The first in the world was in the Philippines by Smart Communications' [Smart Money](#) and Globe Telecom's [G-Cash](#). See cited reference.

Table 2-1 Regional E-Government Readiness indices

<i>Year</i>	<i>2005</i>	<i>2004</i>	<i>2003</i>
North America	0.8744	0.8751	0.8670
Europe	0.6012	0.5866	0.5580
South & Eastern Asia	0.4922	0.4603	0.4370
South & Central America	0.4643	0.4558	0.4420
Western Asia	0.4384	0.4093	0.4100
Caribbean	0.4282	0.4106	0.4010
South & Central Asia	0.3448	0.3213	0.2920
Oceania	0.2888	0.3006	0.3510
Africa	0.2642	0.2528	0.2460
World Average	0.4267	0.4130	0.4020

Source: UNPAN (2005:30)

The gap between the top and bottom countries is getting wider and there is wide disparity in access, with most in the bottom 32 countries, mainly from Africa, showing limited relative progress over the years. Philippines and Chile were noted for good practice while others were stagnant or regressing. For instance Zambia had a ‘coming soon’ message on the government web portal in the three years prior to the study, while the Democratic Republic of Congo website disappeared when there was no government. South Korea, Singapore, Estonia, Chile and Malta are classified as ‘developing’ but rank with Europe and North America in E-Government Readiness. The report finds that there is no one good way but political commitment and a well thought out vision with doable objectives are important factors.

Transaction services are a step above information provision in moving from one stage of E-Government to the next. It apparently requires greater transformational change with only 31 percent of countries offering any. Political will, legal reforms and provisions to enable e-transactions were mentioned as important to a country’s level of web services. Such factors are explored further in the next section on E-Government adoption in developing countries.

2.3.2 E-GOVERNMENT ADOPTION

E-Government services cover delivering citizen services, services to business, industry, e-communication and document processing, and empowering citizens through access to information. Services may be availed online by departments, through conveniently located service centers or through a portal (Bhatnagar, 2002), and today through mobile phones, termed M-Government (Cilingir and Kushchu, 2004). E-Governance hardware and software solutions are available from vendors covering a whole range of requirements. In many cases it calls for distributed system solutions to overcome the problem of legacy systems and existing stand alone applications (silos) for each government department (Bannister, 2001). Realizing this in practice is much more difficult and is context dependent.

Policy goals and the global context

Better governance which usually means efficiency, transparency and accountability is the presumptive aim of E-Government projects. Normally they are implemented as part of broader New Public Management (NPM) reforms; in developing countries there is strong external pressure for such reforms from international financial agencies (Ciborra and Navarra, 2005). As internet use grows in the world, increased global normative pressure will continue to drive E-Government growth and change (Wong and Welch, 2004).

According to Polidano (1999) NPM is more rhetoric than reality in developing countries. Outcomes are contingent upon local factors and general national characteristics. Similarly Wong and Welch (2004) found that accountability was dependent on national characteristics and type of bureaucracy rather than technology adoption. Accountability gaps are maintained across nations even as the overall level of technology use rises. Accordingly, interactivity and transparency may represent different dimensions of accountability such that it is possible to have greater interaction through technology without a corresponding change in transparency.

E-Government adoption in developing countries

Carter and Bélanger (2005) used the Technology Adoption Model and found that perceived ease of use, compatibility and trustworthiness were significant indicators of

citizens' intention to use state E-Government services in the United States.

Qualitative evaluations are more common in developing countries. They shed light on the human, institutional and social factors that influence E-Government adoption.

First and most significant is political and E-Government project championship and leadership. Successful projects in Jordan and India were directly attributable to the political and national leaders with strong interest and belief in the benefits of E-Government (Al-Qirim, 2007, Krishna and Walsham, 2005). The governing religious movement slowed the pace of E-Government adoption in Iran due to concerns about citizen's access to the internet (Sharifia and Zareib, 2004). Kumar (2006) investigated the failure of village internet based services in Tamil Nadu state in India and found that they lost political and institutional sustainability. The project leadership failed to manage people, managerial, cultural and structural factors that would ensure continued support. Related to this is user demand as an important driver for E-Government adoption in developing countries (Mansell and Wehn, 1998).

Strong project management skills and the involvement of multiple partners also contribute to success (Bhatnagar, 2002, Ciborra and Navarra, 2005, Krishna and Walsham, 2005). Some of these partners are private sector groups, vendors and consultants that bring in specialized technical skills, and for long term strategic visioning. But public-private partnerships are no substitute for bad government; they still require effective governance to work. Training and cultivating departmental ownership for the initiative are crucial to pull through required business process redesign and administrative improvements. E-Government systems tend to reduce opportunities for rent-seeking by first-line clerical officers and will likely meet stiff resistance; again if not done well they may create new loop-holes (Bhatnagar, 2002, Ciborra and Navarra, 2005).

Long term sustainability requires integration into public budgetary systems and the development of local human resource capacities. This was cited as a potential problem in Jordan where there was great reliance on foreign sources that would exacerbate structural constraints (Ciborra and Navarra, 2005). Kimaro and Nhampossa (2005) term Mozambique's Ministry of Health as a 'ministry of projects'

because it is simply a collection of fragmented donor policies and projects, a recipe for un-sustainability.

E-Government adoption in developing as the survey indicates is contingent upon multiple factors that vary across nations. An adaptive learning approach together with persistence has been recommended from a successful example (Krishna and Walsham, 2005). Iran adopted an adaptive implementation model to cater for its unique mode of governance, and national and social characteristics (Sharifia and Zareib, 2004). Local interpretations and reactions to policy issues arising from global pressures towards better governance and external players such as donors will also influence E-Government adoption.

2.4 CONCLUSION

Our consideration of contemporary issues in ICTs and international development indicates that discursive practices embedded within development institutions shape ICT4D and E-Government trends and practices. Models of development have changed over the years from modernity to structural adjustment programs (SAPs) and neoliberal globalization policies. Their record of success is varied, with strong criticisms from Marxian, dependency school, global system theorists, and postcolonial writers. Western countries and development finance institutions are very influential and even determine development policy in line with their interests, presently aligned with neo-liberal and new institutional approaches to economics and development planning.

Alternative development paradigms differ in ideology and ethical considerations because their proponents subscribe to different value systems. Neo-liberals privilege individual freedoms to accumulate wealth while advocates for forms wealth redistribution seek economic policy interventions to cater for the underprivileged and overall social equity.

Development discourse has material implications for powerful interest groups in global trade for the supply of ICT technology and services to 'emerging markets'. It is not clear whether ICTs impact on development will differ significantly from the

generally weak results of agriculture and the drive to industry under developmentalism; it may simply repeat the cycle to sustain states of underdevelopment, poverty, and exclusion (Rivero, 2001). The digital-divide and poverty were examined as two powerful discursive strategies in ICT4D that shape and that may sustain inequalities between developing and developed countries.

Alternatives to development and post-development from the postcolonial/postmodern critiques provide fresh avenues to relook at ICT4D beyond the modernity paradigm, widely criticized in the literature for its linearity assumptions and inattention to history (Biccum, 2002). Any new forms and meanings of development arising from these would have to contend with issues of complex postcolonial subject agency and identity. It was observed that conceiving forms outside of received western frames of reference is a difficult challenge.

Broader policy objectives implicit in E-Government such as accountability and transparency are related to global normative pressures, their realization is dependent on the national and bureaucratic character rather than technology adoption (Wong and Welch, 2004). Success full E-Government adoption and sustainability depends on multiple factors that vary across nations. An adaptive learning approach with stronger internal management and reduced reliance on external resources has been recommended.

Chapter 3 reviews the main research paradigms and methodologies used information systems research and their employment in ICT4D

CHAPTER 3 INFORMATION SYSTEMS RESEARCH PARADIGMS AND ICT4D

In Chapter 3 we review information systems research (ISR) practice, philosophies and paradigms that underlie the production of ICT4D knowledge. We shall cover positivist, interpretive, and critical epistemologies, and integrative (social system building) approaches popular today. Specific ICT4D models and methodologies are evaluated to highlight gaps in knowledge that motivated this study.

3.1 INTRODUCTION: A THEORY-PRACTICE DIVIDE

The field of information systems research is in a state of intellectual ferment. It is a discipline still situating itself in academia while searching for an appropriate scientific research paradigm (Chen and Hirschheim, 2004). Long running paradigm wars between positivism and interpretivism are by now entrenched positions. Weber (2004) decries the absence of genuine engagement since neither side appears well acquainted with the other side's at times pragmatic practices. Positivism dominates and is a favorite straw man for interpretive researchers some of whom may simply be envious (Silverman, 1998). Still, an a-contextual interpretation of empirical statistics in the search for universal imperatives would result in culturally unworkable systems (Avgerou, 2001a). On the other hand, simplistic criticisms of positivism are not always warranted. Olsen and Morgan (2005) are able to distinguish between empiricism as method, and analytical statistics (in their case multivariate statistics), to show that the latter could be used in a critical vein.

Information systems researchers periodically survey the field with a view to ameliorating conceptual problems at the heart of the discipline (Orlikowski and Baroudi, 1991, Chen and Hirschheim, 2004, Weber, 2004, Merali and McKelvey, 2006). By 1998 Checkland and Holwell (1998) could still term it as "intellectually confused" owing to the many assertions and counter assertions. They trace this 'confusion' to challenges brought to the fore by Zuboff's (1988) distinction between *information* and *informating*. Information systems development could no longer be

limited to technical procedural matters (data-information processing) but was inclusive of political and cultural issues. Varied contributions to theorize simultaneously a field comprising computer science, IT and organization studies create the sense of confusion Checkland and Holwell (1998) observed. Ciborra (2004) takes a similarly dim perspective of information systems as a field with respect to the large gap between the dominant positivist approach in academic research and actual practices.

3.1.1 CONTEXT IN INFORMATION SYSTEMS RESEARCH

We cannot wholly box IS knowledge and practices into philosophical or paradigmatic frames because of necessary pragmatism and sensitivity to context in practical applications (Weber, 2004). In other words the distinction between IS *knowledge* and IS *practices* should be sustained. Our discussion will concentrate on IS research and applications related to technology innovation and adoption. In Chapter 2 we saw that ICT4D practice is associated with the positivist modernity developmental paradigm that privileges objective knowledge and models that can be generalized across many countries. There are important complementary contributions from interpretive and critical ISR to address the large contextual gap between the west as source of most ICT4D innovations and the tricontinental countries where they are applied.

According to Berman and Tettey (2001) developing country contexts are significantly different from western countries, politically, socially, economically, technologically, and culturally. Contextual effects and conflicts are assumed to be more pronounced than those in the predominantly western design environments. One benefit of research therein is to inform IS failure theory and the understanding of IS contexts (Avgerou and Madon, 2004, Heeks, 2004b). Avgerou (2001a) in fact considers IS innovation as part and parcel of social reform and contextualist analysis a necessary competence for IS practitioners. Consequently studies in complex contexts should to the extent possible allow for emergence of the boundary of inquiry (Merali, 2002, Shoib and Nandhakumar, 2003).

Kallinikos (2004) further notes that the presence of technology necessarily constrains locally embedded agents because it is technically complex and must meet the need for

institutional and functional interoperability; more so for large systems such as E-Government and enterprise resource planning (ERP) systems. Technology therefore constrains and affects human behavior in ways that are not necessarily localized. Appropriate IS approaches should therefore give sufficient consideration to both structural and situated effects. Caldwell (1994:228) terms it as the “integration of prescription and description” in his discussion of philosophical traditions in the production of scientific knowledge.

3.2 ISR PARADIGMS AND APPROACHES TO ICT4D

The three dominant schools in ISR are the *positivist*, *interpretive*, and *critical* orientations (Checkland and Holwell, 1998). This statement may not be entirely correct. Chen and Hirschheim’s (2004) survey of paradigmatic positions found that the only real alternative to positivism is interpretivism despite other stated orientations; little actual research is going on apart from these two. For our purposes it is important to distinguish critical from interpretive studies because of the emancipatory intent implicit in critical studies (Klein and Huynh, 2004). The three dominant schools are today surpassed by what Checkland and Holwell (1998) term *social system builders*. These are IS frameworks and methodologies developed on the basis of social science models like Structuration Theory and Actor Network Theory.

3.2.1 POSITIVISM AND INTERPRETIVISM

Positivism is identified with modernity and is the dominant paradigm not just in information systems but in the whole of western civilization (Bhaskar, 1986, Schumacher, 1974). Chen and Hirschheim (2004) distinguish positivism from interpretivism on the basis of ontology, epistemology and methodology. Ontologically, positivism assumes that reality exists and may be known objectively, independent of human existence. Interpretivism assumes that reality is socially constructed through human social interaction processes mediated by subjective meanings ascribed to phenomena. Modern positivist epistemology follows Karl Popper that science progresses by falsification of testable hypotheses (Caldwell, 1994). Some may hold on to the verificationist Vienna Circle (logical positivism) model that Popper criticized and reformulated. The important thing is that objective

causal relationships are established through the hypothetico-deductive model for explanation, prediction and control (Caldwell, 1994). Thus Klein and Myers (1999) identify an IS study as positivist “if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from a representative sample to a stated population.”

Interpretivism denies the possibility of objective knowledge apart from subjective human interpretation. Postmodernism and post-structuralism (radical hermeneutics) gained greater acceptance in the west following Kuhn’s (1996) challenge to the positivist hegemony in philosophy of science. Kuhn’s notion of ‘paradigms’ is by now part of everyday language. It made possible the flourishing of alternatives to positivism within the social sciences, including interpretivism and forms of textual analyses in information systems (Caldwell, 1994). Instead of seeking objective causal relations for prediction, we try to understand how subjective meanings of reality are constructed. Thus Klein and Myers (1999) outline set of principles for conducting interpretive studies puts the hermeneutic circle as the fundamental principle to all interpretive work. As they explain, understanding the whole relies on our preconceptions about the meanings of its parts and their interrelations.

These ontological and epistemological precepts lead to a quantitative measurement oriented methodology for positivism, and to studies where the researcher is socially engaged for interpretive work. Positivism favours surveys that use ‘objective’ value-free tools, while interpretivism usually involves ethnographic studies, in-depth interviews, participant observation, and action research.

Within IS, positivism’s dominance is well attested. It was the paradigm of choice in 96.8% of 155 papers examined in Orlikowski and Baroudi (1991), and 81% of 1131 empirical studies examined in Chen and Hirschheim (2004). Chen and Hirschheim’s (2004) evaluation of a decade’s efforts in research beyond positivism suggests barely marginal progress towards pluralism particularly in the US; positivism’s dominance seems assured for the foreseeable future primarily because it offers an easier path to tenure and promotion through publication in higher rated journals. But in the long

run, only research that has value to a broader audience, especially practitioners, will survive (Kock et al., 2002).

3.2.2 CRITICAL IS RESEARCH

Critical philosophies also inform qualitative research to address the contextual and interpretive gap in empirical statistical research. Among these are Habermas' Critical Social Theory (CST) that has gained wide acceptance owing to its emancipatory character and ethical imperative in the development of normative frameworks and Foucault's discourse analysis (Klein and Huynh, 2004, Stahl, 2004). Ngwenyama and Lee (1997) extend the Information Richness Theory of communication from a study of email communications from positivist and interpretive perspectives with CST to produce a new theory of communication richness in electronic media.

Foucauldian discourse analysis challenges the core concepts of CST to shed light on the history of power relations in their social, historical, economic and ideological context (Wilcocks, 2004). Thompson (2004) demonstrates its power when he deconstructs a speech by World Bank President James Wolfensson on ICTs in world development. He shows that Wolfensson purports to cherish Amartya Sen's ideals of freedom (Sen, 1999), while actually retaining the much criticized core developmental ideology centered on free markets and economic growth for reproduction and strengthening with ICTs. Ciborra (1997) deconstructs the positivist idea of Strategic Alignment for IT infrastructure and organization strategy by examining inconsistencies between abstract 'geometrical' notions of fit in grand IT plans and the actual messy attainment through tinkering. He proposes a new research programme that more reflects actual realities rather than the academic scientific paradigm popular in business schools. We shall examine the application of each of these approaches to ICT4D research.

3.3 POSITIVIST ICT4D RESEARCH: TECHNOLOGY DIFFUSION

Positivist ICT4D research ranges from simple surveys to sophisticated statistical models and positivist case studies (Dubé and Paré, 2003, Lee, 1989). An important construct implicit in much of positivist ICT4D research is diffusionism that is closely

related to modern ideas of development and progress. Likewise, Checkland and Holwell (1998) associate positivism with a diffusionist and technocratic base. Diffusionism is the idea that there exists an asymmetry in innovation such that there is a “progressive center” with the rest of the regions or community being passive recipients (McMaster and Wastell, 2005). The asymmetrical ICT policy dialogue between ‘developed’ and ‘developing’ countries, and the digital-divide and poverty ICT4D discourses match diffusionist logic. Positivist approaches to ICT4D may use such constructs implicitly or explicitly but rarely interrogate them. We shall look at some examples from research studies in developing countries.

3.3.1 SURVEYS AND CASE STUDIES

Surveys and positivist case studies are usually done as initial descriptive or exploratory research (Odedra-Straub, 1993, Oyomno, 1996, Waema, 1996). Usually the main output is lists of factors classified according to positive or negative impact on ICT performance, Table 3-2 is a typical list. Similar lists are found in Mbarika et al.(2005), Oyomno (1996) and Waema (1996).

Table 3-1 Typical list of IS/IT 'problems'

1. Lack of management support and commitment
2. Lack of skilled personnel
3. Role of consultants
4. Structure, norms, decision making
5. User resistance
6. Lack of strategic focus, planning
7. Lack of awareness of potential of IT
8. Management turnover
9. Lack of user education and training
10. Poor supplier support
11. Lack of funds
12. Lack of telecommunications infrastructure
13. Inappropriate IS development approach
14. Site preparation

Source: Odedra-Straub (1993)

The studies tend to identify closely related factors such as the need for better project management *and* for better IT integration and coordination in Oyomno (1996), which

raises the possibility of deeper underlying causes that would explain both factors.

Odedra-Straub (1993) summarizes the dilemma:

“...based on research conducted by the author in a number of public sector organizations in Kenya, Zambia and Zimbabwe, shows, using case studies, that it is a combination of factors which play a role in success (or failure), and that it is difficult, and inappropriate, to isolate a few specific factors as being the ones influencing all organizations in all countries; factors vary from organization to organization and from country to country.”

Such factors are not causes but observations or multiple correlation constructs, while the distinction between definitions and causes of failure is often unclear (Wilson and Howcroft, 2002). Researchers have also called for urgent research from the tricontinental country's point of view (Odedra-Straub, 1993). More sophisticated positivist studies rely on models that integrate multiple factors analytically. We shall discuss two frequently cited models in the literature: ITPOSMO Gap Analysis (developed with specific reference to information systems in the developing countries) and statistical multivariate models, using the Technology Acceptance Model (TAM) as prime example.

3.3.2 GAP ANALYSIS

Gap Analysis evaluates E-Government projects from a success-failure perspective by considering gaps between a present and proposed scenario (Heeks, 2004a). The analytical tool termed the ITPOSMO framework is a 7-dimensional model (Figure 3-1) to rate projects chances of success or failure (Heeks, 2001a, Heeks, 2002, Heeks, 2002b). A project analyst evaluates potential E-Government success and failure from a technology transfer perspective by considering the amount of change between “where we are now” and “where the E-Government project wants to get us”. The former refers to the “current realities of the situation” while the latter is “the model or conceptions and assumptions built into the projects design”. Gap scores (scale of 1-10) are assigned for each dimension and the total score is compared to an empirically developed predictive scale of possible outcomes. Management action like training, local improvisation, and modularity in project design, may then be taken to mitigate risks/gaps that would likely lead to failure.

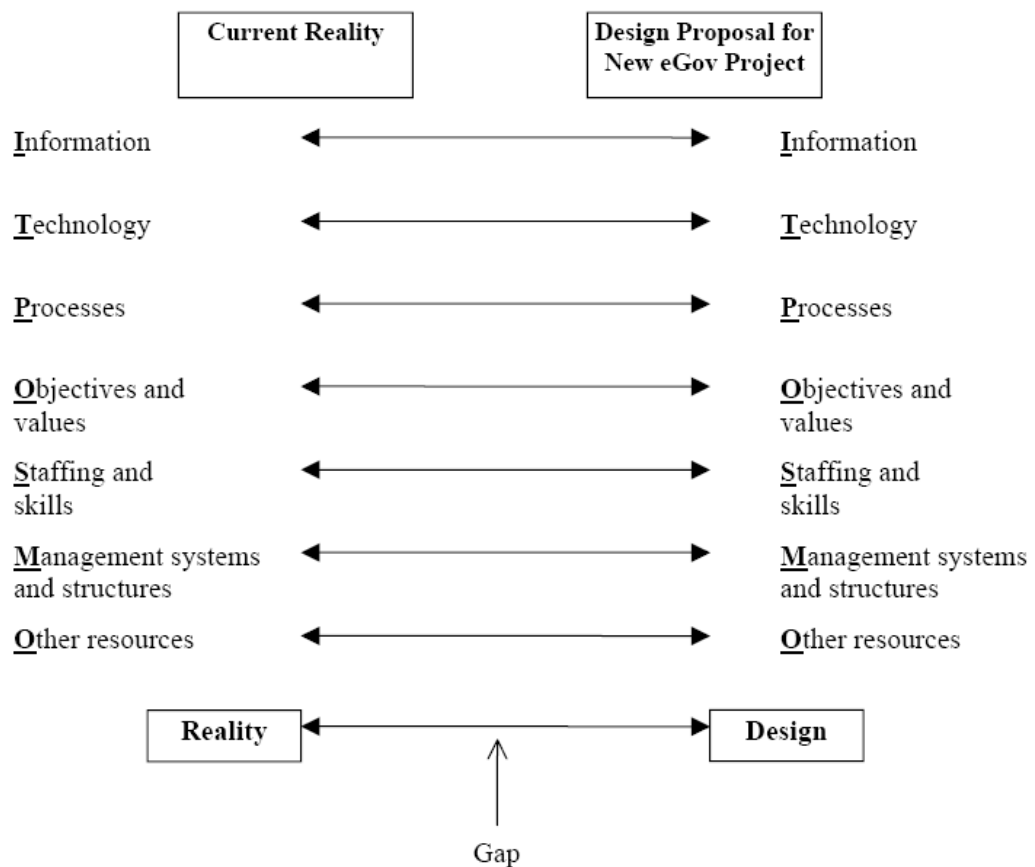


Figure 3-1 ITPOSMO design-reality gaps

An alternative equivalent approach is scoring relevant management factors, though Gap Analysis has greater prominence. Recent innovations in the methodology allow for weighted factor scores, additional factors, and their derivation from participatory group processes. However, risk control remains as the dominant theme. ICT4D researchers in the tricontinental countries have adopted or adapted the model to their needs such in Kenya (Gichoya, 2005), Turkey (Velibeyoğlu, 2004), and Kouroubali (2002) in Crete together with Structuration theory.

Gap analysis has a conservative conception of information systems outcomes by posing them as a gap in a conceptual trajectory of social evolution with pre-determined ends. It may limit rather than facilitate innovation. As part of the ITPOSMO approach, local improvisation is emphasized in recognition of contextual diversity within an overall theme of failure avoidance. Effectively the ITPOSMO

Gap Analysis model is a standard project management weighted factor scoring tool to mitigate the probability of failure (Buttrick, 1997). This is a conservative approach that may preclude the search for felicitous outcomes. Understandably, Bada (2002:85) rephrases the issue of gaps to a positive: “how can we manage and exploit contradictions or discrepancies arising from the persistence of local ways of life when implementing global techniques in developing-countries contexts?”¹⁰

What may need revising is the failure oriented approach to information systems in such contexts because there are as yet no ‘standards’ to facilitate success-failure judgments. The desirable standard is specified as that for the western design context, which would only serve to reinforce charges of Eurocentrism as an organizing principle for ICT knowledge production (Brohman, 1995). Two issues may be identified from this discussion:

1. Following Bada’s (2002:85) comment above, the issues underlying failure include how practitioners *choose* to engage ICT projects in diverse contexts. Project actors’ underlying values and hidden or subconscious intentions ought to form part of the analysis to avoid imposing worldviews in the name of objectivity (Mejia, 2004).
2. What are the appropriate *analytical initial conditions* in tricontinental country contexts? This follows from reflecting on the design process, an important question would be why a potentially mismatched design should be under consideration in the first place. Gap analysis begins from a design proposal rather than from the reality.

Both are related to project conception, and project actors values and attitudes towards technology innovation; they shall be revisited in the discussion of findings.

¹⁰ APPIAH, K. A. (1991) Is the Post- in Postmodernism the Post- in Postcolonial? *Critical Inquiry*, 17, 336-357. quoted in Section 2.2 mentions that creativity thrives in poor societies despite material poverty.

3.3.3 MULTIVARIATE STATISTICAL MODELS

Technology Acceptance Model

According to McMaster and Wastell (2005) Davis et al.'s (1989) the Technology Acceptance Model (TAM) shown in Figure 3-2 is the most important theoretical model of technology transfer in information systems today and is an exemplar of technical rationality. It owes its factor logic to Rogers' (2003) general Diffusion of Innovation theory (DOI) that is also used in IS studies in its own right (Venkatesh et al., 2003).

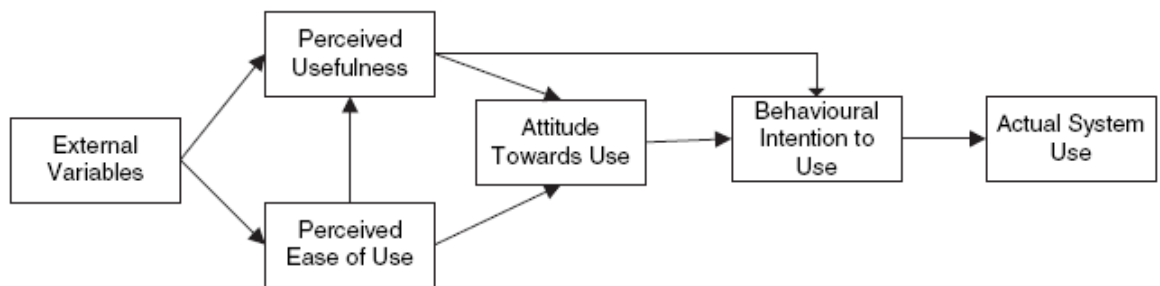


Figure 3-2 Technology Acceptance Model

TAM is a causal model based on the theory of reasoned action from sociology that relates the constructs Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) to Actual System Use (U) (Venkatesh et al., 2003). Perceived Usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance”. Perceived Ease of Use is “the degree to which a person believes that using a particular system would be free of effort” (Davis et al., 1989). PU and PEOU are related to U through attitude towards use of technology and the behavioral intention to use it. The original formulation is termed TAM, TAM2 extends it to include a subjective norm as an additional variable in the case of mandatory settings (Venkatesh et al., 2003).

Musa, Meso et al.(2005) revise one of TAM variants, the Perceived User Resources model, for suitability to Sub-Saharan Africa by including additional policy factors mentioned as geo-political, cultural, structural, tribal, environmental, and socioeconomic. Their goal is to attain sustainability in the adoption of ‘foreign

technologies' (their inverted commas) in Sub-Saharan Africa. In a closely related study, Meso et al. (2005) use TAM to explain the diffusion of mobile ICTs in less developed countries (LDCs) based on case studies in Sub-Saharan Africa. They give specific policy suggestions that may be useful to companies and governments such as to concentrate on factors that explain individual mobile use.

Positivist diffusionist models have been criticized for their reliance on formal modeling and statistical methods, and for the overall logic of diffusionism. Over the past several years McCloskey and Ziliak (2007) have made the case that statistical significance testing in economic models is "misdirected" as scientific enquiry. For example Balamoune-Lutz's (2003) search for the determinants of technology diffusion in developing countries relies on formal econometric formulas. Disparate variables such as income, economic freedom, openness, adult literacy, education, political rights, civil liberties and financial liberalization, are quantified, evaluated and conclusions drawn. According to McCloskey (2002), such are *qualitative* theorems, measured and certified through *quantitative* tests of statistical significance. Concerning such McCloskey (2002) in characteristic succinctness states:

In short, statistical significance is neither necessary nor sufficient for a result to be scientifically significant. Most of the time it is irrelevant. *A researcher is simply committing a scientific error to use it* as it is used in economics and the other social sciences and in medical science and (a strange one, this) population biology *as an all-purpose way of judging whether a number is large enough to matter*. Mattering is a human matter; the numbers figure, but after collecting them the mattering has to be decided finally by *us*; mattering does not *inhere* in a number.

This would mean that there is no way to judge whether statistical significance indicators and resultant policy suggestions as in Meso et al. (2005) TAM based statistical analyses have any value at all, whether they *matter*. Paralleling this is Mingers (2004c) negative assessment of the value of multiple regression in causal analysis following the argument on generative causation in the introductory chapter. Statistical modeling is perceived as relying on implausible assumptions of multivariate normal distributions, independence of variables, one-way causality and linearity that are unlikely to hold. Extremely complex phenomena may arise from

simple non-linear dynamical systems and are ubiquitous in nature (Prigogine and Stengers, 1984, Kauffman, 1995).

TAM's popularity in ISR and technology transfer evaluation, and validation in many studies indicates that the argument may not be as simple. It could be argued that in certain contexts with stable institutions its assumptions may hold to some extent. In developing country contexts however, additional issues of data quality and availability, measurement (Cain, 1996) and construct operationalization may limit the usefulness of multiple variable correlation models in such.

The underlying diffusionism logic means that models such as TAM pursue technology adoption as an end from a reductive perspective. Researchers may underestimate the importance of underlying realities when they give preeminence to epistemological integrity during conceptual schema development. It leads into paradoxes such as where Musa et al. (2005) are very negative on ICT prospects for Sub-Saharan Africa, and then proceed to suggest the need for field studies for deeper understanding of the factors that influence technology adoption, diffusion, investment decisions and government policies. A more logical sequence of events would be to undertake field studies first and only then formulate a statistical model.

TAM adopts a more radical representational parsimony because it relies on a smaller set of attributes than Rogers' (2003) DOI theory whose core reductive positivist thrust is moderated by social context considerations (McMaster and Wastell, 2005). Rogers (2003) discusses criticisms and limitations of diffusion theories to encourage greater contextual awareness when using them in developing countries. IS researchers in developing countries may continue to benefit from multivariate statistical models if they keep such contextual considerations in mind.

Possibly more relevant to postcolonial nations is McMaster and Wastell's (2005) critique that diffusionism lacks empirical support, and that its ultimate roots lie in asymmetric colonizer-colonized relations. From this perspective diffusion logic relies on a presumed dichotomy between a center and periphery as illustrated in Fig 3-3. The center in this instance is western civilization that perpetuates itself through the

institution of Eurocentricism. The authors draw on James Blaut's work on Eurocentricism and colonialism to conclude that diffusionism served as a grand narrative to legitimate European expansionism.

“From the centre of creativity flows reason, science and progress, while from the recipient community flows only insanity, irrationality and stagnation. Blaut calls this the “Aids out of Africa” syndrome, epitomising all those cliché's that commonly ascribe bad or negative things to “somewhere else” (diseases from Africa, drugs from South America etc.).” (McMaster and Wastell, 2005)

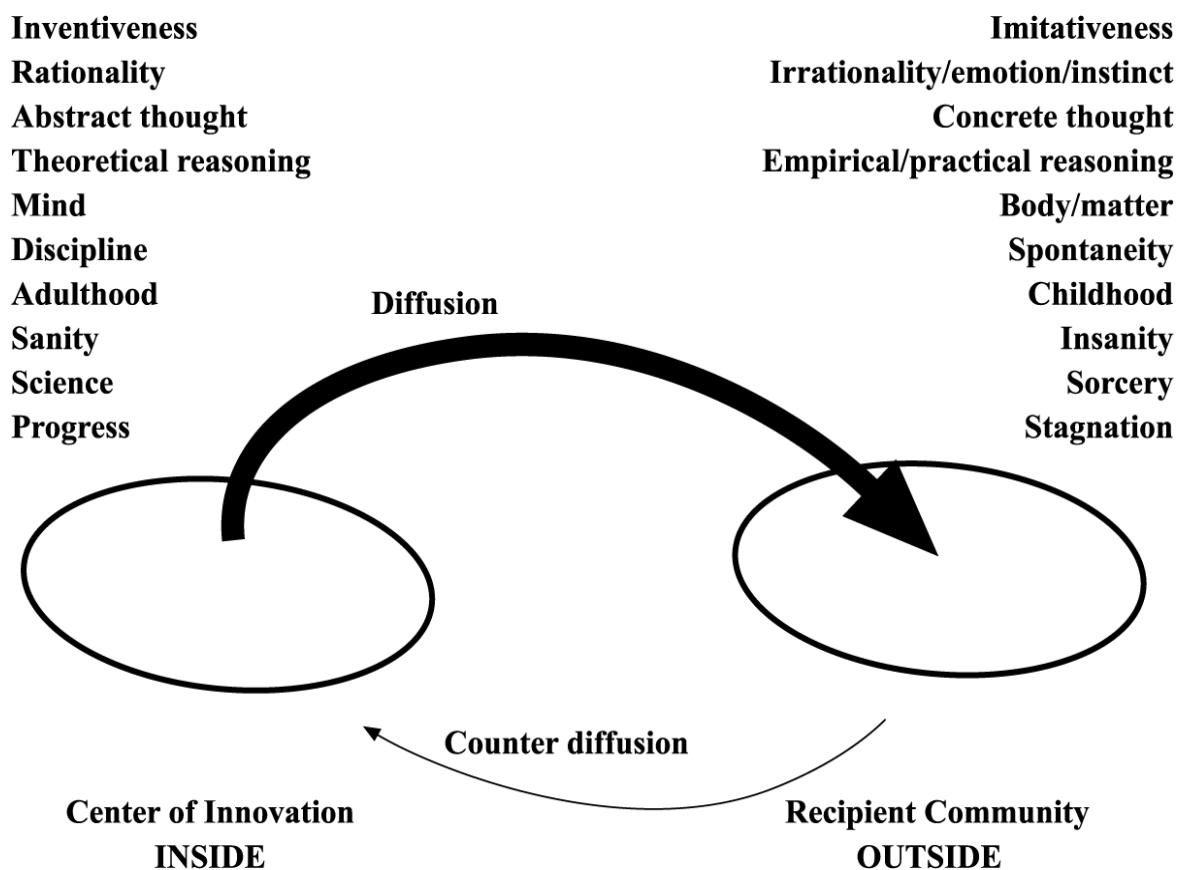


Figure 3-3 The Logic of Diffusion

Source: McMaster and Wastell (2005)

Diffusionism leads to a pro-innovation bias that tends to blame the recipient when these do not work since the fault cannot be ascribed to the source or technology.

Non-diffusionism is portrayed as *resistance* to change to provide a “rhetorical advantage” that favors innovation and stifles critique (McMaster and Wastell, 2005).

It also means that the evaluation of innovation is delinked from history or tradition as noted in Chapter 2 on development and developmentalism. Both share the same underlying logic of rational linear progress; and method in the preference for quantification and mathematics over sociological or subjective analyses. The diffusion critique would also apply to Gap Analysis, which has similar conceptual foundations of asymmetry when positing the western design context as the standard to evaluate design-reality gaps in ‘developing’ country ICT projects.

3.3.4 IMPLICATIONS OF POSITIVISM TO ICT4D RESEARCH AND PRACTICE

The existence and persistence of the ‘problem paradigm’ and failure as a research theme in ICT4D illustrate the center-periphery dichotomy and the rhetorical role of diffusionism. Our review indicates that they may ultimately arise from conceptual weaknesses of positivism when applied in ICT4D without giving due attention to contextual realities.

The ‘problem paradigm’

Frequently the driver for ICT research in tricontinental countries is the search for causes or reasons for failure to replicate successes in the west. This ‘problems paradigm’ is premised on the notion of lack of success for ICTs in Africa (Oguibe, 2003). The International Federation for Information Processing Working Group 9.4 (IFIP WG 9.4 – Social Implications of Computers in Developing Countries) early focus revolved around information systems failure (Sahay and Avgerou, 2002). This would appear odd given that evidence for developed-developing world differences in IS/IT failure is not particularly strong as data from leading researchers’ illustrates. Heeks (2003) estimates that 34% of IS/IT projects in developing countries are total failures, 50% are partial failures, and only 15% succeed. These are not very different from comparative figures for the west from Gartner Group, United Nations Department of Economic and Social Affairs (UNDESA) and a survey for *Economist* in which the proportion of failing projects varies from 60% to as high as 85% (Heeks and Stanforth, 2007). The US Government Accountability Office report found that 41% of government IT projects (22% of the IT budget) for 2008 were put on a

management watch list for being poorly planned or both poorly planned and poorly performing – See Table 3-3 (GAO, 2007).

Table 3-2 Management Watch List Budget for Fiscal Years 2004-2008 (in billions)

Source: GAO analysis of OMB data (GAO, 2007)

Fiscal years	Total federal IT projects (associated budget)	Management Watch List projects (associated budget)	Percentage of federal IT projects on Management Watch List (percentage of budget)
2004	1400 (\$59.0)	771 (\$20.9)	55% (35%)
2005	1200 (\$60.0)	621 (\$22.0)	52% (37%)
2006	1087 (\$65.0)	342 (\$15.0)	31% (23%)
2007	857 (\$64.0)	263 (\$9.9)	31% (15%)
2008	840 (\$65.0)	346 (\$14.0)	41% (22%)

The data appears to contradict the notion that tricontinental country ICT projects fare significantly worse than in the west. There is admission that the “evidence base” for conclusions on excessive ICT failure in ‘developing’ countries (Heeks, 2002b) and Africa (Heeks, 2002) is not strong.

Despite this researchers and institutions in ICT4D and E-Government continue to take the expectation of failure for granted. Similar to Heeks (2002b), Riley and Sheridan (2006) recommend the problem paradigm (success/failure) as most useful when evaluating E-Government ICT projects in developing economies. E-Government literature that emphasizes dichotomy between developing and developed nations logically leads onto benchmarking and technology transfer as solutions.

Why some researchers should continue to frame concerns within the ‘problems paradigm’ emphasizing the negative in tricontinental states is unclear. In any case, a *success – partial fail – fail* categorization may be too crude for useful ICT performance evaluation, success or failure may be socially constructed (Wilson and Howcroft, 2002).

‘Lack of’: constructing failure

The ‘problems paradigm’ as discourse generates perceived failure when it is constitutive of the social reality of relations between developed and the tricontinental

countries, which in turn hides its operation. IS researchers in developing countries frequently present their findings and proposals in terms of *absence* or *lack of* something hence the need to do something about the lack (Odedra-Straub, 1993, Oyomno, 1996, Waema, 1996, Mbarika et al., 2005). The problem-description → solution-prescription mentality is a persistent theme amongst researchers in tricontinental countries and merits special consideration. Gap Analysis for risk is more sophisticated and goes beyond prescription to a learning or heuristic device premised on the expectation of failure. As noted above, hard data on failure is hard to come by, what is available is inconclusive on failure rate disparities.

Taking into account the critique of diffusionism and its relationship to colonialism, the said failure may be understood as a discursive construct built upon preexisting negative images and low expectations for tricontinental countries as illustrated in Figure 3-3. To start innovative interventions with what is *not* there is a sure path to negative self-evaluation and dependency. Here we see the operation of the “‘reductive repetition’ motif” of failure in Africa and the ‘developing’ countries that researchers should seek to transcend for productive theoretical and practical endeavor (Andreasson, 2005). Is “the glass half empty or half full?” would be a question for special consideration by ICT researchers in these countries. It is implied the research question on the meaning of development and success or failure. An alternative approach is interpretive and critical researches that give greater attention to human subjectivity and intersubjectivity in ICT4D contexts.

3.4 INTERPRETIVE AND CRITICAL ICT4D RESEARCH: RELATING PROCESS TO CONTEXT

Contextualist analyses in the literature rely on structured analytical frameworks from management concepts or administrative systems that serve to bring to light new dimensions of context (Avgerou, 2001b, Madon, 1994, Waema and Walsham, 1990b, Walsham and Waema, 1994). According to Madon (1994), without such contextual understanding, doing ICT in developing countries is a waste of time. Another reason is that unlike positivism, qualitative research is still at the theory building stage cannot

afford to assume away contextual richness or complexity (Madon, 1994, McMaster and Wastell, 2005).

Walsham and Sahay (2006) found that most research in developing countries adopts an interpretive contextual approach unlike in the west where positivism dominates. The goal is not to falsify theories as in positivism but to use theories (mainly social science) as sensitizing devices to view the world in different ways (Klein and Myers, 1999). Such studies have resulted in new understandings and the development of sophisticated multilevel integrative frameworks for developing country contexts. Key research themes include sustainability, participation, conceptualizing the IT artifact, social and community applications (e.g. telecenters), outsourcing, ICT as development strategy, studies of particular groups like youths, women, and the marginalized, development discourse, and freedom. As a result there is by now a much better understanding of how the social context is shaped by and in turn shapes ICT innovations.

One problem for IS research said to be critical or interpretive may be the continued difficulties researchers have in making sense of critical and interpretive work. McGrath (2005) examines two major works on IS in a global context said to be critical, *Making a World of Difference: IT in a Global Context* (Walsham, 2001) and *Information Systems and Global Diversity* (Avgerou, 2002). She concludes that they pursue criticality differently and then argues for greater documentation of methodological approaches. In the ensuing rejoinders by the authors in question, Walsham (2005b) is broadly sympathetic to her concerns but does “not believe that ‘method’ is the way forward in being critical”; his response is a personal account of his own journey to ‘being critical’ from a quantitative orientation in his early career. Avgerou (2005) is much more forthright maintaining that “critical research should maintain suspicion to instrumental reasoning and that it should place its effort to producing knowledge on an alternative agenda of substantive social issues by the interplay of theory and empirical evidence”. The conclusion by Walsham (2005b) that in his own words, would also apply to interpretive research, would ring true for many in the IS community:

However, my views are strongly related to my own background and history, and in some cases are rather tentative in nature. I hope to continue to learn about ‘being critical’, and I would welcome a wider debate on the topic in the IS community as a whole, from which we could all learn.

Evidently McGrath (2005) raised a fundamental issue for IS research if it is to meet the challenge by Orlikowski and Baroudi (1991) to end the positivist bias.

Positivism’s dominance in the west has more to do with its simple model of reality that allows researchers to make progress in pragmatic institutional contexts rather than demonstrable value to information systems per se. The alternative appears to go too much the other way, consigning interpretive and critical researchers to the margins of institutional realities, though its value to information systems is unquestionable. Avgerou’s (2005) call to integrate theory and empirical evidence may be met within integrative approaches that try to relate subjective and objective realms analytically.

3.4.1 FRAMING PROCESSES AND CONTEXTS

Interpretive integrative frameworks

Madon’s (1994) case study of a Computerized Rural Information Systems Project (CRISP) in information systems for development planning in India highlights the complexity of ICT4D contexts. Difficulties of conceptualizing development itself spill over into IS projects. She found little recognition that IT “implementation involves not just the installation of a technical system in an organization, but the institutionalization of its use in the ongoing context of jobs, formal and informal structures and personal and group processes” (pg. 2). Her longitudinal design for the inner and outer contexts at different institutional levels of analysis also takes into account the informal sub-system and power relations. For the wider context she contrasts the bureaucratic rational form against the joint family and caste systems, there are vested interests, unclear duties and responsibilities, and a clash of ideologies. She finds that in such contexts technology reinforces existing inefficiencies in the bureaucracy in the first few years, and that technology cannot change long established ways unless the underlying ideology is changed to one emphasizing orientational and

individual initiative. She draws on Checkland's Soft Systems Methodology (SSM) to bring out new cultural and political dimensions of context.

Such contextualist interpretive studies give richer multifaceted accounts of complex realities. However because they use situated methods, their findings are not generalizable and cannot explain why "infrastructure technology actually works" (Rolland and Monteiro, 2002). To achieve some closure as basis for action or decisions, integrative frameworks for the multiplicity of concerns is required (Mutch, 2002). Avgerou and Madon (2004) propose the notion of a frame for actors sense-making and calculated behavior. IS researchers re-framing of IS studies then yields new insights when they ask "who are the actors, what understanding, and emotional attitudes drive their actions? Where do these come from?" (pg 169) In the CRISP study Madon (1994) re-framed it to include intimate family, caste, religious and tribal systems that would normally be overlooked; which for example uncovers the "rationality of irrational behavior". Failure is no longer a black and white matter; it acquires new meaning because even left-overs from innovation are meaningful in the broader context of social and administrative reform. Avgerou and Madon (2004) thus recognize and allow for subjugated rationalities that often frustrate innovation translation.

Waema and Walsham (1990a) approach IS strategy formulation as a "process embedded in its context" with a multiple perspectives approach as a meta-inquiring system to evaluate an historical case study of strategy formation. Their findings are consistent with Madon's (1994) that the IS strategy should be linked to significant contexts at all levels, and that the formal rational perspective is inadequate to describe the strategy formation process.

Several integrative multi-level frameworks developed to frame ICT contexts and processes in developing countries were introduced when introducing the research problem in Chapter 1. Korpela et al.'s (2001) Two by Four + History framework is an output from The Informatics Development for Health in Africa (INDEHELA – Context), an ongoing programme between Finland and four African countries to build appropriate software for hospital information systems through action research

(Korpela et al., 2004). Others were Alvarez's (2003) interpretive integrative framework to conceptualize social change in large scale information systems, Corea's (2007) behavioral model of required competencies for IT innovation for societal growth, Sein and Harindramath (2004) model to reconceptualize the ICT artifact in the context of national development, and Gerhan and Mutula's (2007) recommendations for amendment's to Sein and Harindramath (2004) model for time and financial sustainability. In addition to multiple levels and dimensions, there is a discernible move towards explicitly integrating time in conceptual models.

3.4.2 SOCIAL SCIENCE THEORIES

Another class of interpretive research uses established social science theories to frame IS interventions rather than build new theories or frameworks. Checkland and Holwell (1998) terms them as *social system builders*. Integrative *social system building* approaches attempt to have both positivism's universality and interpretivism's sensitivity to subjectivity and different contexts. They are competing accounts of causality, change, epistemology, and ontology that call for researcher judgment and tradeoffs in selecting an appropriate approach. Examples include political economy with structural-historical analyses, and those based on established social science theories of structure and agency.

Political economy, structural-historical and cultural analyses

Wilson's (2004) Strategic ReStructuring (SRS) model is drawn from the political economy of ICT transformation in tricontinental countries. It was developed from empirical case studies in Brazil, China, and Ghana in an effort born of frustration with dominant positivist approaches. He identifies structures, institutions, politics, especially elite strategic behaviors, and Government policies, as important determinants of change. Each is said to have explanatory power and would count as independent variables in social science. Wilson (2004) acknowledges that breadth is obtained at the expense of depth, methodological eclecticism, and a lack of rigor. While he takes them in his stride as necessary intellectual tradeoffs in conventional approaches, it does raise the question whether it is too high a price.

A related approach is Berman and Tetley (2001) who attribute ICT problems in African governments to colonial history and cultural practices that resulted in malformed bureaucracies in newly independent states. They advocate an integration approach that combines culture analysis with logic based analysis. This is similar to Heeks' (2005) Onion-Ring model that links technology to wider organization reform goals. It is an attempt to integrate analytically social and political aspects of information systems with its technology linked rational logic imperative. Berman and Tetley (2001) call for substantial reform of the education and recruitment of civil servants but do not discuss the modalities of such reform. Long-term effects of colonialism in societies supposedly in transition from traditionalism to modern states on individual agency are implied but not examined except for a comment on civil servants training. They concur that the best way to approach tricontinental country institutions of governance is to carry out an integrated analysis of: 1) Culture, the social and political aspects of information systems; and 2) The logical imperative of technology. ISR employs established social science theories for integrated analysis of behavioral and structural aspects of social reality.

Structuration and Actor Network Theories

Structuration Theory and Actor Network Theory (ANT) are social science theories that have been widely adapted for IS research (Heeks, 2001b, Jones et al., 2004, Orlikowski and Robey, 1991). Structuration Theory relates structure and agency in a coherent conceptual schema with the notion of *duality of structure* whereby social structures are said to be both medium and outcome of social interaction (Giddens, 1979, Giddens, 1981). Structure and agency are conceived as existing in dialectical interplay making the choice between interpretive and positivist approaches spurious. In Structuration theory, structures have only an abstract virtual existence until interpreted or enacted by agents. Hence "it is thus more appropriate to speak of social systems as *exhibiting* structural properties that are produced and reproduced through the interaction of human actors, rather than as *having* structures"(Orlikowski and Robey, 1991).

Giddens identifies structures of meaning, power, and moral sanction as sufficient to analyze all human interaction. Social structure and human agency realms are linked

through three modalities of structuration: interpretive schemes, resources, and norms, to result in structures of signification, power, and legitimation respectively. Early works by Orlikowski and Robey (1991) and (Orlikowski, 1992) developed a structurational model of technology. Devadoss et al. (2002) develop a layered E-Government transformational framework in Singapore. Adaptive Structuration Theory (AST) is an extension by DeSanctis and Poole (1994) with the additional concepts of 'spirit' and 'appropriation' aimed at Group Decision Support Systems. Sørnes et al (2005) use AST to develop a reflexive model of ICT practices.

Structuration theory has also come in for some criticism over perceived shortcomings in ISR. Rose' (1998) evaluation of the contribution of Structuration theory to the information systems discipline found its abstract character a great limitation to researchers' attempts to operationalize it. A major criticism is that it makes only oblique references to organizations as rules and resources (Ackroyd, 2000, Rose, 1998). Archer (1995) is particularly critical of what she terms central conflation of structure and agency in a timeless abstraction, which diminishes analytical capacity. While it can address the reproduction of social systems, it cannot explain historical change or the crucial question of "why things are so and not otherwise" (Rose, 1998). Along these lines, Cohen (1998) in a favorable review of Giddens acknowledges that its implicit presumptions of social stability and Eurocentric character limit its utility in situations of rapid change and uncertainty.

Rose (1998) finds Orlikowski's (1992) structuration model of technology extension as too broadbrush a style of theorizing, and that DeSanctis and Poole's (1994) AST appeals to a positivist research tradition Giddens would not endorse. Giddens defense for the 'too abstract critique' is that the theory is only meant as a 'sensitizing device' without methodological implications, a defense Rose (1998) finds unconvincing. An additional problem when evaluating Structuration Theory in ISR is the little impact its more sophisticated concepts of time-space distantiation, class structuration and the stratification model have had. Rose (1998) attributes this bias to a diagram oriented culture in IS, unlike the prose culture in sociology. Despite the cited limitations, it is reasonable to suppose that Structuration theory has yet more to offer IS research.

ANT was developed over the 1980s by Michel Callon, Bruno Latour, and James Law. It conceptualizes social systems as heterogeneous networks of human and non-human actors like information technology artifacts. Actors are treated symmetrically whether human or non-human which gives ANT its distinctive character (Doolin and Lowe, 2002). ANT is inimical to any form of structuralism because it is the complex interplay of these heterogeneous forces that give rise to the present configuration of the 'network' (Latour, 2004, Stanforth, 2006). An important distinction is that between ANT's *translation* model of power, and its *diffusion* from a central source with positivism.

The use of ANT in IS relies on texts and narratives to show how the actors play out over time and can bring out fresh perspectives on technology and change far removed from technological determinism. Monteiro (2004) argues that IS should be *domesticated* rather than *implemented* similar to other technologies whose present use could not be predicted at the time of innovation. Terms like implementation and use are said to be underspecified since they do not tell us how it is used and implanted. He cites automatic teller machines, electricity, mobile phones and the Internet as technologies whose present use can only be understood interwoven in the social fabric. He further cites the use of the internet as part of identity formation for local sites of a global firm that once were like step children; with the internet, they resume their identity as members. ANT has been widely used in IS studies to frame contextual and cultural issues in diverse areas like E-Government (Heeks and Stanforth, 2007, Stanforth, 2006); enterprise resource planning (Scott and Wagner, 2003); and business process change (Sarker et al., 2006).

Researchers often combine Structuration Theory's capacity for abstraction with ANT's empirical emphasis in developing models of IS change. Using this approach Chae and Poole (2005) develop a model for the 'fine-grained' analysis of emergent change in large scale systems that takes into account pre-existing systems. Similarly, Braa and Hedberg (2002) approach to health information systems in South Africa is an innovative action research design using ANT and Structuration Theory which they term *multilevel cultivation*, where:

Cultivation includes the enrolment and alignment of multiple actors in the IS network by enabling the translation of their interests in the network. Cultivation is thus about negotiations and brokering between actors at multiple levels in the design and development of information systems and standards.

This is a framework for local adaptation and continuous learning. According to the researchers, cultivation has been applied in other regions and countries to negotiate tensions between standardization and localization in health information systems.

Unlike Structuration theory ANT pays attention to time but does not make ontological distinction between people and inanimate objects resulting in a ‘flat ontology’ (Mutch, 2002). This would preclude the possibility of critique since ethical considerations are precluded by its agnosticism to the nature of actors involved in a controversy. In contrast Doolin and Lowe (2002) argue that such agnosticism in the process of tracing out relations without prior distinctions may yield critical insights on the assumed, mundane, and status quo. The very act of revealing is critique.

A second criticism is that in practice ANT is too tied to textual analysis to be effectively distinguished from post-modern forms of interpretivism (Mutch, 2002); Latour (2004) considers the text as analogous to a scientist’s laboratory. A third difficulty for ISR is the substantive variety in how researchers use and interpret ANT with varying emphases on the A, N or T, and even the hyphen, with the originators at times expressing a sense of frustration (Stark, 2001). ANT has drifted over the years from a position in the social study of technology to a social theory, which neither of the founders ever intended (Doolin and Lowe, 2002). Mutch (2002) attributes ANT’s apparent preference over critical realist methodologies (which he favors) by IS researchers more to better storytelling and the generally difficult writings of Critical Realism. This will be the final integrated approach to IS in our discussion.

Critical Realist frameworks

The Critical realist paradigm relies on analytical dualism whereby structure and agency are analyzed independently but in dialectical relationship (Willmott, 1997). It has been elaborated into workable social frameworks such as the Morphogenetic Approach, Transformational Model of Social Activity (TMSA) and Methodological

Realism (Archer, 1995), and the Strategic Relational Approach (Jessop, 2005). These are dialectical modeling frameworks that explicitly include time to generate complex social entities through emergence, within which we can substantively theorize relationship between people, information systems, organization and society. Although few critical realist empirical studies are as yet available in ISR it has been proposed as an attractive alternative (Dobson, 2001, Mingers, 2004b, Mingers, 2004c, Carlsson, 2003b, Carlsson, 2003a, Carlsson, 2005).

Some studies relevant to ISR include Wong (2005) who used the Morphogenetic approach to make sense of organizational innovation as a complex, dynamic, multilevel phenomenon with complex structural, cultural and agential interactions. Trosper's (2005) case study of fire prone forests attempts to unite social and ecological systems under a critical realist theoretical foundation. Silva and Hirschheim (2007) relate Strategic Information Systems to an organization's deep structure in a developing country using a punctuated equilibrium model. They relate information systems and change to dynamic relationships between the formal system, external contingencies like funding, elections, and the arrival of newcomers to a project, within a coherent framework. This parallels critical realist methodology in giving simultaneous attention to structure, culture and agency but differs significantly in epistemology since it is a representation¹¹ of phenomena with predefined constructs (punctuated equilibrium). Critical realist methodologies on the other hand seek explanation in the form of a fallible account of real mechanisms that would account for observations (Bhaskar, 1998, Collier, 1998).

Critical realism as a philosophy has been controversial and raised many pertinent issues to social scientists. Some sources of misunderstanding and objections are discussed in detail at the end of Chapter 9. Some of these were addressed or resolved in time as critical realism evolved to become a richer dialectical system. Critical

¹¹ The *representation* critique was levelled at BENBYA, H. & MCKELVEY, B. (2006) Using coevolutionary and complexity theories to improve IS alignment: a multi-level approach. *Journal of Information Technology* 21, 284-298. in KALLINIKOS, J. (2006) Complexity and information systems development: A comment on Benbya and McKelvey. *The Blog of Dr.K* (<http://the-blog-of-drk.blogspot.com/>). He objects to their application of complexity theory concepts to the problem of strategic alignment in information systems; punctuated equilibrium is closely related to the concept of unpredictable radical change in complexity theory.

realism stakes a claim in ISR too as an ‘underlabourer’ for science (Bhaskar, 1978, Bhaskar, 1986).

3.4.3 KEY OUTCOMES FROM INTERPRETIVE AND CRITICAL IS RESEARCH IN DEVELOPING COUNTRIES

Several issues have emerged from as important in developing country IS research. They would be key considerations during project conception and design, and to outcomes in terms of success, failure and sustainability.

Local adaptation and cultivation

IS projects are in most cases designed in developed countries for implementation in developing countries. Theoretical and empirical studies have indicated the need for local improvisation or adaptation for higher chances of success (Heeks, 2002b). Corea (2007) introduces the notion of ‘artfulness’ in IT innovation to overcome the problem of IT artifact concretization in one context and its realization in another non-isomorphic context. Local adaptation requires local shaping of new cultures implicit in a proposed ICT initiative (Kimaro and Nhampossa, 2005). Part of this requires that local users be incorporated in the development process, and their capacity be enhanced for effective adaptation.

A related finding is preference for a cultivation approach to information systems development (Braa and Hedberg, 2002, Kimaro and Nhampossa, 2005). Design would be considered rather as the cultivation of networks and infrastructures starting from the installed base. An extensive case of what amounts to cultivation is Rensburg et al.(2008) description of gradual shift in research focus from technology as in the case of failed telecenters, to creating networks of community based ICT-enabled sustainable micro-enterprises.

Balancing standardization vs localization of tech

The need for local adaptation of existing technologies creates an associated problem of balancing standardization and localization when operations cut across regions and countries. Too much standardization means the technology may not work well locally, while too much adaptation leads to higher costs and may lead to pockets of

unwieldy and incompatible systems. Braa and Hedberg (2002) and Thompson (2002) suggest a cultivation approach to negotiate these tensions.

Importance of IT artifact conceptualization

At the heart of all ICT in development is an implicit or explicit conception of the 'IT artifact'. According to Corea (2007) this has varied from the very technical that tended to overstate the potential impacts of technology on society, to socio-technical models where it is understood in the context of its realization. His proposal is for an artifact and behavior that facilitates a learning approach to IT innovation for social development. Sein and Harindramath's (2004) proposal is ultimately concerned with outcomes in terms of human development, of which they are silent on what is desirable as development paradigm. It would seem that IT artifact conceptualization is inseparable from our value systems as far as human development is concerned.

3.5 CONCLUSION

Chapter 3 was a survey of contemporary ISR paradigms with reference to ICT4D. It was noted that there is a theory-practice divide within mainstream ISR. Differences between developed and developing country contexts form the basis for much ICT4D research since most technology is designed in developed countries for use in the less developed. Positivism is the dominant research paradigm in west more from academic researchers' bias than relevance to practice. Interpretive context sensitive research dominates in developing counties.

Positivism is associated with diffusionism and linear developmental progress that have been criticized for their Eurocentricism and apologetic, agnostic or forgetful stance towards colonialism and neocolonialism (Biccum, 2002, McMaster and Wastell, 2005). The core-periphery asymmetry may explain the prevalence of 'problem-paradigm' and failure as themes in developing countries' ISR despite insufficient hard evidence of greater project failure. A critique of social science positivist models that rely on statistical significance is that their prescriptions are silent on what *matters* to people; they test qualitative theorems using quantitative

techniques with arbitrary criteria from a human point of view (McCloskey, 2002, McCloskey and Ziliak, 2007).

Interpretive studies shed light on complex contextual and subjective human factors often overlooked by positivist methodologies. They do not aim at coming up with general abstract theory but to draw attention to submerged discourses and alternative rationalities (Avgerou and Madon, 2004). However they may not explain why technology actually works because they concentrate on subject-subject relations. Critical IS studies sustain an important emancipatory intent for developing countries. A challenge to these type of research may lie in methodological ambiguities and lack of clarity on what it means to be critical (McGrath, 2005).

Integrated interpretive or critical studies have proved the most important in developing countries with many proposals of empirically developed frameworks. The most recent have multiple levels and dimensions, and attempt to explicitly incorporate time. Established social science theories have also provided a foundation to relate social structure to human agency, and context to processes to understand IS innovation in developing countries. Structuration Theory, ANT and Critical Realism differ in epistemological and ontological assumptions and were discussed at length. Researchers find Structuration theory rather abstract, while ANT is too close to post-modern forms of interpretivism in the practical usage of texts and narratives (Mutch, 2002, Rose, 1998).

Critical realist frameworks are a controversial alternative for ICT4D but may help resolve observed theory-practice inconsistencies (Smith, 2006, Smith, 2005). The main difference with other frameworks is that ontology rather than epistemology takes precedence. For these reasons it was chosen as theoretical foundation for this study. In Chapter 4 we discuss it more extensively in the light of the postcolonial critique of modernity.

PART II THEORETICAL FRAMEWORK

CHAPTER 4 ICT4D reconsidered: critical realism and postcolonial perspectives

CHAPTER 5 Research design and methodology

CHAPTER 4 ICT4D RECONSIDERED: CRITICAL REALISM AND POSTCOLONIAL PERSPECTIVES

Chapter 4 reconsiders the conceptual foundations of ICT4D in the tricontinental states ‘from the margins’ of modernity with Critical realism. After an overview of critical realism we present an alternative perspective on knowledge and modernity using postcolonial arguments. These call for an epistemic shift from Eurocentric to local or submerged discourses in re-conceptualizing ICT4D. The formulation attempts to bridge the gap in understanding for interventions undertaken in societies with recent histories of subjugation that postcolonial theorists consider to be in need of emancipation. Critical realism’s ‘dialectic of freedom’ charts out a directional process towards freedom as desirable change. Ultimately it would result in change and actions rooted in agents intervening in historical reality as free persons.

4.1 CRITICAL REALISM AND PHILOSOPHY OF SCIENCE

Philosophy and metaphysics are unavoidable and consequential to scientific practice. They give us confidence that our efforts at improvements are useful to provide the basis for coherent research (Dobson, 2001). If they are not made explicit they will be implicit and possibly ‘bad’ (Schumacher, 1974:74-5). This is crucial to information systems that are socio-technical systems with a dual nature between human organizations and applied computing. Evaluating their risks and benefits is termed as beyond the ‘calculable behavior’ of policy makers, new conceptual vocabularies and epistemological fundamentals for the phenomena may be necessary (Avgerou et al., 2004). Weber (2004) indicates that justifying research outcomes for any approach is crucial as he reflects on the ‘paradigm wars’ between positivism and interpretivism. It requires more than appeals to reasonableness and commonsense for it touches on logic, value preferences, and ethics, implied in the way a given approach models and communicates the world. Validation of claims to knowledge has additional implications central to individuals’ sense of identity and claim on societal resources, e.g. research grants and careers (Chen and Hirschheim, 2004). Contestable value

judgments are unavoidable when choosing between competing theories and adequate philosophical construction becomes inescapable as the final recourse in scientific explanation (Cilliers, 2000, Okasha, 2003). Critical realism is but one of the more recent innovations in philosophy of science for ISR to explore.

Critical Realism is a meta-critique of positivism as ideology (Bhaskar, 1986). Schumacher's (1974) critique of orthodox economics in the best selling *Small Is Beautiful* anticipated themes in critical realism. Schumacher sought a metaphysics that gives inner clarity to people's basic convictions despite limited knowledge of facts and theories. In the process he anticipated many critical realist notions such as *depth ontology* and *epistemological relativism*. He rejects the assumptions of *system closure* and *reductionism* as concerned only with *convergent problems*, while *divergent problems* are the "real stuff of life" (pg 81). He deplores the preclusion of *ethical issues* of morality by a denial that society and humans have different levels of being, critical realist notions of *stratified reality* and *emergence*. Other anticipatory contributions were the Marxian/historical and structural reformulation of political economy by Ferdinand Braudel and the Annalles school historians (Clark, 1990), Immanuel Wallerstein (1991) and Samir Amin (Ruccio and Simon, 1992). These are usually classified as heterodox economists and are marginal to mainstream economics. Ackroyd and Fleetwood (2000) retrospectively ascribe as being in tune with critical realism to names such as Marx, Weber, Durkheim, Commons, Veblen, Mannheim, Mills, Karl Polanyi, Bourdieu and Chomsky; they also indicate that institutional theory anticipated realism. Critical realism therefore challenges orthodoxy with metaphysical arguments that bring together many previous lines of enquiry.

Critical realism arose from Roy Bhaskar's attempt to explain underdevelopment within orthodox economics for his doctoral studies (Norris, 1999). He found that orthodox economics' commitment to an empiricist epistemology forbade discourse about ontology that was important to his enquiry. Subsequent study under leading realist Rom Harré led Bhaskar to a new philosophy *for* science from a reconsideration of seminal works by Hume and Kant (Bhaskar, 1978). Critical realism is by now a broad internally consistent philosophical system that attempts the transcendence of

various dualisms. It has evolved over four stages or *moments* each corresponding to a Bhaskar text as follows (book title in parentheses):¹²

4.1.1 TRANSCENDENTAL REALISM (A *REALIST THEORY OF SCIENCE*)

Transcendental realism is a reformulation of philosophy for the experimental sciences where Bhaskar sets out the principal critical realist arguments for *depth realism* in social reality, the *transitive* and *intransitive dimensions*, and against what he terms the *epistemic fallacy* and *anthropocentric bias* of western philosophy. Knowledge is obtained in answering the transcendental question: “What must the world be like for science to be possible?” that can be established by way of a philosophical argument about ontology. Philosophy thus regains a critical role on how scientific knowledge is actually generated, in contrast to empiricist based approaches that address only the *justifiability* of knowledge claims.

Transitive and intransitive dimensions

Critical realism distinguishes between two realms of scientific knowledge: the transitive and intransitive dimensions. The intransitive dimension comprises things that do not depend on human activity; the transitive dimension is of things that are related or in some way affected by human beings. This distinguishes our knowledge which is changeable from the objects of such knowledge, said to be real and that do not depend in any way on our knowing them. Hence critical realism admits *ontological realism* and *epistemological relativism*, a relativism constrained by the possibility of attaining true knowledge of real objects.

The Epistemic fallacy and anthropocentric bias

To sustain the distinctions of knowledge above, Bhaskar revisited founding texts of western epistemology. Kant’s Copernican revolution was a synthesis of Cartesian rationalism and Humean empiricism to set out the *a priori* conditions for knowledge. Crucially it also resulted in what is termed the Kantian cleavage of objective and subjective realms of knowledge (Quine, 1951). Together with Newton’s discoveries and the scientific method, they laid the foundation for western intellectual and

¹² The summary of the critical realist movement in the next sections is drawn primarily from DEAN, K., JOSEPH, J. & NORRIE, A. (2005) Editorial: New Essays in Critical Realism. *New formations*, 56, 7-20.

industrial progress, though with a ‘severely deformed metaphysics’ for human society as a whole to thrive according to Schumacher (1974). Kant’s resolution of Hume’s empirically founded skepticism and Descartes’ rationalism resulted in transcendental idealism that continued the neglect of ontology in what Bhaskar terms the *epistemic fallacy*. This is “the idea that one can reduce or analyze knowledge in terms of being” (Norris, 1999). The epistemic fallacy “screens the role of theory, on the one hand, and of knowable things, on the other, in the constitution of facts and experience” (Bhaskar, 1986:296). Reified facts effectively rationalize theoretical status quo in normal science.

Kant also placed man at the center of knowing, providing modernity’s *anthropocentric bias* so that things are either scientific or voluntaristic, which stems from empiricism that “the world is what men can experience” (Bhaskar, 1978:58). This has the ideological consequence from the scientific practice point of view, that “whatever men currently experience is unquestionably the world” (pg 58). The epistemic fallacy and anthropocentric bias lead to what Bhaskar (1978:61) terms ‘idols’ – “false conceptions which cause men to see, in philosophy, everything in relation to themselves and their present knowledge”.

By transposing Kant’s epistemological question into an ontological one: “What must the world be like for science to be possible?” he opened the way for an alternative *philosophical ontology*. Both positivism and interpretivism are perceived as committing the epistemic fallacy, which allowed them to co-exist in complementary contradiction for a long time. Bhaskar also rejects the implicit acceptance of the Humean constant conjunction of events in both philosophical traditions in causal explanation. Instead he posits a real stratified ontology with generative mechanisms that give rise to events and empirical observations (Collier, 1994). For critical realists what really matters are the mechanisms, the rest are merely observable epiphenomena that ought not to be confused for, nor equated to, the underlying reality.

Depth realism, mechanisms, and social reality

From the distinction in the two dimensions of knowledge, it follows that social reality is divided into domains with varying degrees of access as shown in Table 4-1.

Empiricism only recognizes the *empirical*; Bhaskar adds the *actual*, and the *real*. The domain of the actual is composed of events and experiences and is the result of a multiplicity of underlying real *mechanisms*. Not all events are experienced, and not all mechanisms are actualized; hence in general, if D_i is a domain for $i = (r, a, e)$ (real, actual, empirical); then $Dr \geq Da \geq De$ (Collier, 1994).

Table 4-1 Domains in Social Reality

	Domain		
	Real	Actual	Empirical
Mechanism	X		
Events	X	X	
Experiences	X	X	X

Source: Bhaskar (1978:13)

The idea of mechanisms allows critical realism to ascribe causality to something beyond Humean empiricism that rejects anything not experienced from knowledge. When events occur, some structure has generated powers that give rise to the event; the structure(s) is said to constitute a *generative mechanism* for the event in critical realist terminology.

Since experiences and events in realist philosophy are in the domain of the empirical or the actual, analysis involves the critical exploration of underlying mechanisms in the domain of the real that would give rise to the events and observations. One can always go deeper to reveal different explanatory levels or *strata* in Bhaskar's terminology; stratification is at the level of the real in mechanisms, not in things or events (Collier, 1994). For example a biological entity is unintelligible without chemistry, and at a lower level, physics; yet it is not reducible to chemistry, nor is

chemistry reducible to physics. Depth realism and the idea of mechanisms call for a re-evaluation of what we call science and its practice as is further explained.

Emergence and explanation in open systems

Higher levels in the stratified reality are said to be *emergent* from lower levels and are not reducible to them. The critical realist account of social reality is as *open systems* unlike empiricism that requires closure for scientific explanation. Scientific experiments are necessary as artificial closures for prediction to be possible. However in open systems there is asymmetry between explanation and prediction since there is no guarantee that the conditions under which the explanation was obtained will hold. Scientific analysis is valuable because it has the potential to uncover deeper explanatory mechanisms in the stratified account of nature in progressive explanations, “‘model’ is simply a word for a hypothesized generative mechanism”(Collier, 1994:68). Scientific explanation now takes the form of historical causal analysis in four steps:

- a) *Resolution* of complex event into its components (causal analysis)
- b) *Redescription* of component causes
- c) *Retrodiction* to possible (antecedent) causes of the components via independently validated normic¹³ statements
- d) *Elimination* of alternative possible causes of components.

(Bhaskar, 1998:129)

Collier (1994) explains that this is a variation on normal scientific practice which begins with a description and ends with the empirically-controlled identification of a causal mechanism at work, or ‘answer’, indicating experimental closure. The new approach suggests that we always begin with an existing body of concepts and constructs that are then revised continuously. Transcendental realism as a philosophy, accepts ontological realism and epistemological relativism with a new approach to explanation in open systems. The term critical realism (CR) is the conjunction of transcendental *realism* (TR) and *critical* naturalism (CN) which was the next stage.

¹³ Normic laws have the form “if A, then *normally* B.” in SCHURZ, G. (2001) What Is 'Normal'? An Evolution-Theoretic Foundation for Normic Laws and Their Relation to Statistical Normality. *Philosophy of Science*, 68, 476-497.

4.1.2 CRITICAL NATURALISM (*THE POSSIBILITY OF NATURALISM*)

Critical naturalism was the second moment as the logical extension of transcendental realism into the social sciences to answer the question “What properties do societies possess that might make them possible objects of knowledge for us?” (Bhaskar, 1998:25) The principal argument for naturalism turns on recognizing reasons as causes in scientific explanation of intentional and causally efficacious human actions. Secondly society is not reducible to people, rather social forms pre-exist people and can therefore be studied as autonomous entities with causal powers. Human agency is both enabled and constrained by objective social realities. So the manner in which humans form beliefs and the nature of such beliefs becomes a legitimate subject for scientific analysis, and the entry point for explanatory critiques and the possibility of emancipatory action.

Critical realism has an axiological dimension in the construction of explanatory critiques to reveal false beliefs that constrain human freedom. Beliefs are social objects in critical naturalism. Ideology can be demonstrated by showing beliefs to be false or superficial and “in addition, being able to give an account of the *reasons* why the false or superficial beliefs are *held*...” (Bhaskar, 1998:53). Falsehoods may be inserted in gaps between the real, the actual, and the empirical. Of particular significance for critical realists are systemically generated and engendered ideologies in capitalist societies. By delineating the origin and falsity of such beliefs it is hoped that people will increase their powers to distinguish between necessary and unnecessary constraints for emancipatory action.

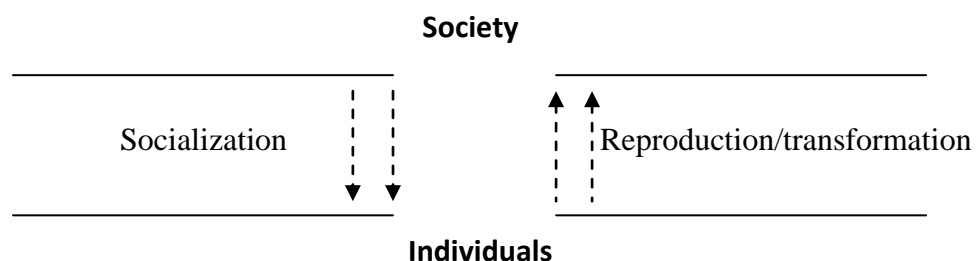


Figure 4-1 Transformational Model of Social Activity

Source: Archer (1995:155)

Bhaskar developed the Transformational Model of Social Activity (TMSA) shown in Figure 4-1 as a preliminary dialectical model for the interplay between subjective human agency and objective social reality (Archer, 1995, Bhaskar, 1998). TMSA extends the concept of emergence to social systems to explain complex phenomena in a non-reductive manner and was revised in subsequent works. The next stage was full dialecticization for a better account of social reality and to resolve philosophical issues raised by the division between individual and society, and the apparent absence of historicity.

4.1.3 THE DIALECTICAL TURN (*DIALECTIC: THE PULSE OF FREEDOM*)

Critical realism raised many questions and had what some termed antinomies in its account of the ontology of social structures (Cruickshank, 2004). Evidently Bhaskar was aware of these tensions; Dialectical Critical Realism (DCR) is a deepening and elaboration of critical realism through complete dialecticization. DCR opposes ‘pure presence’ or *ontological monovalence* (similar to Derrida’s *logocentrism*) to stress the ontological primacy of absence; the concept of dialectic becomes the ‘absenting of absence’ as will be elaborated further below. The categorical inclusion of absence resolves many binary oppositional concepts in philosophy of science and social theory in a richer dialectical schema.

DCR is founded on *moral realism* and *ethical naturalism*, which extends it beyond critical naturalism to a spatio-temporal, moral, and truth (alethic) realism. Without these categories being would be de-totalized, Bhaskar considers moral irrealism as devaluing social life (Bhaskar, 1993). In the MELD schema of DCR Bhaskar sets out four degrees of critical realism with progressive dialecticization. Each degree has different categories (shown in italics below) that differ markedly from the Hegelian dialectic (thesis-antithesis-synthesis).

- a) 1M (**First Moment**) – *Non-identity*. This is similar to the earlier ontology of structure, stratification, emergence and change that generate apparent contradictions in social reality. 1M relates to material interactions with nature. 1M is dialecticized in 2E.

- b) 2E (**Second Edge**) – *Negativity*. Emphasizes absence and negativity. Change is conceptualized as absentings, and human agency as embodied intentional causal absenting. 2E relates to inter-personal relations.
- c) 3L (**Third Level**) – *Dialectical totality*. This logically follows from 2E where phenomena are seen as part of a total whole. Progressive absentings are remedied by resorting to a wider totality when we perceive them as part of a whole; 3L relates to social relations.
- d) 4D (**Fourth Dimension**) – *Dialectical praxis*. At 3L we attain theoretical understanding, now in 4D we attain transformative praxis, which relates to intra-subjectivity.

The MELD schema generalizes critical realism for human beings in history under the universalizing theme of the pursuit of human freedom through successive absenting. The ‘pulse of freedom’ is said to beat in every human and eventually becomes a movement to absent unwanted constraints.

The Social Cube of the ‘4-planar social being’ in four dialectically dependent planes now replaces the TMSA. These are: a) Material transactions with nature; b) interpersonal relations; c) Social relations; d) Intra-subjectivity. Thus it avoids ontological hiatus between individual and society evident in the TMSA, though it still retains the idea that individuals can still overcome even strongly disabling social structures to attain human freedom. DCR is therefore very different from Critical Naturalism but preserves it within a more generalized schema. The next moment was much more radical and most contentious.

4.1.4 THE SPIRITUAL TURN (*EAST TO WEST: THE ODYSSEY OF A SOUL*)

Bhaskar (2000) now makes a radical departure from his earlier ‘mundane’ concerns to a quasi-religious philosophy of meta-reality. It is a “reality about transcendence through the transcendence of reality”, termed Transcendental Dialectical Critical Realism (TDCR). Following the idea of a stratified reality he posits a human reality outside of ordinary experience, beyond society and even history. Our direct empirical world of embodied human relations is assumed to be dualistic since it is egocentric

'I', disconnected from our true human essence, which is connected as it were, to other humans, God, the world. Earlier expositions of social ontology would therefore be demi-real. Instead of freeing humans from constraints the aim for true human existence becomes self-realization and God-realization, ultimately giving rise to human flourishing in a eudaimonistic society.

Clearly the last moment is very contentious. Its quasi-religious premises and concepts drawn from Eastern (Oriental) and New Age religions are difficult to accept for most people, with many wondering whether this was the end of Bhaskar's philosophical system. I doubt the possibility its realization as envisioned for reasons beyond the scope of this study. However TDCR concepts are useful as a meta-philosophical system within which to frame higher level issues of ethics, morality and spirituality.

Selective appropriation of the movement is common amongst researchers associated with critical realism. Not all accept all the four moments and there is a lively ongoing debate though workshops, journals, conferences, and on the internet. Some are uncomfortable with the universalizing Kantian and Habermasian elements in the last two moments, with arguments for an inchoate ethic similar to post-structuralism. Others feel that freedom ought not to be a universal but rather rationed amongst other priorities. This study draws from the first, second ($TR+CN=CR$) and third (DCR) moments. In the next section I illustrate how critical realism may contribute to aspirations for emancipation and freedom through ICT4D initiatives in postcolonial developing countries.

4.2 CRITICAL REALISM AND ICT4D

It is significant to this study that when reviewing TDCR Patomäki (2002) identifies Roy Bhaskar with the postcolonial movement and his philosophy as part of those signaling the end of Western cultural dominance. Bhaskar (1993) presents it as a new tradition in opposition to Hegelian or Kantian philosophical systems that underpin modern Western civilization. ICT4D change brings diverse issues of ideology, social or material nature together that are amenable for exploration with critical realism's

alternative account of the constitution of social reality in time (Sumner and Tribe, 2004).

4.2.1 ONTOLOGY AND SOCIAL REALITY

Forty years after his death, psychiatrist, postcolonial, and revolution theorist Frantz Fanon's popularity and relevance continues unabated for, "...uncompromisingly illustrating that politics and epistemology, metaphysics and culture, psychology and technology, ontology and medicine, and the racial and gendered dimensions of social life are deeply intertwined" (Goldberg, 1996:180). ICT4D projects and programmes in tricontinental countries illustrate this complexity. Critical realism privileges ontology over epistemology allowing researchers to delve into complex social realities in valid scientific enquiry.

Deep ontological commitment is an axiom of critical realism crucial to disentangling complex social realities since "...It is by virtue of an emergentist ontology that social theory per se is possible. To deny a stratified world is to deny the very possibility of social theory." (Willmott, 1997:101) Such commitment is warranted for additional reasons drawn from complexity theory that reality is not simple; it is probably better conceived as open, emergent and structured (Prigogine and Stengers, 1984, Merali, 2004, Capra, 2002, Capra, 1997, Kauffman, 1995). Harvey (2002) and Byrne (1998) show that critical realism is consistent with such a world view in the social sciences. Both positivism and relativism (interpretivism) accept Humean causality and a Newtonian world view with a monistic ontology (Bhaskar, 1998).

In a world that is arguably open, causality cannot be simple (Sayer, 2000); neither should our account of reality whose effects are manifest. Understanding a complex deep account of global social reality divided into 'developed' and 'less developed' regions requires us to explore imperial conceptions of knowledge, space and time. We shall contemporary critiques of western modernity from postcolonial theory to get one view from developing countries (Escobar, 1995, Matthews, 2004).

4.2.2 KNOWLEDGE, MODERNITY, AND COLONIALITY: A VIEW FROM MODERNITY'S MARGINS

Walsham's (2005a) 'polemic' reflecting on the difficulties of conceptualizing development and its purposes for IS research sets the tone for this section. He discusses issues on global inequalities, ideology, discourses, gender, and the problem of the excluded fourth world of 'failed humanity' in Castells (2000a). More importantly, what development could mean including personal transformation to become a Gandhi or a Mandela, all in the context of critical ISR. He proposes a reconsideration of the goals of development towards broader aims of humanity's growth and development to make a better world with ICT. This is a difficult challenge that would change almost every area of critical ISR, its teaching and dissemination. In this section we consider what counts as knowledge in modernity and its potential to address such issues as development globally, from the point of view of people in the 'third world'.

Postcolonial theory is a broad church with controversies that pit phenomenology, postmodern and poststructural writers against essentialists, nationalists and Marxists (Ashcroft et al., 2002). Most postcolonial writers draw on variants of Continental philosophy. Achille Mbembe's provocative works on contemporary Africa using French post-structuralism and phenomenology and the vigorous reactions in support and opposition are a good example (Murunga, 2004, Weate, 2003, Mbembe, 2002, Mbembé, 2001, Adeeko, 2002, Osha, 2000, Dirlik, 2002). The perspective presented here is a specific one from Latin America and is associated Enrique Dussel's liberation philosophy (Dussel and Mendieta, 2003). It was selected because of its historical approach to modern world conditions, is well elaborated, and evident affinity to Critical realism's critique of positivism and resultant modernity.

According to this perspective on knowledge, contemporary philosophy as generally taught in most universities is ethnocentric, specifically, Eurocentric, for historical reasons of empire and conquest. Such are bound to fail somewhere to the extent that they embody their spatial origins (Maldonado-Torres, 2004). Hence while Heidegger's ontology of being was an advance from philosophy's thrall to

epistemology, it was essentially Germanic and Eurocentric (Maldonado-Torres, 2004, Sheehan, 1999). Maldonado-Torres (2004:36) further insists that “A historical vision that combines time and space is needed” to correct for the “sickness of the west”, defined as the “forgetfulness of coloniality”, embodied in rational linear models of progress. Latin American scholars have explored the limits of western Greco-roman epistemology when it encounters “colonial difference” (Mignolo, 2002).

It is no longer possible, or at least it is not unproblematic, to “think” from the canon of Western philosophy, even when part of the canon is critical of modernity. To do so means to reproduce the blind epistemic ethnocentrism that makes difficult, if not impossible, any political philosophy of inclusion. The limit of Western philosophy is the border where the colonial difference emerges, making visible the variety of local histories that Western thought, from the right and the left, hid and suppressed (Mignolo, 2002).

More importantly for ICT4D interventions in social reality, modernity is indivisible from the exercise of power, termed the “coloniality of power” (Quijano, 2000). Quijano (2000) explains that colonialism was a specific period in the operation of coloniality as a matrix for the hegemonic organizing of society and knowledge production to given ends. He shows how social stratification on the basis of race and ethnicity is the enduring axis for Euro-American capitalist power throughout modernity.¹⁴

European philosophers such as Hegel and Kant, it is contended, reoriented conceptions of space and time to Europe as the epitome of human civilization, and also its future. To complete the picture they took Greece as the beginning of modern thinking, ignoring other contributing civilizations like China, Islamic scholarship, and Egypt to secure Europe’s patent on modernity (Dussel, 2003). Claims to exclusivity are common across the globe. Europe distinguished itself by projecting and establishing this vision of itself as “hegemonic within the new intersubjective universe of the global model of power”(Quijano, 2000). This colonial/racial matrix defined what was acceptable as knowledge even as colonial expansion met up with

¹⁴ A longer, deeper examination of coloniality, power and race as the sustenance of a western description-of-man and consequent ‘otherization’ of the rest is given in WYNTER, S. (2003) Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation-An Argument. *The New Centennial Review*, 3, 257-337.

and suppressed diverse peoples and ways of knowing to satisfy the rational postulates of the enlightenment and the new subjective redefinition of man:

Walter Mignolo perceptively identified one of the consequences of the “Big Bang” initiation of the “colonial difference” as that of the fact that, “in the imaginary of the modern/colonial world system sustainable knowledge . . . disregarded Amerindian ways of knowing and knowledge production that were reduced to curious practices of strange people and, in another domain were demonized.” (Wynter, 2003)

All alternate conceptions and temporal subjectivities of space and time are effaced. Only Asia escaped overt “epistemic suppression” and acquired the status of Europe’s Other to the Occidental as the Orient because its intellectual antecedence was undeniable; yet it was still reduced to a *referent* for Europe without epistemic independence (Quijano, 2000, Said, 1995). In this racial/ethnic hierarchy, the worst of were Sub-Saharan Africans and their descendants exported to North America.¹⁵

The ‘coloniality of power’ is still operating for it is said to morph and reconstitute itself to create new zones of inclusion and exclusion to sustain capitalist accumulation. The intersubjective element in relations of domination between Europe and its periphery emerges as culture, effectively hiding its operation (Quijano, 2000). It has been cited as possibly the logic behind the persistent 80/20 split in wealth distribution but 20/80 in division in population across the world, and the persistent issue of race in the west (Wynter, 2003). It may also explain the genealogy of IFIs imperial approach to developing countries in an ostensibly equitable and democratic world.

This critique of capitalism from its ‘exteriority’ would change the goals and principles of development, not just technique as we saw with Marxian or other critiques that are part of Eurocentric meta-narratives (Mignolo, 2002). It opens up the way for marginalized and suppressed knowledge, apart from the so far unproductive solidarity

¹⁵ Darwin’s still controversial Evolution Theory gave a whole new interpretation that ‘confirmed’ the racial hierarchy to racially minded anthropologists and ethnographers – Ibid. Included as late as the 1960s was Carleton Coon, President of the *American Association of Physical Anthropology*, the most influential anthropological association in the world. Darwin himself was against racism. WELLS, S. (2002) *The Journey of Man: a genetic odyssey*, London, Penguin Books.

with the European left. Foucault and Derrida's established critiques of Eurocentricism are said to be Eurocentric as they do not address the question of 'colonial difference' and the 'coloniality of power' with its the racial axis (Maldonado-Torres, 2004, Mignolo, 2002). As Dussel (2003:66) states, "...In general, every debate between rationalists and the postmoderns does not overcome the Eurocentric horizons". Wallerstein's (1991) World System theory fares better because it exposes elements of racial and ethnic stratification that sustain the capitalist world system, though it is not explicit about coloniality and remains firmly within the limits of European space-time epistemic possibilities. Jean-Paul Sartre comes off best in Maldonado-Torres (2004) amongst European philosophers because of his 'genuine' commitment to the cause of colonized peoples. His preface to Fanon's *The Wretched of the Earth* is a searing excoriation of 'western hypocrisy' warning about the consequences of long suppressed voices making themselves heard (Maldonado-Torres, 2006).

Western philosophy effectively places other ways of knowing and knowledge in a double bind. For example Continental Philosophy required that for African Philosophy to qualify as philosophy it had to be like western philosophy, in which case it would be of little consequence, or else it did not qualify as genuine philosophy (Mignolo, 2002, Mudimbe, 1988). Breaking out of this spell that links geography to epistemology calls for Mignolo and Tlostanova's (2006) "border thinking", thinking from the margins, or "an epistemology from a subaltern perspective" (Mignolo, 2002). It is not possible to theorize the limits of a western paradigm from within itself, rather subaltern positions look to a future as they think from the colonial difference. Before summarizing the implications of this critique for ICT4D we'll consider briefly the existential reality of postcolonial subjects under the coloniality of power.

4.2.3 POSTCOLONIAL SUBJECT AGENCY AND ONTOLOGICAL VISIBILITY

Critical intervention by human agents is possible only with a historically situated ontology. According to some post-colonial writers and researchers, western philosophy and derivative knowledge has served to sustain an historical amnesia that

ensures invisibility for oppressed or formerly colonized peoples (Goldberg, 1996, Maldonado-Torres, 2004, Stevens, 1996). Without ontological presence, Heidegger's 'being in time', and identity and reason as inherent in reality in the Hegelian sense, life itself becomes impossible (Giddens, 1995, Goldberg, 1996). This may provide clues for many tricontinental countries generalized malaise and incapacity in the face of opportunity (Goldberg, 1996, Lewis, 1996). Similar themes may be identified in the literature on the difficulties faced by African Americans' assimilation into American society (Shmitt, 1996).

The experience of racism, colonialism, and slavery, effectively "expelled" such peoples from history (Fanon 1986:106). Subsequent exercises in 'giving' freedom were carried out in such a manner that little actually changed. British Premier Harold Macmillan's famous 'Wind of Change' speech in Cape Town 1960 signified change in colonial policy to 'give' independence to its colonies as new states within a commonwealth of nations (Myers, 2000). Where there were liberation struggles like Kenya's *Mau Mau* that partially precipitated the change in British colonial policy (Myers, 2000), efforts at self-determination were thwarted through neocolonial manipulation. A native comprador class emerged that maintained close ties with former colonial powers such that not much changed for the average person as Fanon (1967) had anticipated.

These largely peaceful transitions denied these people and countries the basic conditions for ontological visibility¹⁶, that is the denial to fail on their own terms, the opportunity for self-determination and success, choosing their own principles; the master set the terms (Goldberg, 1996). Adeeko (2002) parallels Hegel's famous statement "it is solely by risking life that freedom is obtained" with the terse Yorùbá axiom "*ogun laye*" (existence is war). So the 'Negro' does not know the price of freedom, he is "...A slave who has been permitted to adopt the whole attitude of the

¹⁶ The Latin American situation is similar but much more complex since native Indian nations, African slaves, and mixed race individuals continued in subjugation to the small white elite that won independence from Spain and Portugal to create feudal racial societies that survive to this day. See QUIJANO, A. (2000) Coloniality of Power, Eurocentrism, and Latin America. *Nepantla: Views from South*, 1, 533-580..

master...white is a master who has permitted his slave to eat at his table...the black has been acted upon.” (Fanon, 1986: 219)

Hence for ontological and identity recovery in postcolonial societies, overcoming internalized enslavement is the appropriate point of departure for contemporary philosophy for marginalized regions:

“The hermeneutical tradition in African philosophy aims at reviving and appropriating the cultural and historical resources of the continent out of the needs and in the context of the present...an attempt to overcome, on the level of theory, the enslavement that still negatively and decisively marks from within contemporary African existence.” – (Serequeberham, 1996: 208)

It is the philosophy of the formerly colonized or oppressed struggling for justice and equality hence the validity of any scholarship or interpretation is contingent on “the validity of this struggle, of its justice and of its justness” (Serequeberham, 1996: 208). A victory for them would also free the ‘oppressor’ of the pathological desire to dominate and rediscover their own humanity (Freire, 1972).

With this perspective on knowledge we can explore Mignolo’s (2002) suggestion to ‘think from the margins’ in search for an ‘epistemology from a subaltern perspective’ for ICT4D using critical realism.

4.3 ICT4D KNOWLEDGE AND MODERNITY’S MARGINS

Critical realism arose from a failed attempt to explain underdevelopment using orthodox (positivist) economics by Roy Bhaskar, and its later developments are identified with postcolonial writings (Patomäki, 2002). It’s commonsensical appeal and carefully constructed arguments provide us a point of departure (Dobson, 2001). If as is apparent the social world is open, critical realism’s notions of emergence and a stratified reality would be useful as a framework to explore structure and agency essential to information systems research in complex contexts (Reed, 1997). Its explicit inclusion of freedom as a basic human desire resonates with development aspirations in ICT4D. In contrast, Bhaskar (1986:307-308) identifies positivism with bourgeois values, “...For positivism at once naturalizes and normalizes things and

reflects in an endless hall of mirrors the self image of Bourgeois Man. It is, one might say the house philosophy of the bourgeoisie...” This equating of positivism to “vulgar (that is unthinking) materialism” would mean that using positivist methodologies edges a society closer to materialism ideologically.

More importantly for tricontinental countries, ontological recovery calls for the epistemic divorce of philosophy from its geo-spatial origins, e.g. post-continental philosophy that transcends the Europe vs. others binary (Maldonado-Torres, 2006). The continued use of binary categories in ICT and development discourse may require problematization in research and may be rooted in history. Note that from this perspective on knowledge and modernity, tricontinental countries violent history of dispossession constitutes the “underside of modernity” (Dussel, 1993).¹⁷ Critical realism’s alternative methodology of historical reconstruction of real mechanisms may dispense with the “sickness of the west”, which is “the forgetfulness of coloniality”, and begin restoring people to history (Maldonado-Torres, 2004, Hay, 2001).

Bhaskar is cognizant of the difficulties critical realism faces as a movement in taking on the establishment. In his assessment, modern society is dominated by “...instrumental reason - by reification, by alienation, by master-slave relations”, and so has an “irrealist” categorical structure. Critical realists will therefore appear opposed to and be opposed by a pervasive ‘irrealism’ at all levels of social reality (Norris, 1999). While discussing the IT artifact Corea (2007), refers to various representational mechanisms within information systems such as discourses and narratives, discursive categories, interpretive schemes, cognitive frames and myths. Some of Bhaskar’s ‘irrealisms’ may be identified with such myths, described in Corea (2007) based on Barthes (1973) as “images or social representations of reality that depict, in attractive, simplistic terms, how things are or how they should be”. Corea (2007) identifies images of fast progress through rapid ICT uptake with myth making

¹⁷ Compare the case of women in BOULDING, E. (1992) *The underside of history : a view of women through time*, Newbury Park, Calif. ; London, Sage Publications.

practices of modern societies.¹⁸ ICT4D interventions such as E-Governance will likely carry elements of ‘irrealism’ from their origins in discourses about technology, development, governance, and liberal capitalism (Schech, 2002). Secondly they are developed apart from the social reality they are to be employed.

Beliefs formed on the basis of such myths are likely to be false though they may in the short run appear benign or even useful. Critical realism is concerned with false beliefs because they reduce or deny possibilities for human freedom and flourishing. Critical realism, when used as ‘border thinking’ promises to identify such false beliefs for the concerned postcolonial ‘developing’ country peoples to take emancipatory action. “The de-colonial epistemic shift, grounded in border thinking, aims at processes of de-colonizing of knowledge and being. De-colonizing¹⁹ being and knowledge is a way toward the idea that ‘another world is possible’ (and not alternative modernities)” (Mignolo and Tlostanova, 2006). It is the attempt to deal with ICT4D and its context from the colonial difference (the limit of Eurocentric epistemology), and to check the operation of the colonality of power that may still structure global inequalities for the benefit of western capital (Wade, 2004).

4.3.1 ‘BORDER THINKING’

“Border” thinking as Mignolo and Tlostanova (2006) call it begins in familiar spaces to colonized or enslaved peoples as *double consciousness*, the “sense of always looking at one’s self through the eyes of others” (Du Bois, 1903:3). Privileged European philosophers are able to conceive only a *single consciousness*, and at best, *an Other*, its non-being, alterity or negation (e.g. Habermas arguing for inclusion of the Other) (Du Bois, 1903, Siemerling, 2001). They make the point that it is predominantly white²⁰ scholars and intellectuals that enquire as to how to perform border thinking. By reflecting on why western Eurocentric scholars do not ask where the single consciousness dwells, its hubris and limits may be exposed:

¹⁸ See GODIN, B. (2004) The New Economy: what the concept owes to the OECD. *Research Policy*, 33, 679-690. as a possible case of such myth making.

¹⁹ Paralleling this is THIONGO, N. W. (1996) *Decolonizing the Mind: The Politics of Language in African Literature*, Nairobi, East African Educational Publishers. He attempted to jettison ‘colonial languages’ in literature but later went back to English. He is a political exile from Kenya in the US.

²⁰ Walter Mignolo is based at Duke University in the United States

The hubris of the zero point – by eliminating perspectives – prevents the possibility of asking: how can I inhabit at once both the zero point and that place which the zero point negates? Asking that question, ‘feeling’ that modern epistemology is totalitarian (that negates all other alternatives to the zero point), is the first step to border thinking. And it is also a dwelling that is no longer the House of the Spirit – i.e. the dwelling of modern European philosophy and science.

Notably, Bhaskar’s philosophical challenge arose from the margins in the attempt to study problems generated at the colonial margins (underdevelopment), which as it turned out could not be theorized adequately within established epistemology (Norris, 1999). Within information systems, the diffusionist paradigm that organizes ICT4D policy dialogue and research in a center-periphery power-knowledge system exemplifies the modernity-colonality axis. Critical realism’s uneasy relationship with the establishment underlines its ‘heretical’ impulse that would unsettle the modernity-colonality axis (Wynter, 2003). In Chapter 3 we saw that it is associated with failure oriented research, the digital-divide, and poverty discourses.

By querying the basic premises of such orientations, ‘border thinking’ with critical realism would open up new ways to construct ICT4D knowledge. ‘Thinking from the margins’ would a critical undertaking for all epistemic and corporeal spaces that feel in one way or the other excluded. For the tricontinental countries it is an existential matter, their choice is between continued acquiescence in the face of the colonality of power, or freedom. The ‘pulse of freedom’ assumed in dialectical critical realism to beat in everyone dictates that they pursue it vigorously (Bhaskar, 1993).

4.4 CONCLUSION

The dominant development discourse presents ICT4D as good and necessary for ‘poor’ people. Although there are many research studies that provide a contextualized understanding of IS innovation in developing countries, a technology diffusion paradigm emphasizing technology transfer to bridge the ‘digital divide’ and ‘reduce poverty’ continues to inform development policy. Technocratic development paradigm failures (including in ICT4D) have moved some development agencies like DFID (UK), SIDA (Sweden), and Danish International Development Agency

(DANIDA)²¹ (Denmark) to explore contextual and pragmatic alternatives that explicitly include power relations and local perspectives (Bjuremalm, 2005, Bjuremalm, 2006, DfID, 2004, Talyarkhan, 2004). Such efforts signal the need for new approaches to development that would address power relations, structural, and contextual realities.

According to the postcolonial critique outlined Eurocentric critiques of the status quo are bound to end in a stalemate because they share the same epistemological premises. Ultimately these are drawn from Europe's modern history of power and conquest that was accompanied by cultural and intellectual dominance of other peoples. Europe thus projects itself as the world's ideological and cultural centre for others to conform to. The export of technology to the periphery would also be that of a 'superior' culture, hence creating zones of technological and cultural inclusion or exclusion in the recipient society. Analysis of societal change arising from new technology should therefore be accompanied by that of power relations, culture and discourses, institutions, actors and their causal linkages.

An empirical critical realist investigation in a postcolonial developing country may give fresh insights including underlying 'subaltern' perspectives. The central analytical axiom in research would be a value such as emancipation and freedom for ontological recovery. Critical realism embodies such aspirations implied in ICT4D literature on human development and freedom, but difficult to realize within dominant metaphysical systems that may effectively 'de-totalize' being (Bhaskar, 1993). Ultimately, the goal is to overcome the myth²² based binary, dualist civilization Europe has established as hegemonic (Quijano, 2000).

Chapter 5 is a presentation and discussion of critical realist social science methodologies and frameworks, and a research design for empirical investigation.

²¹ DANIDA's approach is based on the Intermediate Technology Development Group (ITDG) approach to technology. ITDG was founded by E.F Schumacher, discussed in the introductory section to this chapter for his critique of European metaphysics that anticipated critical realism in *Small is Beautiful*.

²² *Myth 1*: Europe is the culmination of human evolution and civilization; *Myth 2*: Differences between Europe and non-Europeans are natural (e.g. racial) and are not due to a history of power. QUIJANO, A. (2000) Coloniality of Power, Eurocentrism, and Latin America. *Nepantla: Views from South*, 1, 533-580.

CHAPTER 5 RESEARCH DESIGN AND METHODOLOGY

Chapter 5 covers research design and methodology using critical realist social science principles. It combines a critical realist research framework (Morphogenetic Approach) with a subsidiary survey using Q-methodology to investigate the structure of discourse. Multi-methodology and triangulation are desirable in critical realist research and were employed. The main output expected was a historical analytical account of the change process from which inferences were drawn. The research domain is presented first to contextualize the discussion.

5.1 RESEARCH DOMAIN

Field investigations were done in Kenya, a promising candidate for a study of this nature given Young's (2001) description of it as an ideal postcolony in national and social character. Since independence in 1963 it has remained firmly within the western sphere of influence. Kenya was the very first 'developing' country in the world to be 'structurally adjusted' in the early 1980s. From the year 2003 the key government policy document has been the *Economic Recovery Strategy for Wealth and Employment Creation* (ERS), a revised *Poverty Reduction Strategy Paper* (PRSP), now tied to the UN Millennium Development Goals. ERS reflected the aspirations of the popularly elected NARC (National Rainbow Coalition) government after twenty four years of what may be termed a classic postcolonial 'African' dictatorship. ICTs feature prominently in Kenya Vision 2030, the most recent national development policy document released in 2008, for faster growth and global competitiveness.

Up until 2004 East African countries including Kenya were at the early stages of E-Government such as websites creation and the development of national ICT policies (Kaaya, 2004, APC, 2004). Kaaya (2004) noted that up to 40% of East African government websites were not updated at all from the date of publication possibly due to fundamental problems within public ICTs prior to going online. But over the past

two years (2005-2007) there has been considerable progress as reflected in the rising quality of E-Government websites and services, and in the vibrant telecommunications industry. Kenyans can now obtain national secondary school results over the internet or via mobile text messages. Kenya's mobile phone industry started in 1997 and registered one of the fastest growths in the world. It surpassed the fixed line network in 2000/2001 that basically stagnated over the period 2002/2003 to 2004/2005; fixed line rural connections have remained at 5 percent. In contrast the mobile network has broad national coverage and was 20 times the fixed line in the number of subscribers by 2006/2007 (Waema, 2007).

International bandwidth prices in East and Southern Africa are a major barrier to ICT growth. They are 20 to 40 times those in the USA and 10 to 20 times those in other 'developing' countries because the region relies on expensive satellite communications. It is the only region without optical fiber links to international networks (World-Bank, 2005b). Change for the better is expected over the next few years when several optical fiber projects in the Indian Ocean are complete (APC, 2007). Through IDA and the International Finance Corporation (IFC), the World Bank is promoting public-private terrestrial infrastructure projects to complement the ocean based international links for complete regional coverage (World-Bank, 2005b). If these work as expected, the region shall be able to offer internet based and telecommunication services like call centers and outsourcing at globally competitive rates.

Over the past decade Kenya's public sector has undergone substantive reforms towards efficiency and 'good governance'. These were New Public Management (NPM) approaches specified in IMF/WB loan conditionalities (Polidano, 1999). Developments in the national ICT policy process, E-Governance programmes and projects, are key components of this overall shift in policy emphasis (GOK, 2004). All public sector ICT is now classified as E-Government under an ambitious strategy in its early stages (Cabinet-Office, 2004). Progress in national ICT policy formulation and E-Government implementation are closely related through key personnel and the implications of one for the other. The national ICT policy process was dogged with controversy for over a decade culminating in a draft described as ill coordinated, non-

inclusive and geared to foreign interests (APC, 2004). Subsequent efforts invited greater participation with financial support from international development agencies and western governments in a multi-stakeholder process that is part of the subject matter for this study.

5.2 RESEARCH METHODOLOGY

5.2.1 CRITICAL REALISM IN SOCIAL SCIENCE RESEARCH

From the second moment of critical realism (CR) it becomes increasingly difficult to distinguish philosophy from social science, and they merge in the third and fourth moments (DCR and TDCR). Transcendental realism (TR) had the modest goal for philosophy as under-laborer for science. Later developments commit the researcher to certain teleological and axiomatic claims concerning human freedom so that philosophical enquiry and social science claims are intermingled. Critical realist research methodology taken to its limits would therefore be neither neutral nor value free as would be expected for 'objective' scientific research. Its appropriation by a researcher rests upon how much one accepts its claims from its critique of established philosophies. In Chapters 3 and 4 we justified the use of critical realism to understand ICT4D change in postcolonial developing countries from methodological and critical humanity affirming perspectives respectively. Whatever theory emerges should cater for discourse, agency, culture and structure in dialectical relation to contextualize ICT change in history.

Weber (2004) and Silverman (1998) advocate the pragmatic use of methodology to fit the problem without undue reference to divisive philosophies. Critical realism does not appear to have this limitation because data collection is directed towards the construction of historical accounts for retroductive generation of explanatory critiques from which inferences are drawn. Jeppesen (2005) used a critical realist approach to match research questions, methodology and fieldwork design in studying environmental practices of SMEs in South Africa. It gave him a coherent scientific framework while avoiding the pitfalls of normative assumptions in positivist studies. Unlike empirical statistical surveys or grounded theory to some degree, realist research data collection is theory, rather than data driven. In principle, any valid data

source or analytical technique that enriches the account of events and understanding of potential mechanisms would be admissible. Advocates of critical realism in IS and social science research also advocate multi-methodology (Mingers, 2003, Mingers, 2004b, Mingers, 2004c, Olsen, 2004, Pawson and Tilley, 1997).

According to Mingers' (2001) survey, multi-method research is relatively rare in IS despite claims to the contrary. Only 20 percent of studies combined methods, and of these most were simple, covering a narrow range of methods. He found no significant research programmes that share methods. Multi-methodology makes sense in studying social systems conceived of as stratified and differentiated for which different phases may call for different approaches. Mingers (2001) explains its paucity with philosophical, cultural, psychological and practical barriers. As in the case of the popularity of positivist research (Chen and Hirschheim, 2004), researchers are under pressure to specialize in a narrow skill set to advance careers, while others are inclined towards a particular direction for personal reasons.

Triangulation is an additional consideration for multi-methodology, Mingers (2001) argues that it enhances the validity of such research. Blaikie (1991) attributes its popularity to Norman Denzin but takes exception to it. He thinks it is meaningless for interpretivists, while positivists cannot evade questions of bias owing to incommensurate epistemological and ontological assumptions. Realists on the other hand must make judgements, which would serve diminish its 'objective' value to research. If the research design has both qualitative and quantitative methods, then triangulation is only possible with a pluralist theoretical viewpoint like realism (Olsen, 2004).

The question of making value judgements in critical realist research does not arise if we take into account Healy and Perry's (2000) suggestion that the research is "neither value-free nor value-laden but value aware".

Table 5-1 presents their full critical realist research criteria with some additional explanation.

Table 5-1 Critical realist research criteria

<p>1. Ontology</p> <p>a. <i>Ontological appropriateness</i> to adequately cater for complex social science phenomena under investigation, its apprehension is considered possible but only imperfectly through people. This is in contrast to positivist or interpretive alternate versions of reality as objectively apprehensible, or socially constructed, respectively.</p> <p>b. <i>Contingent validity</i> – Reality is conceived as an open system with causation attributed to generative mechanisms rather than simple cause-effect relationships. Observations are context dependent, contingent upon the possible activation of mechanisms.</p>
<p>2. Epistemology</p> <p>a. <i>Multiple perceptions</i> of participants and of peer researchers. CR has a relativist epistemology; it is neither value free nor value-laden, but rather value aware. Capturing multiple perceptions allows for triangulation of multiple data sources and peer interpretations, to maintain value awareness and mitigate value-leadenness’.</p>
<p>3. Methodology</p> <p>a. <i>Methodological trustworthiness</i>, the research process should allow for auditing to make possible independent verification of findings, e.g. having a case study database.</p> <p>b. <i>Analytic generalization</i> – the aim is theory building rather than theory testing. This follows from the complexity of the reality under investigation; theory testing using positivist techniques could come later once some level of knowledge about the phenomena is available.</p> <p>c. <i>Construct validity</i> – Similar to that in positivism and refers to how well the operationalization of the constructs in the theory being built actually ‘measure’ what they are supposed to ‘measure’. For this there is recourse to prior theory, well documented multiple data sources, and triangulation for critical realism.</p>

It does not mention core critical realist concepts of ideology, false beliefs, freedom, or emancipation which gives the criteria a rather instrumental outlook. However it provides a reasonable guide to evaluate the practical conduct of research. Critical realist research methodology and evaluative criteria are still developing and much debate still centres on philosophy rather than methodology (Elder-Vass, 2007).

5.2.2 RESEARCH FRAMEWORK

Critical realist social science research frameworks include Transformational Model of Social Activity (TMSA) (Bhaskar, 1998), the Morphogenetic Approach (M/M) (Archer, 1995), the Strategic Relational Approach (SRA) (Jessop, 2005), Methodological Realism (Sayer, 1992), the Research Map (Layder, 1993), and the Context-Mechanism-Outcome (CMO) realist experiment (Pawson and Tilley, 1997). The latter two espouse a ‘soft realism’ that is sympathetic to constructivism, with less strong distinctions between the components of social reality implied in the other dialectical frameworks (Tilley, 2000, Carlsson, 2003a). For these reasons they may not fit this study that calls for greater articulation of the components of developing country ICT4D contexts and their dialectical interplay.

Jessop (2005) evaluates Giddens’ Structuration Theory, Bhaskar’s TMSA, and Archer’s M/M approaches in comparison to his own SRA. He finds SRA the most theoretically sophisticated as it was developed specifically for critical realist social science research. It is much more explicit on the spatio-temporality of structures, agents, and agency, while TMSA and M/M rely on generic taxonomies and categories that in his opinion defeat the purpose of critical realism. He suggests that SRA’s structure-agency dialectical interplay is more context sensitive; it “examines structure in relation to action, action in relation to structure, rather than bracketing one of them.” Structures are treated as ‘strategically-selective’; i.e. taking into account how a structure may privilege some actors, strategies, identities, or temporal horizons, over others. Actions are treated as ‘structurally-constrained’ by considering how actors take into account this differential privileging through strategic-context analysis when evaluating possible courses of action. These considerations give greater context sensitivity to differential privileging (and reactions thereof). In contrast, he objects to TMSA’s use of the ‘undifferentiated’ categories society and people when dealing with structure and agency. He finds it neglectful of space and implying a monopolar rather than a complex stratified ontology.

Jessop (2005) finds objectionable Archer’s M/M reliance on the taxonomies of possible forms of *system* and *social integration* (See Table 5.1; discussed in 5.3.2) to

theorize emergence in structure, culture and agency. In his opinion it leads to a “flat spatio-temporal ontology - operating basically with past, present, and future...” that effectively neglects complex spatio-temporalities for “structures, strategic contexts, social practice and their contingent articulation”. He however acknowledges that both TMSA and M/M can be extended analytically to what SRA does, and that TMSA was developed with limited concern for social research. Jessop’s (2005) overall evaluation for M/M is positive. He finds it closest to SRA, and that if used with full awareness of the critical realist paradigm M/M does not have serious limitations in comparison to his own SRA.

Archer’s Morphogenetic/Morphostatic Approach (M/M) is one of the more complete methodological frameworks for practical social theory building and was chosen over other approaches for this study. An important advantage of M/M is the comprehensive body of directly related theoretical and empirical research on structure, culture, agency, and social transformation that Archer has undertaken in a series of five books (Archer, 1988, Archer, 1995, Archer, 2000, Archer, 2003). These build on her earlier work on change in education systems (Archer, 1984) to ground Bhaskar’s at times abstract philosophical writings for practical social theory building. Given the integrated nature of these works, it is best to take them all into account when using any. Some of the shortcomings Jessop (2005) cites may be addressed in other works. The challenge for the researcher is to craft a strategy that uses them as intended without slipping into some form of eclecticism. A detailed outline of M/M is presented next.

5.2.3 THE MORPHOGENETIC APPROACH

The Morphogenetic approach (M/M) provides social scientists with a practical framework to explore layers of mechanisms in a sociologically robust manner. It is “mechanisms, not things or events that are stratified” (Collier, 1994). Any attempt to relate things or events directly in an emergentist framework would be inconsistent. In normal social science theoretical or logical constructs take the place of invisible mechanisms. Closed experiments allow for testing in the physical sciences that gives us confidence that our constructs and mechanisms are descriptively practically one

and the same thing. There is gradation to higher strata from the physical to human sciences in stratified social reality. Openness is much more evident and experimentation is not possible for higher strata. In moving from transcendental realism to critical naturalism, we have a broadened form of social reality as emergent from a dialectical relationship between structure and agency.

Archer (1995) begins by first demonstrating equivalence between M/M and other critical realist models of social change by Bhaskar (TMSA) and Sayer (Methodological Realism). Change and stability in the morphogenetic approach arise from the reciprocal relationship between agency and the social system (structure /culture) in a fundamentally unguided process. In critical realism “agents are the only efficient causes in social life”, they are conditioned, make choices, have interests, ideas, seek control, negotiate and form groupings all in the pursuit of self-cultivation (Archer, 1995:195). What emerges as society with particularities at any given time is “that which nobody wants”, society for realists is indeed a “vexatious fact” that is not amenable either to simplistic analysis or “analogical short-cuts” (Archer, 1995:165).

Archer relies heavily on classical sociologists and two social systems theorists to underpin M/M theoretically. First and most important is David Lockwood’s *Social Integration and System Integration* for analytical dualism (See Fig 5-1 and Table 5-2), and secondly David Buckley’s *Sociology and Modern Systems Theory* for the idea of morphogenesis (Zeuner, 1999). Thus M/M analysis follows the principles of *temporal separability* and *analytical dualism* for structure and agency. Archer refers to those parts of a social system where change primarily depends upon *material resources* as the *structural system*, while those that depend on *ideas* are termed the *cultural system*.

Analytical dualism in social realism is possible because phases of ‘structure’ and ‘agency’ are not necessarily concurrent. System integration relates to systemic structures and social integration to agency. System integration is autonomous and necessarily antecedent to social integration, and therefore conditions it. However, changes in system integration ultimately arise from agent interactions, which are influenced by the level of social integration. Hence there is interplay between system

integration and social integration over time at different levels of social reality as shown in Fig 5-1.

Figure 5-1 Analytical dualism in social theory

System Integration		Social Integration	
Systemic	_____ Interplay _____	Population	
Institutional	_____ Interplay _____	Organized groups (corporate agency)	
Roles	_____ Interplay _____	Individual actors	
Positions	_____ Interplay _____	Collectivities (primary agency)	

Source: Archer (1995:190)

The dynamics of conditioning are contingent upon agents' involuntary placement, which gives rise to differences in vested interests for different sections of society. Some may prefer to maintain the present system while others advocate change. The pursuit or non-pursuit of vested interests (defensive or promotive strategies) is associated with opportunity costs. A given decision situation would allocate different costs to different social groups depending on their overall structural placement. Archer (1995) illustrates with an example how opportunity costs associated with a decision whether to go to university or for vocational training differ between working class and middle class children. Such costs are objective, but their influence is only through the *reasons* they supply to agents for interpretation and action. Agents choose depending on their valuation of material and ideal interests, and the relationship between them. Both supply objective reasons for agent reflection and action that may at times be at variance whereby sticking to ideals may undercut material interests and vice versa. Because they derive from different realms, the material (structure) and ideational (culture), the resultant powers of Structural Emergent Properties (SEPs), and Cultural Emergent Properties (CEPs) are also expected in general to be out of synchrony with each other.

The final consideration is the macro (institutional) level for second-order emergent properties (relations between the results of the results of past interactions) that affect

large sections of the population. Although at an individual level a given course of action may appear advantageous, macro level second-order SEPs and CEPs may provide ‘strategic directional guidance’ that conditions the actions of larger sections of the population. A given agent’s situation or context may display tensions or coherence amongst its components such as the relations between different institutional SEPs. Archer (1995) refers to this property as congruence or incongruence of the systemic context. A congruent context is likened to a sheer face that serves to discourage change; an incongruent context has a systemic fault line that conditions agent action to either contain it or realize it among different members of the population. The actualization of second order SEPs depends upon congruence with conditioning at lower levels, if it is incongruent, the powers remain unexercised.

Systemic level compatibilities and incompatibilities are not immediately apparent to agents but are reflected in day-to-day practical situations. A given agent may find a string of ‘obstacles’ to realizing certain goals (associated with vested interests), while another (with different goals and vested interests) may realize theirs in a relatively ‘problem free’ manner. Archer (1995:216) then proceeds to identify *situation logics* that “predispose agents towards *specific courses of action*” by supplying reasons favorable or unfavorable to certain courses of action. Table 5-2 summarizes the four possibilities for second-order institutional level relationships – *necessary complementarities*, *necessary incompatibilities*, *contingent complementarities*, and *contingent incompatibilities*.

In each of the four situations agents are predisposed to adopt four strategies respectively: to be *defensive*, *concessionary*, *competitive*, or *opportunistic*, as most advantageous to their interests. Consequently, different groups stand to gain or lose differently depending on the situation obtaining. These amount to situation logics that condition strategic actions and represent generative mechanisms for this perspective of social reality; if they are carried through they may lead to morphogenesis or morphostasis. Actual success or failure for a given strategic course is in turn conditioned by relative agent placement in terms of bargaining power and negotiating strength, explained under morphogenesis of agency in Section 5.2.4.

Table 5-2 Conditions for morphostasis and morphogenesis

		SYSTEMIC INTEGRATION (Structural or cultural)		
		High	Low	
SOCIAL INTEGRATION	High	Necessary complementarity	Necessary contradiction	Morphostasis
	Low	Contingent complementarity	Contingent contradiction	Morphogenesis

Source: Archer (1995: 295)

Table 5-3 Cultural & structural morphogenesis at the systemic and social levels

	Contradictions		Complementarities	
(Situation Logic)	Necessary (Correction)	Contingent (Elimination)	Necessary (Protection)	Contingent (Opportunism)
CEPs				
C.S. level	Syncretism	Pluralism	Systematization	Specialization
S-C. level	Unification	Cleavage	Reproduction	Sectionalism
SEPs				
S.S. level	Compromise	Competition	Integration	Differentiation
S-I. level	Containment	Polarization	Solidarity	Diversification
CS - Cultural system S-C - Socio-cultural interaction SS - Structural system S-I - Social interaction				

Source: Archer (1995:303)

M/M distinguishes between agent interaction that relates to material resources as social interaction (S-I) that influences emergence in structure (SEPs), and socio-cultural interaction (S-C) relating to ideas that influence emergence in culture (CEPs). Table 5-3 breaks down the four generic strategies to their different manifestations at each of the four different levels of social reality. Tables 5-2 and 5-3 provide a systematic and rich set of possible mechanisms (combinations of situation logics) to frame causal accounts of emergent change.

An important set of relations to morphogenesis for the social system as a whole is that between the SEPs and CEPs which as we saw earlier are likely to be out of synchrony. The four second order possibilities and situation logics are applicable to both SEPs and CEPs independently. Their strategic influence runs parallel; however their relationship to one another in terms of congruence is considered a third-order emergent property and the ultimate conditioning influence on whether morphogenesis or morphostasis ensues. Before summarizing how this happens, we shall first outline the Morphogenetic Cycle to delineate the crucial intersection of SEPs and CEPs in agent interaction.

5.2.4 THE MORPHOGENETIC CYCLE

In M/M mediation by people as they shape the situation they find themselves in is the heart of all agency and emergence. Novelty in social outcomes derives from the interaction between structural and cultural realms – material and ideational – mediated by agents. The *Morphogenetic Cycle* operationalizes analytical dualism to explicate *how* and *why* change happens. Structural, cultural, and agential emergent properties are irreducible to each other and are relatively enduring.

Morphogenesis of structure and culture

Systemic structures (structural and cultural) are identifiable from people because they necessarily predate any incumbents or occupants. Thus agency only transforms structures but does not produce them, distinguishing M/M from Structuration Theory where structures are said to be virtual until instantiated by agent actions. It becomes possible to make temporal analytical separation between structure and agency as Emergence-Interplay-Outcome in three stages of the cycle. Analysis is done over discrete time intervals to identify emergent changes in structure, culture, and people, and their causal relationships. Three domains of social reality for Structural Emergent Properties (SEPs), Cultural Emergent Properties (CEPs) and Peoples Emergent Properties (PEPs) are evaluated in time over each analytical cycle.

The diagrams below illustrate the Morphogenetic/Morphostatic cycles for structure and culture. Each begins at a time T^1 that corresponds to prior conditioning by the existing configuration of components in social reality. The intermediate period T^2 to

T^3 corresponds to the mediating action of agency through social or socio-cultural interaction. Emergent change leads to structural and cultural elaboration by time T^4 . During analysis, these time periods are identified empirically from a historical account of events.

Figure 5-2 Morphogenesis of Structure

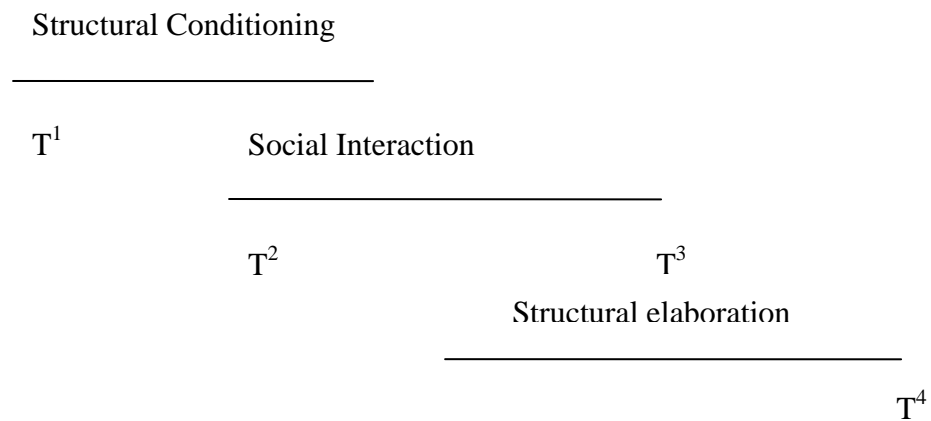
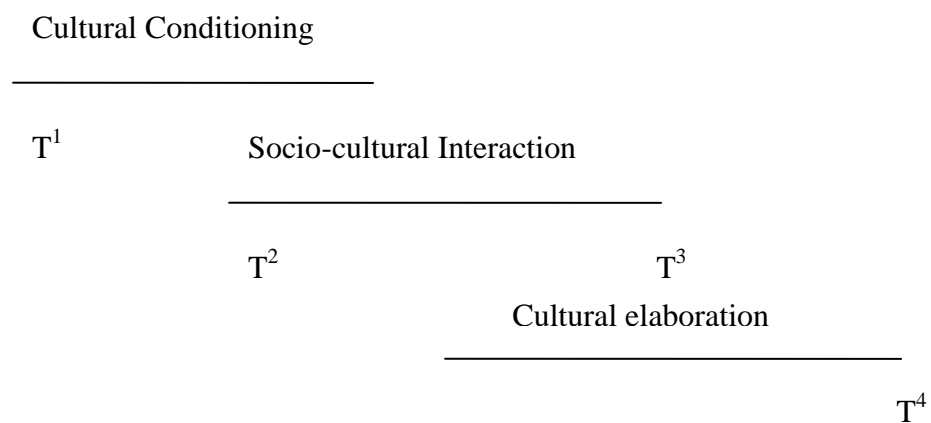


Figure 5-3 Morphogenesis of Culture



Morphogenesis of agency

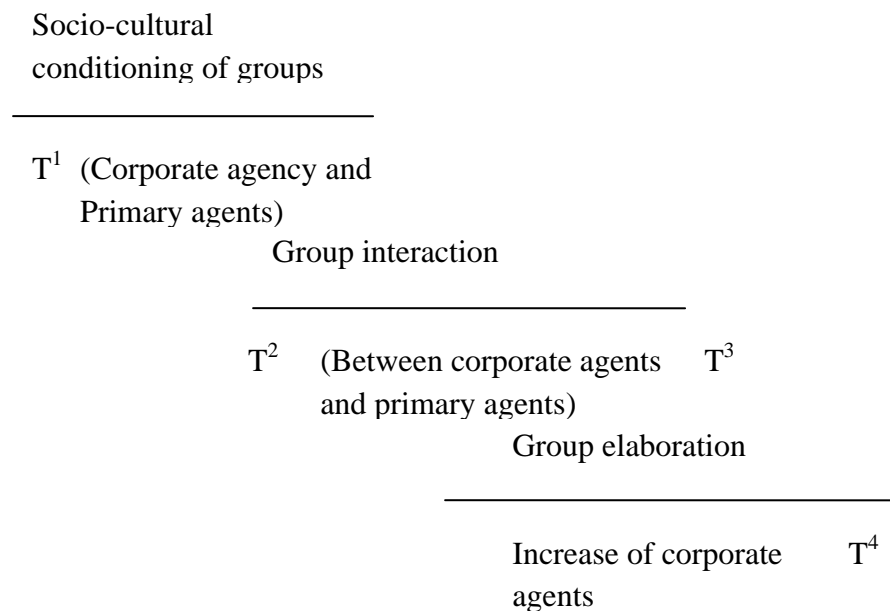
Agents are defined as “*collectivities sharing the same life chances*” (Archer, 1995: 257). As organized interest groups, they “pack a very special punch as far as systems stability and change are concerned” for three reasons: awareness of what they want, are articulate, and organized (Archer, 1995: 258). They have both material and ideational concerns and seek to get their desired mix through social and socio-cultural interaction. Primary agents must be organized into corporate agents (groups) to have a say at top-level decisions that result in structural and cultural modeling. Corporate agency thus shapes the context for all actors while primary agency constitutes the environment that corporate agents want to control. Success for any group is dependent upon access to resources i.e. political sanctions, liquid assets, and expertise which increase *negotiating power*. It also depends on relations to other corporate agents and the degree of interaction; stronger linkages contribute to *negotiating strength*.

The morphogenesis of agency can have three stages following the basic transformation person → agent → actor. Individual persons are first transformed into primary and corporate agents in a *double morphogenesis*. Agents become actors in a *triple morphogenesis* when they assume a role in the social system as the incumbent to the role, though the role itself precedes and almost always outlives the actor. Actors can shape structure and culture as the voice for a given corporate agent(s). Structure is linked to agency through individual reflexivity in an ‘internal conversation’, when a person considers their position, weighs options, and makes choices, in relation to objective social reality (Archer, 2003). Different people have different modes of reflexivity that are foundational to the choices they make, the stance they adopt towards society, and consequently their capacity and influence on social change. Archer (2003) identifies four modes as: autonomous, communicative, meta, and fractured reflexives. They are employed in Chapter 7 discussion of Q-methodology findings.

Agency undergoes morphogenesis through conditioned social interaction as primary and corporate agents in different interest groups – from material to ideational – pursue self-cultivation to produce Peoples Emergent Properties (PEPs) ($T^2 - T^3$ in Fig 5-4).

Structural and cultural systems' causal effects are mediated through their conditioning effects on agent interaction. Decisions and action choices are made for *reasons* important to agents but contingent upon systemic emergent properties and their powers. In time the number of primary agents shrinks while that of corporate agents increases through group elaboration as shown at time T^4 .

Figure 5-4 Morphogenesis of Agency



5.2.5 MORPHOGENESIS AND MORPHOSTASIS OF THE SOCIAL SYSTEM

It is clear from Figures 5-2 to 5-4 that although the material and ideational domains are autonomous in practice they intersect in the middle section of the Morphogenetic Cycle during agent interaction. Under Lockwood's system (Table 5-2), generic opportunities for change arise when there is hiatus in the degree of social and systemic integration. M/M goes further to theorize the interplay between structure and culture with four possible pure combinations of morphogenesis/morphostasis and SEPs/CEPs. Continuity or discontinuity in morphogenetic cycles for structure and culture is consequential because of the possibility of *reciprocal effects* between ideas in the social system and existing social structures, or one or the other domain having greater influence. It is thus necessary to evaluate the interplay of structure and culture

in explaining what actually happens following varied agent actions. *Morphogenesis* is when change occurs in the social system in either one or both structural or cultural system, termed *elaboration*. *Morphostasis* refers to overall stability of the social system. All change ultimately derives from agent (mainly groups) interaction and reconfiguration in the pursuit of interests. A brief explanation for each combination and its consequences is given below.

Conjunction 1: Structural and Cultural morphostasis

This conjunction represents the *Myth of Cultural Integration* (Archer, 1995:309) associated with ancient civilizations where structural and cultural elites need one another to survive, and are both interested in holding on to the status quo. Each has trapped the other in a web of either monolithic power or cultural homogeneity, with the masses subjugated under a two polar elite. There are few ideational alternatives, neither is there any viable locus for marginalized groups to accumulate resources against structural elites. The result is apparent stability of the mutually beneficial social system despite any private misgivings.

Disjunction 1: Structural morphogenesis, cultural morphostasis

This is when there is one dominant cultural agent and corporate agents with increasingly varied material interests. Differentiation in the structural domain may be occasioned by many reasons such as new technologies, resources, and political alliances, with the potential to change structural relations. The stable cultural context will act to dampen the drive for structural change and in the process agents that feel culturally trapped will begin the search for new sources of legitimation. The result is cultural elaboration as new corporate agents arise in the cultural realm.

Disjunction 2: Structural morphostasis, cultural morphogenesis

This is opposite to the previous case; there is one dominant structural agent amidst a diversified cultural context. The plurality of ideas poses a challenge to the dominant structural agent to either throw in their lot with one of them or defend tradition. This acts as a spur to social regrouping as latent interest groups coalesce around alternative ideas and leads to structural elaboration. Social regrouping may also arise from the intensification of existing conflicts and greater polarization of interests.

Conjunction 2: Structural and cultural morphogenesis

The last combination is when there is great diversity in the material and ideational realms; each has many organized and articulate groups with a high degree of interaction. It represents a 'free for all' type situation where eventual outcomes are highly contingent on the specific intersections between material and ideational interests. New material interest groups continue to seek sources of legitimation while new ideational groups need such alliances to survive. Social and socio-cultural interactions thus reinforce one another to result in structural and cultural elaboration.

5.2.6 EMPIRICAL INVESTIGATION

Analysis in M/M involves the empirical investigation of actual events to establish what conjunctions obtain and why from considering anterior and posterior morphogenetic cycles for structure and culture and their interplay. The output is explanatory critiques termed *Analytical histories of emergence* (Archer, 1995). They are retroductive, corrigible accounts of sociological transformation over time. By definition they can never be final because we can always improve on our explanations as more or better data becomes available. These causal (generative) accounts form the basis for theorizing change.

5.3 THE DISCURSIVE ENVIRONMENT

In this section we make the case for a subsidiary study of the discursive environment for an overall multi-method research design, which is also desirable in critical realist research. According to Zeuner (1999) M/M is conceived within a structural framework that does not give sufficient room analytically for agency or culture. Hence while M/M by itself may be sufficient for structural and cultural system analysis of emergent change it may not provide a good *overall picture* of the discursive environment that structures agent interaction.²³ M/M *infers* power relations from an interpretive analysis of the historical record of agents' social and

²³Archer later published *Being human: the problem of agency* (2000) on agency as defense of humanity against postmodernism, and *Structure, Agency, and the Internal Conversation* (2003) to link structure and agency at the level of the primary agent (individual person) in the book series. My results are closely aligned with her empirical categorizations – See Chapter 7 discussion of intermediate research findings.

socio-cultural interactions in their context. It is silent on specific data sources for such a history and any additional source or technique that improves our database is in principle desirable.

Earlier in Chapter 2 and 4 we saw that tricontinental country contexts have complex individual and group identities further complicated by colonial and postcolonial psychological impacts of racial discrimination, arbitrary violence, and material and cultural dispossession. For example how would such persons react subjectively to a ‘foreign’ discourse associated with modern progress from their former ‘masters’? (Fanon, 1986) How do we account for ‘double consciousnesses’ said to characterize subjugated persons? (Du Bois, 1903) As argued in the conclusion in Chapter 4 these may lie in the sphere of historical intersubjective relations of domination, and that ought to be factored in for analysis to be useful from a postcolonial subject perspective. They would constitute part of the cultural system and socio-cultural interactions with causal effects on structural outcomes. An approach that captures individual subjectivities and the overall effect at group level would be very informative.

Interpretive studies would capture individual subjectivity but without firm group level conclusions suitable for realist type causal analysis. A survey (positivist) would give us group level categories but without certainty that they are not researcher imposed. This is in addition to the earlier mentioned difficulties for quantitative models in construct operationalization and multiple variable correlations in social science research (Chapter 3). In the next section we discuss *Q-methodology*, a technique for the ‘scientific study of subjectivity’ that circumvents some of these difficulties and why it was preferred. We also show how it is triangulated methodologically with the M/M approach in the final multi-method research design.

5.4 Q-METHODOLOGY IN SOCIAL SCIENCE AND INFORMATION SYSTEMS RESEARCH

Physicist and psychologist William Stephenson invented Q-methodology (or Q-factor analysis) in 1935; he was the last assistant to Charles Spearman the inventor of Factor

Analysis (termed R-factor analysis). It is a statistical technique similar to Factor analysis as described by Kline (1994) and Child (2006), devised to analyze patterns in the systematic study of subjectivity (Brown, 1996, Exel and Graaf, 2005). Unlike R-factor analysis Q-factor analysis describes the population of viewpoints rather than people, in effect the constitution of the discursive environment. These could be people's opinions, viewpoints, beliefs or attitudes. It was relatively little used for decades but is now gaining acceptance for research in political science (Brown, 1980, Dryzek, 1990, Dryzek and Berejikian, 1993), consumer research (Rosenbaum et al., 2005), context in information systems (Tractinsky and Jarvenpaa 1995) and health, especially psychology (McKeown 1999; McKeown, Hinks et al. 1999).²⁴

Q-methodology is particularly useful when the topic is sensitive or contentious in critical social research:

Recall that a critical theory strives to interpret the condition of a group of sufferers, make plain to them the cause of their suffering, and by sketching a course of relief, demonstrate that their situation is not immutable. **Any such theory is validated by reflective acceptance and ensuing action on the part of its audience.** In its standard presentations, then, a critical theory has three aspects: one interpretive, one quasi-causal, one emancipatory. Whereas Q-Methodology is largely silent on questions of causality, let me suggest that it can generate major contributions to both the interpretive and emancipatory moments of a critical theory (my [Sherman's] emphasis) Dryzek (1990:185) in Sherman (2005).

This may be one reason why critical social researchers are increasingly taking advantage of Q-methodology's unique insights. On evaluating democracy discourse studies in the United States, Dryzek and Berejikian (1993) found Q-methodology preferable over ethno-methodology and in-depth interviews because these involve personal interpretations. Brown (1997) gives an expanding list of critical and postmodern studies in such areas as deconstruction, social constructionism, discourse

²⁴ BROWN, S. R. (1997) The History and Principles of Q Methodology in Psychology and the Social Sciences. IN. (Ed. *British Psychological Society symposium on "A Quest for a Science of Subjectivity: The Lifework of William Stephenson"*). University of London, England, Available at <http://facstaff.uww.edu/cottlec/QArchive/Bps.htm>. discusses past controversies with proponents of R-factor analysis due to basic misunderstandings and academic politics that limited its use especially in Britain, with Stephenson decamping to the US.

analysis, identity theory, narrative analysis, feminism and women's issues. Heasley (2005) identified six variants of national identity in Scotland and Wales beyond the two existing broad categories, civic and ethnic. McKeown (1999) explores the discursive practices of nurses using Q-methodology in relation to their actual behavior in the complex issue of nursing and industrial relations using a social constructivist analytical framework.

Q-methodology may help us access broader patterns underlying sensitive and contentious issues in the complex discursive environment for Kenya ICT. Even in the face of such complexity corporate agents adopt strategic positions and take actions towards realizing ICT4D project and programme objectives. Identifying broader patterns of ideology would simplify our understanding of how and why they adopt them to better theorize ICT4D change.

5.4.1 BASIC PRINCIPLES OF Q-METHODOLOGY

The scientific study of subjectivity

When something is said to be subjective it generally means less than that which is objective. According to *Longman Dictionary of Contemporary English* (2004) "a statement, report, attitude etc that is subjective is influenced by personal opinion and can therefore be unfair". Its validity, hence value, is limited to the observer while objective positions are presumably observer independent. The study of subjective issues using methods designed for the physical sciences or with abstract mathematical constructions necessarily leads to multiple perspectives each of which arguably is as good as any other. Interpretive studies by definition give rise to multiple equally valid interpretations as there are no right or wrong personal opinions. This is the atomistic view of subjectivity. Yet it is important to apprehend more concretely the pervasive subjectivity in human/social relations as it influences material outcomes. Feelings may determine resource allocation decisions or contribute substantively. Q-methodology's approach to the problem of subjectivity is a way to get some hold of it in apparently objective terms.

Q-methodology makes use of factor analytic techniques in charting out 'vectors' of subjectivity surrounding a topic. R-factor analysis correlates persons allowing us to

make inferences about variables not directly observed. The main difference between the two is that Q-methodology is concerned with patterns within and across *individuals* while R-methodology is concerned with *variables*. Secondly, in Q-methodology the researcher does not limit respondents to prior categories or meanings. Subjects *reveal* such categories as they sort statements in a sorting procedure (Q-sort – discussed ahead). Subjectivity is manifested during the personal expression of *my* ‘subjective’ position on a given statement with meaning. Figure 5-5 illustrates the difference with a visual example. The disproportionate second figure on the right indicates the collective relative significance for each body part for the 20 participants, very different information from the first figure.

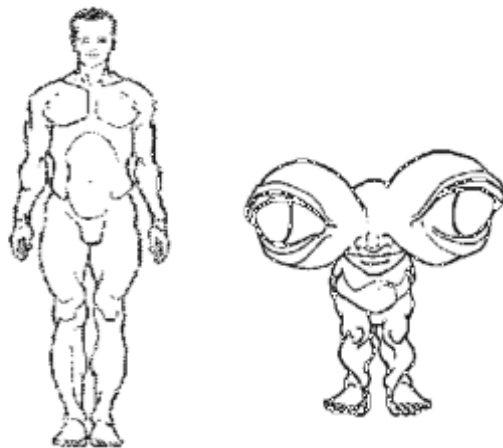


Figure 5-5 R and Q Factor analysis

Distinguishing R and Q Factor

analysis: The first proportionate figure (R analysis) is an artist’s impression of results from a factor analysis of 25 bodily measurements for 20 people which simply reveals that bodily measurements are about the same size. The second figure (Q analysis) is drawn from the 20 participant responses to the question of each body part’s “significance for me”.

Source: (Brown, 1997)

Stephenson overcomes the atomized view of subjectivity as individual focus with multiple possibilities to study it as “shared communicability” (Brown, 1997). This was developed fully as *concourse theory* and forms the basis for the scientific study of subjectivity. The factors derived from subsequent statistical procedures are categories of *operant subjectivity* (Brown, 1997). Research findings are thus placed on a comparatively more secure foundation for theorizing (Dryzek and Berejikian, 1993). These two concepts form the theoretical basis for Q-methodology and are explained next.

Concourse theory

The *concourse* is defined as “the flow of communicability surrounding any topic” in the ordinary conversation, commentary, and discourse of every day life (Brown, 1991). It is a term derived from Latin “concurus”, which in English means “a running together” in the context of ideas running together in thought. Brown (1991) describes it as “the very stuff of life”, and it is from this back and forth flow of communicability that new ideas, new meanings and discoveries arise. Technically the concourse is “a universe” of possibilities or a “population” of innumerable possibilities of statements (of thought and feeling) about a situation’ (Stephenson(1986:44) in Hutchinson (2004)). It is a continuum that ranges from lighthearted playful conversations to serious scientific, philosophical, or policy debates. Individual, group and even national identities are constructed from it in creative processes.

Brown (1997) lists the “axiom of subjectivity” as the foremost element in the theory due to its central role in human affairs. Thus Hutchinson (2004) interprets concourse as all the conceptual (meaning) possibilities bounded within a complex situation of subjectivity. Subjectivity has no meaning except in the context of common or shareable knowledge to all people in a culture. Stephenson (1980) equates this sharing to consciousness, or less strongly, being communicable in common. Therefore to participants in a Q study the topic at hand should be an “ordinary” topic, with a general understanding of others’ potential viewpoints by all. The researcher only requires familiarity with available narratives surrounding the topic. For experimental purposes, hundreds of verbal statements drawn from actual communication are generally used in constituting the concourse. So the core of the concourse is not objective facts but *statements with meaning*.

Q-methodology seeks to reveal the structure of the concourse or, as Brown (1991) terms it “...the vectors of thought that sustain it and which, in turn, are sustained by it”. They are ‘maps’ or ‘landscapes’ of ideology produced by people in social interaction which in turn influence individuals depending on their subjective degree of agreement or disagreement. The notion ‘vectors of thought’ for a given topic in a community tells us that not all ideas or thoughts are equal but that their relative

significance is subjectively derived from how widely shared each is. Those that are widely shared will be perceived collectively as distinctive dominant ideologies, while others are marginal. The concept *operant subjectivity* enables us to ‘measure’ relative differences in the subjective valuation of ideas and thoughts while limiting researcher or instrument influence.

Operant subjectivity and inter-behaviourism

Brown (1997) explains that Stephenson borrowed the idea of operantcy from B. F. Skinner’s behavioral psychology who used it to refer to behavior that is not attributable to an eliciting stimulus. Stephenson was inspired by Charles Spearman’s earlier efforts to find a test so as “to eliminate all possible difference in the subjects’ manner of procedure”, to give a perfect measure of general intellect. Since all cognitive procedures involved some form of intellect, there was no way to separate out the effects of measurement from the generic intellect of interest. The Q-sort technique was Stephenson’s solution to elicit a generic measure with minimal researcher or instrument effects.

Operant behavior is volitional and is related to the environment unlike Pavlov’s classical conditioning that relates to instinct. It may therefore be studied using naturalistic methods of science. Stephenson relied on J. R. Kantor’s inter-behavioral field psychology rather than the more positivist behaviorism of J. Watson that uses classical statistical techniques to model human behavior for control and prediction. Inter-behaviorism uses naturalistic constructs to relate psychological events through scientific system building; it differentiates between events and constructs (Clayton et al., 2005). Constructs are made only after careful observation of events in their context with a field-theoretic perspective of all scientific knowledge. All events, organic or inorganic are assumed to be continuous, and behavioral evolution can be related to “objects, conditions and cultural institutions.” (Clayton et al., 2005) Operantcy and inter-behaviorism change the common view of subjectivity to a naturalistic one that may be studied scientifically.

5.4.2 Q-METHODOLOGY STUDY PROCEDURE

A Q-methodology study has five steps: defining the concourse; development of the Q-set; selection of the P-set; Q-sort administration; and analysis and interpretation.

Each is explained below.

Definition of the concourse

The concourse is made up of several hundred statements drawn from existing communication in diverse forms depending on the culture, assembled without discrimination or prejudgment. They are the raw material for the study from which we select through some procedure, statements for administration within a community for the topic of interest. For example in E-Government we may use opinion statements (not facts) from official reports, public press, speeches, interviews, statements by ordinary people, professionals, local, and international agencies.

Development of the Q-set

McKeown and Thomas (1988) suggest that about 30 – 70 representative statements (Q set) be drawn from the concourse for test purposes. Exel and Graaf (2005) give 40 – 50 as reasonable though it may vary upwards or downwards. Brown (1980) suggests a factorial design that Stephenson also favored, he also considers any suitably comprehensive procedure as good enough (Brown, 1986). Dryzek and Berejikian (1993) seek to improve on this rough and ready approach in the case of political discourse with a systematic procedure specific to political discourses. Other approaches include random selection, the use of focus groups (Brown, 2004), thematic considerations (McKeown, 1999), professional opinions, and literature (Tractinsky and Jarvenpaa, 1995).

According to Exel and Graaf (2005) the selection structure may involve emergence from further examination of statements in the concourse or its imposition based on some theory. Different investigators would likely lead to different Q-sets. This is not a major problem if the resulting set is balanced and representative of opinions, as we are only interested in relative differences in attribution of meaning by participants captured via the sorting process. Comparative studies indicate that even with different starting points there is convergence to the same conclusions (Exel and Graaf,

2005). The actual statements matter less than coverage since they are only a logical structure for respondents to express their subjectivity.

Though there are a variety of ways to select statements, it is very important to the whole exercise and a pre-test or pilot study is recommended (McKeown and Thomas, 1988). The statements set should break up into roughly equal piles of agree, neutral, and disagree for the participants. Pilot studies help to evaluate ease of sorting, assess the extent of diversity, and identify ambiguous statements (McKeown et al., 1999).

Selection of P set

Participants (P set) are a structured sample of respondents who are theoretically relevant to the issue. They are selected to ensure breadth and comprehensiveness to give confidence that the major factors have manifested themselves in combination with the Q set. The P set is usually smaller than the Q set for it may take as few as four to six persons to define an anticipated viewpoint (Exel and Graaf, 2005). The unit of analysis is not individuals but their subjective profiles. So, the proportion or number of persons “associated with a factor is of less importance than who they are” in the community (Exel and Graaf, 2005). If the P set is broad and comprehensive enough, individuals will define distinctive viewpoints that exist within the given community as factors. Similar to the Q set, Brown (1980) suggests factorial design as a selection structure.

Q sort administration

Administration of the Q sort to respondents corresponds to an interview in surveys. Usually the Q set is presented as a pack of randomly numbered cards with each card containing one statement. The formal question relating to the topic presented to respondents for them to agree, be neutral, or disagree (or equivalent) is called the *condition of instruction*. It requires that respondents sort the cards into a given distribution, a forced quasi-normal or free distribution may be used. Emergent factors are not dependent upon the suggested distribution because we correlate profiles of individual subjective responses with the same distribution (Exel and Graaf, 2005). A forced distribution is useful in practice as respondents have to make fine distinctions amongst the statements within the suggested range (Brown, 1980). The

controversiality of the topic, the degree of involvement, knowledge, and interest of respondents dictate the kurtosis of the distribution. A flatter distribution would be better for well developed and articulated opinions on an issue to allow for greater variability. Most distributions today are relatively flattened with scale from -5 to +5 (Exel and Graaf, 2005).

As a preliminary step and to ease sorting, respondents (P set) first read through all statements to get an overall impression, then sort them into three roughly equal piles of agree, neutral or disagree. They then alternately sort a card from each of the three piles into the full range of the distribution with scores ranging from say -5 (most disagree) to +5 (most agree) for each statement (See Data Sheet Appendix 13.6). In this way they reveal their subjective positions over a range of representative propositions. They are free to make amendments until they are satisfied. If possible a brief interview follows where points of view are elaborated especially on extreme statement placements for use during interpretation.

Q sort administration may be done face-to-face, by computer (Web based tools are available), or mail. In face-to-face administration the researcher simply guides the respondent through the instructions and sorting procedure. Its primary advantage appears to be additional qualitative data drawn from personal observation and subsequent verbal interview if carried out. Research indicates no difference in reliability amongst the three methods (Exel and Graaf, 2005). Practical considerations of time available, location of respondents, and the need for richer data would guide the choice of method.

Data analysis and interpretation

Data analysis is a technical procedure similar to R-factor analysis and is normally done with the aid of computer programs. A square correlation matrix of all Q-sorts is first obtained and then subjected to factor analysis. Two approaches are now available to a researcher: Principal Factor (Centriod) Analysis (QCENT) or Principal Components Analysis (QPCA). Stephenson preferred QCENT over QPCA because it has lesser statistical precision (Brown, 1997). With QCENT a researcher can 'probe' subjective space by examining it from a desired perspective during factor rotation. It

allows for hypothesis testing or pattern discovery though *judgemental* or *theoretical* rotation. E.g. a researcher may fix a certain respondent based on prior knowledge as defining one factor to see what other factors emerge (Exel and Graaf, 2005).

Heuristic exploration of subjective possibilities is an important capability for Q-methodology in the discovery of naturalistic patterns (Darlington, 1997). The contrast with QPCA makes this clearer.

QPCA is statistically formal; it attains representation and summarization by minimizing unexplained variance in the derivation of principal components to give a unique solution. Factor rotation is *atheoretical* following a specified criterion such as Varimax or Minimax. Factors thus obtained are abstract mathematically defined constructs and may be harder to relate to reality (Darlington, 1997). According to Kline (1994:44) in R-Factor analysis, principal factors have greater theoretical interest because they are hypothetical, they “may account for correlations among variables without being completely defined by them”. Principal components on the other hand are completely defined by the variables in a matrix; they explain all the variance including any errors. For these reasons QCENT is recommended by leading practitioners of Q-methodology (Brown, 1980, McKeown and Thomas, 1988). Despite these theoretical advantages, research indicates that in practice QPCA and QCENT give similar results, QPCA with Varimax rotation is the most common procedure (McKeown and Thomas, 1988). Again this parallels Kline (1994) for R-Factor analysis that in most cases outputs are the same for most methods of factor analysis.

Whatever method is used should preserve as much of the variance as possible. Exel and Graaf (2005) suggest ‘the magic number 7’ as a rule of thumb for the number of factors to extract. Factor loadings are then determined for each Q-sort and the original factor set rotated as desired to obtain the final set of factors. The presence of several orthogonal factors is evidence of different points of view. Positive loadings indicate shared subjectivity with others on that factor while negative loadings indicate rejection of a factors perspective (Brown, 2004).

Finally the following measures and outputs are obtained for interpretation:

MEASURE/OUTPUT	DEFINITION
<i>Factor scores</i>	Normalized weighted average statement score (Z-score) of respondents that define that factor.
<i>Difference scores</i>	The magnitude of difference between a statement's score on any two factors that is required for it to be statistically significant.
<i>Defining variables</i>	Respondents whose factor loading exceed a given limit (e.g. $p < 0.01$)
<i>Distinguishing statements</i>	Statements whose score on two factors exceeds the difference score.
<i>Consensus statements</i>	Statements that do not distinguish between any of the identified factors

Compiled from Exel and Graaf (2005)

Factor and *difference scores* for the statements enable us to relate the composite factors to the original statements. *Distinguishing statements* lie at extreme ends for a given composite view (factor) and give us an appropriate starting point for its description. All this information highlights differences and similarities among the factors and may be supplemented with additional data from post interview questions or poignant statements.

5.4.3 SOME METHODOLOGICAL ISSUES

There are differences in the British appropriation of Q-methodology and its techniques in contrast to the dominant American one. Stainton Rogers and Stainton Rogers (1990) argue that Q-methodology should be used as simply a pattern analytic without reference to subjective meaning but only to alternative stories or accounts. They argue from a social constructivist framework in which the notion of meaning or self-reference is theoretically discounted. This comes across in McKeown (1999)

when he describes it as a pattern analytic method to make sense of narratives in a given discursive environment. Taking this less ambitious position for Q-methodology leads to some differences in methodology and emphasis such as the acceptance of many emergent factors, and preference for principal component analysis (QPCA) over principal factor analysis (QCENT). The data is just patterns, no notions of meaning are considered during interpretation. The British approach deviates from Stephenson's emphasis on access to subjectivity and meaning. A researcher must choose amongst the two approaches depending on their persuasion. However, the Q-sort is still said to express the best estimate from co-varying patterns that give upon further analysis "...indications of the techtonics that render our social texts and cultural discourse..." (Stainton Rogers and Stainton Rogers, 1990), similar to American Brown's (1991) "vectors of thought".

Having considered the two methodological approaches, we now narrow down to a specific research design for adoption to investigate Kenya's ICT change process.

5.5 RESEARCH DESIGN

5.5.1 RESEARCH GOAL AND CHOICE OF METHOD

Our research questions require that we explore interrelationships between the broader context for ICT4D projects in developing counties, the immediate project context and actors, in historical time. Figure 5-6 shows three types of research and their location within the critical realist representation of social reality. *Generalization* attempts to find patterns at the level of events, while *abstract* research would be located at the level of structures and mechanisms with little concern for events except as possible outcomes. An *intensive* realist research is most appropriate to explain relationships between structures, mechanisms and events in their context (Dobson, 2001). Its outcome will form the basis for reflections on the broader strategic ICT4D context and an alternative approach to development that may give voice to marginalized populations.

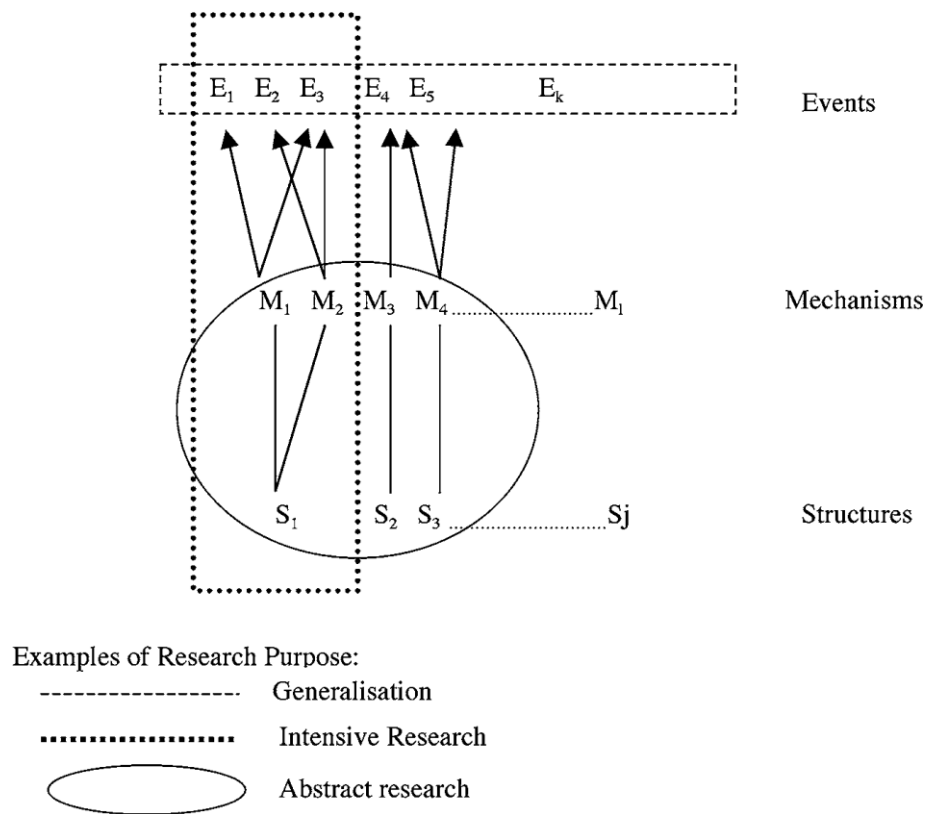


Figure 5-6: Research purpose in social reality

(based on Sayer, 1992:11)

5.5.2 CASE STUDY RESEARCH

According to Yin (1984) and Benbasat et al.(1987) the exploratory case study research design is most suitable to meet the requirements for an intensive study into the ‘deep structure’ of social reality for which no theory exists. The same approach was used by Silva and Hirschheim (2007) in a study of Strategic Information Systems with a punctuated equilibrium model of change. According to Benbasat, Goldstein, & Mead (1987) case studies are useful when investigating a chronological chain of events and provide context for the study of IT strategy. Institutional case studies provide a contextual and historical account of the E-Governance initiatives in their environment (Myers, 2005). The exploratory case study can include management narratives and stories for a rich picture of reality required by a critical realist study. Such case studies detail the interplay of ideologies seeking endorsement through the various orders of society, people, their decisions, and actions in narratives of the lived

experience, for evaluation over morphogenetic cycles to produce *analytical narratives* (Archer, 1995).

Analytical narratives explain emergent effects in people and social groupings that are in turn reflected in emergent structures and cultures within public ICT systems and processes. This follows Archer's (1984) analytical account of change in educational systems in Britain over hundreds of years detailing ideological conflicts between religious and other groups for control and their emergent effects. ICT led transformational change is much faster, emergent changes are in the order of years or decades at most. Officially Kenya's E-Government Strategy was launched in 2004, and the ICT Bill published in 2006. Our research methodology requires that we go back as far as is necessary in time to include past and present ICT activities that have now been subsumed under the inclusive E-Government strategy.

5.5.3 RELATING CRITICAL REALISM TO Q-METHODOLOGY

Potentially there is an easy affinity between critical realism and Q methodology. Critical realism seeks to uncover generative mechanisms that give rise to present realities. Part of that reality is infused with the pervasive subjectivity in social systems that comes into play at individual level, but whose operation may only be inferred from historical accounts. The methodology for developing analytical histories of emergence is retroductive and would be improved by fresh data sources (Archer, 1995).

Blaikie's (1991) argument against triangulation due to incommensurate epistemological and ontological assumptions is less applicable for two reasons. First, critical realism admits multiple perspectives since by default it has a pluralist theoretical outlook (Olsen, 2004, Mingers, 2001). Any argument against it would have to address critical realism's fundamental premises and account of causality as generative. Secondly they are much closer in epistemological and ontological assumptions. Like critical realism Q-methodology cuts across the objective-subjective divide, "Epistemologically, Q-methodology raptures the boundary between the scientific and interpretive frameworks..." (Goldman, 1999). It also relies on a process of discovery through abductive inference to arrive at operant factors,

paralleling retroduction in critical realism. Both aim for the best possible naturalistic explanations given the empirical data available.

Operant factors are environmental and operate across individuals, so they may be linked to historical developments at the level of the cultural system. Individuals are aware of dominant patterns of ideology that are relatively enduring within a community, and take decisions and actions in relation to such ideologies in an objective sense during interaction. Q-methodology does not tell us anything about the distribution of operant factors across the population, only of their presence. What matters is who holds what opinions and their placement (as actors, primary, or corporate agents) in the social system. Q-methodology reduces the interpretive gap by illuminating the account of reality to give access to existing “vectors of thought” (Brown, 1997) or “tectonics...that render our social texts” (Stainton Rogers and Stainton Rogers, 1990), greatly improving M/Ms account of historical events and casual mechanisms. We have greater confidence that whatever ideology factors are interwoven in causal analysis are operant (actually influencing behavior in the community). They are a snapshot of the current operant factor structure where we anchor qualitative data interpretation in objective social reality. Other data sources will tell us of the ‘rise and fall’ of these ideologies in time.

5.5.4 MULTI-METHOD RESEARCH DESIGN

Mingers (2001) study of pluralist methodologies identified five different types of multi-method research designs as listed below. The dominant (imperialist) model is proposed with Archer’s Morphogenetic Approach (M/M) dominant and Q-methodology supplementing. It may also be considered partially multilevel because the Q-methodology study targets discourse rather than material social interactions; M/M targets all levels of social reality.

Different Types of Multi-method Research Designs (Mingers, 2001)

1. Sequential: Methods are employed in sequence with results from one feeding into the later one.
2. Parallel: Methods are carried out in parallel with results feeding into each other

3. Dominant (Imperialist): One method or methodology as the main approach with contribution(s) from the other(s)
4. Multi-methodology: A combination of methods, embodying different paradigms, developed specifically for the task
5. Multilevel: Research conducted simultaneously at different levels of an organization and using different methods

5.5.5 RESEARCH LAYOUT

Fig 5-7 on the next page illustrates how the complete research is organized under the Critical realist paradigm. On the left hand side is critical realism's account of the three domains of social reality under investigation. These are related schematically to steps in the proposed research process for the Case Study and Q-methodology portions of the study.

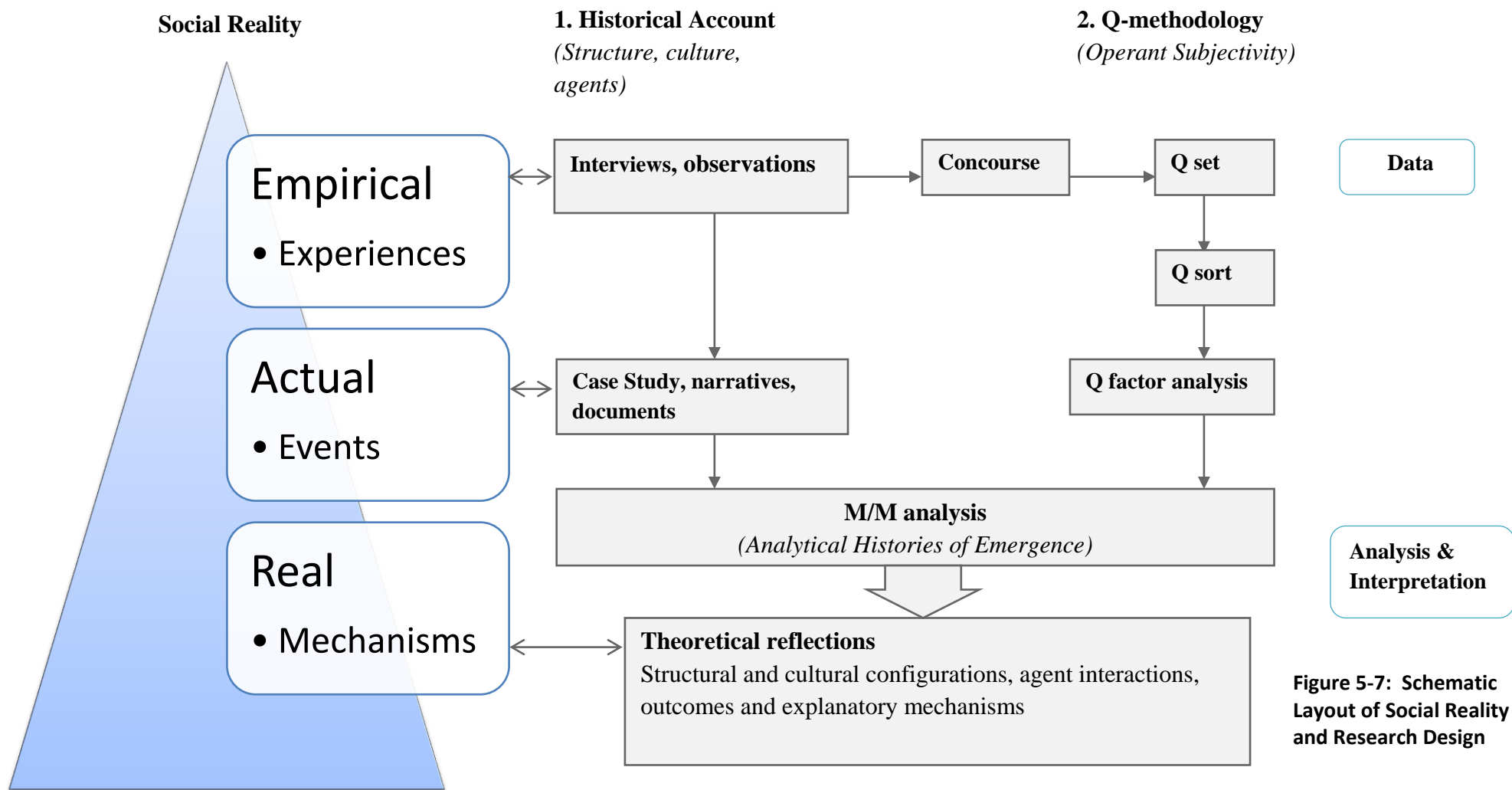


Figure 5-7: Schematic Layout of Social Reality and Research Design

PART III RESEARCH CONDUCT AND INTERMEDIATE FINDINGS

CHAPTER 6 Research conduct

CHAPTER 7 Findings and Discussions I

CHAPTER 6 RESEARCH CONDUCT

The study was organized as two independent but related investigations. Part 1 was the case study to bring out a rich historical account of Kenya's public sector ICT transformation process, while Part 2 was Q-methodology for E-Governance/ICT discourse. Fieldwork was conducted concurrently in Kenya from March to July 2006. A total of 19 in-depth interviews and 50 Q-sort profiles were obtained in addition to documents and observations. Research findings from both parts are discussed in Chapter 7, and integrated in Chapter 8 in the analytical narrative. We shall present research conduct for Part 1 followed by Part 2.

6.1 PART I CASE STUDY

6.1.1 CHOICE OF INSTITUTIONS

Primary and secondary data was collected from March to June 2006 in Kenya for two Kenyan public institutions (ministries) with significantly different records of success in implementing the national E-Government strategy. Benbasat et al. (1987) recommend contrasting cases because they enrich the data set and allow us to investigate convergence. A historical association with data processing and its continued central role in the E-Government rollout made the Ministry of Finance (MoF) a natural choice. Second was the Ministry of Health (MoH), which together with Education and Agriculture, are traditionally very well funded by development partners and are at the forefront in ICT use within government. Hence the MoH illustrates a very different ICT environment in comparison to the MoF whose funding is largely internal.

The initial target for interviewees was the two ministries; this changed while in the field when it emerged that new national-level institutions for E-Governance had been established. National level lobbying by private sector, civil society and other interest groups was crucial to the actual process with the government gradually adopting a more inclusive attitude to external players. Hence, though we were primarily

interested in change within government, diverse interest groups with some actually redrafting parliamentary bills drove the agenda and were included.

6.1.2 DATA COLLECTION

Personal in-depth interviews, document content analysis, and direct observation were the principal data collection methods. Two concurrent and related generic socio-systemic processes at institutional and national levels in public sector ICT change were identified during preparation. Reflections on interactions within and between E-Government systems development and implementation and the national ICT policy process directed the researcher in selecting interviewees and drafting the interview guide.

a) E-Governance systems development and implementation

E-Governance systems refer to ICT systems existing at any time, now subsumed under the label E-Government. In the past they represented traditional computer systems development that focused on operational level programs and hardware. Establishment of the Directorate of E-Government (Dir-eGov) in 2005 signaled the recognition that strategic level guidance was necessary for public ICT. Key actors in this process are technical ICT government officers, the head of public service, permanent secretaries (CEOs for ministries) and senior administrative officials.

b) ICT Policy development

This was a national level negotiation process involving a multitude of stakeholders that had been in progress for over ten years. Only in the past two years had significant progress been made when there was notable change in the government's attitude to inclusive policy processes. A national ICT policy is important for the enactment of relevant legislation to realize the promise of E-Governance, but since it touched on many issues and vested interests there was a long-term impasse.

c) Interactions between the two processes

The two processes are concurrent but have different timings, drivers, and actors. As the forgoing indicates, they have different institutional bases giving rise to conflicts, misunderstandings, delays, and poor outputs. The links are actors in catalyzing and bridging roles crucial to progress at the two levels. Important players were located in all sectors – public sector, civil society, NGOs, donor community, private sector, academia, and consultancy.

Interviews

In-depth interviews were considered the best option to obtain case study information. According to Silverman (2001) they can attain sufficient inter-subjective depth to access naturalness and cultural stories. Persons were selected judgmentally from institutions and their contexts to get as complete a picture as possible of the historical account and experience of public sector ICT in Kenya until theoretical saturation was achieved (Miller and Glasser, 1997).

An interview guide was developed to ensure that all important areas of interest were covered (Appendix 13.3). It was adapted to each type of respondent and organization. Specific project narratives and personal stories (biographies) were included to provide detail and insight into the genesis and life of ICT projects from an organic non-linear perspective.

Nineteen (19) in-depth interviews were carried out with persons listed in Table 6-1 (and Appendix 13.2) each lasting between 1 and 3 hours. All interviews except one were audio recorded using a conveniently small MP3 device after obtaining permission. Interview notes supplemented audio recordings and served whenever respondents requested that I switch off the recording device. This occurred at least once in most interviews when respondents felt that certain information was too sensitive to be recorded verbatim. Audio recordings and notes were transcribed into Microsoft Word files for analysis with the aid of NVIVO software. In total there were about 440 pages of interview transcripts in addition to field notes.

Table 6-1 List of Interviewees and their NVIVO Codes

No.	Organization/ Interviewee title	Remarks	NVIVO Code
<i>Directorate of E-Government</i>			
1	Senior Public Relations Officer	Non technical, conscious of broad implications of E-Government	EG1
2	Senior Economist	Involved in drafting E-Government Strategy	EG2
3	Principal ICT Officer (GITS/D-eGov)	Intimate long term association with ICTs in government	EG3
<i>Ministry of Finance</i>			
4	Deputy Director GITS	One of 2 deputies, directorship is vacant, other deputy acting	MF1
5	Systems Administrator GITS	Coordinates hw/sw projects for inter-ministry linkages	MF2
6	ICT Officer (Ministry of Planning and National Development)	Same building as Finance, previously one ministry, works closely with GITS	MF3
7	HRM Officer	IPPD user	MF4
8	Project Manager (IFMIS)	In MoF, works with 'donor' technical assistance personnel	MF5
9	Accountant General	User & policy maker, IFMIS, No audio recording	MF6
<i>Ministry of Health</i>			
10	Chief ICT Officer	Long serving, very informative	MH1
11	HR Officer	User IPPD	MH2
12	Health Records & Information Officer (Ag. Head HMIS)	Head on training in Japan	MH3
13	Dentist & Head – Child Health Promotion Program	Knowledgeable on strategy & ICT	MH4
<i>Private Sector</i>			
14	Group Executive Director	Leading spokesman	PS1

	Symphony & Chairman KIF (Kenya ICT Federation)	for Kenyan private sector & ICT	
15	Media Owners Association	Observed Forum to discuss ICT Bill on invitation	MOA
	<i>Civil Society</i>		
16	Coordinator APC-KICTANET	Hub for professional and civil society network activities	CS1
	<i>Development Agency</i>		
17	Programme Officer IDRC	‘Donor’ perspectives	DA1
18	Ex-Programme Officer IDRC	Led ICT policy research with MoPND	DA2
	<i>Academia/Consultants</i>		
19	Computer Science Lecturer/ consultant	Also ICT Consultant evaluated most GoK systems including IFMIS, HMIS, IPPD	AC1
20	Professor of Information Systems/ consultant	Intimately involved in most major ICT policy initiatives at the national level	AC2

Documents

Documented events provided the timeline upon which interview data was pegged to build as complete a picture of the emergent ICT process as possible. A documented record is robust and easily verifiable. We can build a chronological account of events and crucial timings for the transition process. In many cases they gave the researcher prior knowledge when framing questions or probing interviewees. Documents were chosen for their utility to add to what was already known. The main sources were:

1. Publicly available e-Governance documents from the Kenya Government, IDRC, US Agency for International development (USAID), United Nations Development Programme (UNDP) and other bodies involved with the Kenya E-Government program.
2. Internal departmental and project documents within case study research organizations.

Direct observation

At the invitation of a key civil society player, direct observation of ICT policy making in action was made at the Media Owners Association Forum to discuss the recently published ICT bill. This was very instructive as most top-level media executives and owners were present, with the Permanent Secretary, Ministry of Information and Communications making a brief unscheduled appearance that led to a dramatic heated exchange on the policy process. Notes from the event were typed and entered into the case study database.

6.1.3 DATA ORGANIZATION AND ANALYSIS

Case Study database and analysis

NVIVO qualitative data analysis software served as case study database that could include diverse data sources. All interview transcripts and interview notes were entered into the database. Notes taken from documents, observations, and the researcher's ongoing reflections were also entered into the database. A Project Log was maintained to track the chain of reasoning and inference from the data. NVIVO was invaluable in efficiently keeping track of, and collating themes, issues and ideas in masses of transcript data, notes and on-going reflections.

Two levels of analysis were done with corresponding outputs:

- a) *Descriptive level* for data summarization, collation and organization that resulted in factual Case Study descriptions and a chronological account of events. Both were confirmed and harmonized with documents and published sources.
- b) *Analytical level* for theoretical reflection and interpretations to develop analytical histories of emergence. Findings from the Q-methodology study were integrated with the historical account.

We shall present the conduct of the descriptive level here and the analytical level separately in Chapter 8. The analytical level is an application of M/M concepts to the empirical account of events as described that combines analysis and interpretation.

Secondary data analysis

A skeletal chronological account of the evolution of institutions, E-Government systems, and the ICT policy process was first developed after going through and getting thoroughly familiar with published documents. Appendix 13.4 is the chronology of events related to E-Government and national ICT policy development and implementation covering the period from pre-computers (early 1960s) to today's networked 'global village' (2006). It anchored interview narratives and subsequent analysis in documented historical time and was fleshed out with interview and observation data in the analytical account. Figure 8-1 in Chapter 8 is a graphical presentation of the chronology of events.

Primary data analysis

Nodes represent themes, ideas or concepts in NVIVO; they are collections of similar statements from interviews that ground empirically the theme, idea or concept. Initial coding was open with over 80 free nodes obtained inductively from the interview transcripts. Table 6-2 is a summary of node types used.

Table 6-2 NVIVO nodes (themes)

Node type	Number	Comment
Free (initial)	>80	Obtained inductively as first step
Free (Derivative)	13	Obtained after theoretical reflections
Tree	23	4, with 17 sub-nodes
Relationship	2	For 4 derivative nodes

After some preliminary analysis and modeling, additional themes and constructs drawn from interviews and chronological framework were added. Concepts and ideas were explored with the aid of NVIVO data organization and modeling capabilities. Tree nodes were introduced to represent hierarchical relationships. Node sets, deeper thematic nodes, and relationship nodes, were derived from the free nodes. Dynamic models and relationship nodes were added in later stages during analysis and inference. Four dynamic models of social entity relationships and theorized mechanisms were developed over the duration of the study. As more transcripts and documents were analyzed the accounts got richer but with diminishing extension of

thematic reach until no new themes were emerging. This was considered to be theoretical saturation indicating that the historical account was substantively complete as narrated and documented (Glaser and Strauss, 1967).

Table 6-3 NVIVO nodes after analysis

NVIVO entity	Nodes or composition
1) Node Sets that group related nodes	<ul style="list-style-type: none"> a) Discourse b) Key Themes c) Outcomes d) Phases 1-4
2) List of derivative nodes (Themes) included after reflection and analysis on free nodes.	<ul style="list-style-type: none"> a) Confidence b) Power and control c) Freedom d) <i>Kairos</i> e) Actional-innovation f) Trust g) Reasons h) Phase 1 1963-1990 i) Phase 2 1990-2000 j) Phase 3 2000-2004 k) Phase 4 2004-2006 l) Official discourse m) Subaltern voices
3) Relationship nodes that show important empirical relationships	<ul style="list-style-type: none"> a) Confidence (Reciprocal) Actional-innovation b) MoH data mgt (Associated) Power and control
4) Dynamic models made in the course of analysis	<ul style="list-style-type: none"> a) Phase 1 Interaction (A preliminary model) b) High Level Interaction Phase 1-2 c) High Level Interaction Phase 3-4 d) Subaltern Project Evaluation

Table 6-3 lists NVIVO entities and nodes at the end of the analysis drawn from the Project Log and NVIVO Projects Summary (Appendix 13.5). All were important to ongoing theoretical reflection and development of the analytical account in Chapter 8. The initial outputs from this analysis were Case Study descriptions and the detailed chronological account of the evolution of Kenya's public sector ICT related

institutions, systems and policies. In the next section I present the conduct of Part 2 Q-methodology study.

6.2 PART 2 Q-METHODOLOGY STUDY

The five steps for a Q-methodology study were carried out in parallel with ongoing case study interviews and document analysis as follows:

6.2.1 DEFINING THE CONCOURSE

Part I (Case Study) and Part II (Q-methodology) of the research were carried out concurrently so that interview data from Part I would form part of the concourse. About 2/3 of the way through the interviews, statements were selected for topical variety to form part of the concourse. In general they did not differ significantly in content from published sources except for richness and contextuality. Additional published sources were newspapers, conference presentations, magazines and journal articles. A total of 186 statements formed the final concourse.

6.2.2 DEVELOPMENT OF THE Q SET

A factorial design with two dimensions was adopted as selection structure for its simplicity and effectiveness in ensuring equitable coverage (Table 6-3). The dimensions **Subject** and **Orientation** were obtained inductively from the content of the concourse as Brown (1980) suggests. For the dimension Subject, Gender and Youth were subsumed under Equity when it became clear that Equity was the principal concern in both cases. Economic Growth and Economic Development reflect two opposing sides in the discourse also encountered in Chapter 2 literature review, one treats ICT as a sector in the economy while the other perceives it as an enabler of social and economic progress. The second dimension, Orientation to ICTs and E-Government, ensured balance between optimistic and pessimistic viewpoints to avoid sample bias. All 186 concourse statements were categorized under these two dimensions to facilitate systematic selection with the aid of an MS Excel worksheet. Each combination had 2 replications to give a Q-set of 54 ($9 \times 3 \times 2$) statements. Two individuals conversant with Kenya's ICT4D discourses as lecturers and consultants were given a list to check the statements for comprehensive coverage and

ambiguity. Only one or two statement wordings were affected and one was replaced to include a direct statement on corruption. The statements were then printed out on 3" × 5" cards ready for administration.

Table 6-4 Selection of the Q Set

Dim 1: Subject			Combinations			
1	G	Governance		O	N	P
2	C	Capacity	G	GO	GN	GP
3	P	Participation	C	CO	CN	CP
4	D	Economic Development	P	PO	PN	PP
5	E	Equity	D	DO	DN	DP
6	T	Technology	E	EO	EN	EP
7	Eg	Economic Growth	T	TO	TN	TP
8	I	Identity	Eg	EgO	EgN	EgP
9	M	Management	I	IO	IN	IP
Dim 2: Orientation			Total = 9 x 3 = 27			
			With 2 replications			
1	O	Optimistic	Required statements = 54			
2	N	Neutral				
3	P	Pessimistic				

6.2.3 SELECTION OF THE P SET

A factorial design with two dimensions **Location** and **Seniority** and was used for the P set (Table 6-4). The principal dimension was respondent's Location amongst the stakeholder groups Public Service, Private sector, Civil Society, Academia/consultancy and Development agencies. From the interviews there were no other significant stakeholder groups. Age was considered as a possible dimension for attitudinal differences observed during interviews especially in the public sector.

However it was discounted when it became apparent that other factors like personal attitudes to work and inappropriate preparation for ICT change were also responsible for older civil servants' limited enthusiasm. Some interviewees were elderly and successfully adapting to the information age.

Table 6-5 Selection of the P Set

Dim 1: Seniority	Label	Combinations			
Junior Management	a		a	b	c
Middle Management	b	d	ad	bd	cd
Senior Management	c	e	ae	be	ce
		f	af	bf	cf
Dim 2: Location		g	ag	bg	cg
Public Service	d	h	ah	bh	ch
Private sector	e				
Civil society	f	Total = 15 x 3 = 15			
Academia/consultancy	g	With 3 replications			
Development agency	h	Required respondents = 45			

Gender equity in ICT and E-Governance was considered as a possible dimension as it was captured in the concourse and is an important issue in development literature. A number of case study interviewees were women in leading positions in Kenya's ICT community. Because they did not appear particularly concerned about gender equity in E-Government/ICT separately from the general gender equity problem it was omitted. Instead managerial Seniority was included to capture lack of leadership and

championship in E-Governance cited by practically all respondents. Leadership is repeatedly mentioned in the literature as important to effective change. Junior officers would be expected to be more critical of their seniors while the latter may be more reflective and realistic of the task at hand. Both age and gender were captured as part of bio-data and can be investigated further if necessary. The final set consisted of 45 ($5 \times 3 \times 3$) respondents allowing for 3 replications.

6.2.4 Q-SORT ADMINISTRATION (DATA COLLECTION)

A pilot test was carried out prior to the main survey to ensure that the Q set was understandable to the expected respondents and that it divided into 3 roughly equal heaps of agree, neutral, and disagree (McKeown, 1999). Four people 'Q-sorted' the 54 cards and confirmed that they understood them well enough as well as the instructions. They also confirmed that they formed three roughly equal heaps of agree, neutral, and disagree. A factorial design generally ensures equity in the spread of possible responses.

A variety of respondents from different organization types and seniority were then selected in accordance with the P set categorization profile. Contact was made and face-to-face administration sessions were booked in advance. The condition of instruction required that they sort the cards according to a forced quasi-normal distribution. A forced distribution would force respondents to think the statements through. A relatively flat distribution was chosen because the topic was controversial in the literature and from interviews. Three additional post interview questions were included as shown in the Data Sheet (Appendix 13.6).

Fifty (50) individuals performed the Q-sort procedure although the initial proposal was for forty-five (45). During data collection some targeted respondents refused to do the sort preferring a verbal interview, while others declined. Civil servants were particularly forthcoming and we ended up with more of them than anticipated. Five (5) extra persons were added to ensure that each category of respondent had at least two representatives. Theoretically, slight imbalance in numbers would not affect outcomes since it is the degree of correlation between individuals that matters.

Sample diversity is more critical to capture as many potential alternative opinion positions as possible (Exel and Graaf, 2005).

Each respondent sorted the 54 uniquely numbered statement cards on a table according to the suggested distribution; afterwards they completed the Data Sheet to record their pattern of statements. They were also requested to answer three post interview questions. All Data Sheets were coded to reflect the identity and category of respondent.

6.2.5 DATA ANALYSIS AND INTERPRETATION

Data Sheets were first checked for accuracy and some minor data cleansing, some details required confirmation and clarification from respondents. Data was then entered into PQ-Method, a freely available custom software for Q-methodology data analysis based on Brown (1980).

After obtaining the initial correlation matrix, Principal Factor (Centroid) Analysis (QCENT) was first used to obtain initial factors. However there was great clustering around just one factor. Visual inspection and rotation failed to produce significant loadings on more than two factors, the second with very few defining variables (sorts). Principal Components Analysis (QPCA) was tried next. It gave easier to interpret results and was adopted since as earlier indicated, the two methods give similar results (Exel and Graaf, 2005, McKeown and Thomas, 1988).

Using the QPCA option in PQ-method software, starting with two factors, we extracted an increasing number of factors until the “too many factors” stage was reached. With a 4-factor solution one of the factors had very few characteristic statements and was highly correlated with another factor. A 3-factor solution was found to be most suitable and made most sense from the data and subject matter. Final *operant factors* were obtained after extraction and varimax rotation. Of the 50 respondents, 38 loaded significantly on at least one of the three factors, with a maximum of 21 defining variables (sorts) in one case. The nature of the factors extracted was evaluated by considering in order: *normalized factor scores*, *distinguishing statements (characterizing)* and *consensus statements*. PQ-Method

gives other outputs that are useful when comparing factors in pairs, and together, for a comprehensive description. Appendix 13.8 a selected set of outputs used for interpretation.

6.3 CONCLUSION

Field research was carried out as planned in most cases. It was relatively easy to obtain respondents once I obtained official permission from the authorities. The subject was topical and many were very willing to share their experience. There were occasional scheduling difficulties for senior civil servants who appeared to have very busy, erratic or highly contingent work schedules and could be called for meetings on short notice. For these reasons I was not able to interview the ICT Secretary who could have been a key informant. But it was felt that the data collected from interviews, documents and observations was a faithful representation of what had transpired.

The Case study descriptions from Part 1 and Factors of operant subjectivity from Part 2 are presented next in Chapter 7 as intermediate findings and discussions.

CHAPTER 7 FINDINGS AND DISCUSSION I

Chapter 7 presents findings and discussions from Parts 1 and 2 of the study in preparation for the analytical account of change in Chapter 8. Kenya's public ICT institutional framework and the two ministries as at June 2006 are described as one output from the case study. We also situate the Q-methodology findings on E-Governance/ICT discourse in social theory to lay ground for triangulation with the historical account of events.

7.1 PART 1: CASE STUDY DESCRIPTIONS

7.1.1 OVERVIEW OF KENYA'S PUBLIC ICT INSTITUTIONAL FRAMEWORK

Historically public sector ICT activities were centered on the Ministry of Finance. According to the *Kenyan ICT Sector Working Group Report* (ICT-SWG, 2006) other ministries are today considered stakeholders. The institutional framework described below was as at June 2006 after many reforms and re-structuring of ministries discussed in detail in Chapter 8.

1. *Ministry of Information and Communication* provides overall leadership for the ICT sector including regulation and promotion.
2. *Office of the President* that hosts the E-Government Directorate responsible for E-Government promotion and rollout.
3. *Ministry of Finance* hosts the government's technical ICT wing Government Information Technology Services (GITS).
4. *Ministry of Planning and National Development* that hosts the Central Bureau of Statistics which collects, analyzes, and disseminates statistical information.
5. *Ministry of Environment's* Department of Resources Survey and Remote Sensing that stores, analyzes and disseminates Geo-spatial data on natural resources.

Their activities are expected to be harmonized towards the stated vision and mission for ICT in Kenya:

Vision: Kenya becomes an information and knowledge based society through information and communication technology for improvement of the welfare of Kenyans.

Mission: To provide information and communication based solutions and ensure the availability of efficient, reliable and affordable information communication services countrywide.

Other ministries are clients of the key stakeholder ministries and departments for ICT services. GITS has posted officers (ICT Officers) to each ministry to initiate and coordinate ICT activities. Previously they were all based at the Ministry of Finance head office and went out as need arose. Under the present setup the Director GITS provides technical leadership and resources (financial and human) while the head of the E-Government Directorate provides strategic direction. The Ministry of Information and Communication's (MoIC) role is much broader for it includes broadcast media and telecommunication services regulation, and is also responsible for a vibrant private sector, and Telkom, a sluggish public telecommunications monopoly.¹ Consequently its work is more politicized with the many stakeholders outside government. A parastatal (quango) body, the Communications Commission of Kenya (CCK) under this ministry with a broadly representative board serves as industry regulator. The MoIC also has a relatively dormant policy unit called the National Communications Secretariat (NCS).

Kenya's private sector, civil society and development agencies have had decisive influence in shaping government policy. The private sector apex body of professional associations, Kenya Private Sector Alliance (KEPSA), and Telecommunication Service Providers Association of Kenya (TESPOK), gave the lead to private sector advocacy. Civil Society and development agencies helped organize all stakeholders through seminars, workshops and web based forums culminating in the formation of the Kenya ICT Network (KICTANET), a virtual multi-stakeholder forum (Munyua, 2005). Of all organizations KICTANET had the most significant influence on

¹ 51 percent of Telkom was sold to France Telecom in December 2007 as part of the privatization drive.

government ICT policy and programmes over the period under study. It was to capture the role of such non-government players that data collection was extended while in the field to include interviews with key players in the private sector, civil society, consultancy, and academia.

7.1.2 CASE STUDY INSTITUTIONS

Ministry of Finance

The Ministry of Finance (MoF) is a relatively small ministry by number of employees but powerful by virtue of doubling up as the Treasury for the government. It has been merged and split several times with the Ministry of Planning and National Development (MoPND), both are data intensive ministries housed in the same building. The MoF deals with all government finances – disbursements and revenue collection, while the MoPND hosts the Central Bureau of Statistics and gathers all economic planning, monitoring and evaluation data. A Permanent Secretary (PS Treasury) heads the MoF assisted by three secretaries: Financial, Investment, and Economic, heading three divisions. The latter are at the same level as PSs for other ministries making the PS Treasury a notch above all other PSs.

Historically the MoF has hosted Government ICT for heavy number crunching associated with payrolls and budgeting. Its ICT unit GITS actually serves the whole government. The Directorate of E-Government (Dir-eGov) established in late 2004 under the strategic Office of the President (OoP) ministry is an outgrowth of GITS with most personnel drawn from it, including the present ICT Secretary (title for the head of Dir-eGov) who once served as the Director of GITS. A Deputy Director presently heads GITS in acting capacity. Most public ICT work is under GITS but in close cooperation with Dir-eGov. Understandably, present institutional arrangements are a work in progress, but this scenario creates role conflicts and reporting confusion amongst ICT officers on the ground.

Our study in this ministry covered government-wide E-Government efforts with many stakeholders. There were two cross cutting E-Government applications, the Integrated Payroll and Personnel Database (IPPD) and the Integrated Financial Management Information System (IFMIS). Both were relatively new with the latter

only at pilot stage. Development agencies especially the World Bank were very interested in their rollout; both are frequently cited in development planning and policy documents. Many small ad hoc systems developed in-house have kept things going for many years in crisis management mode as user needs outstripped systems production capacity. An important ongoing project under GITS is structured cabling for all government departments for better interconnectivity. MoF will continue to be a key player in Kenya's public ICT in the foreseeable future.

Ministry of Health

Providing effective health services is data intensive to track disease and health trends over dispersed communities. This makes effective health information systems crucial to the Ministry of Health (MoH). A Permanent Secretary heads the ministry with technical oversight by the Director of Medical Services. It is functionally divided into divisions and departments under which various donor funded health programs operate. Depending on the program's ability to attract funds they can be very autonomous, creating serious informational and managerial difficulties for central administration. Over the past few years there have been many attempts to craft a workable organization structure but powerful vested interests stymied progress.

Following global trends in healthcare, a Sector Wide Approach (SWAP) guides health policies and programs whereby all players in a sector plan and coordinate efforts for better services. Under this framework, the efforts of many development agencies, NGOs, the private sector, and government may presumably be managed more coherently. A proposed centralized data repository is critical for it to work effectively assuming there are also efficient reporting and data update mechanisms countrywide. Some donor agencies are apparently not happy to share data that openly. If there was a data policy as proposed in the ICT bill they would be legally bound to. This is a constant source of frustration for ICT and medical statistics staff. It raised important questions of asymmetrical power relations with some respondents voicing suspicion about the real aims of 'donors' engaged in the sensitive area of medical research.

The central ICT unit is very small comprising officers seconded from GITS (this has been the policy across the government over the years) and has serious operational

problems stemming from larger issues with the ministerial organization structure. The main ICT application is the Health Information Management System (HMIS) for national health data monitoring and reporting. Its data and reports are way out of date to be of any use to management or health programmes, a problem exacerbated by data collection difficulties from donor funded programmes as mentioned above. Most health programs have small independent ad hoc ICT units operating as ‘silos’ with ‘donor’ support that generally ignore the central ICT unit. Other major applications are the government wide IFMIS for finance in the pilot stage and IPPD for payroll. IPPD was recently rolled out with greater difficulty in MoH when compared to other ministries and required a special external team to overcome internal resistance.

Clearly the MoH faces considerable obstacles to effectively applying ICTs. Its managerial and organizational difficulties are related to multiple donors whose programmes create operational and systemic dysfunctions. Donor interests are intertwined with local players and bureaucrats’ games for power and control.

The two brief case descriptions illustrate contrasting ICT4D scenarios that will deepen our understanding of developing country IS contexts. A complete account of the ICT change process is given in Chapter 8 integrated together with findings from the Q-methodology study presented next.

7.2 PART 2: Q METHODOLOGY STUDY

7.2.1 FACTORS OF OPERANT SUBJECTIVITY

Three factors of operant subjectivity were extracted and appropriate labels were assigned to capture the essence of a given factor and its general orientation. Operant subjectivity as explained in Section 5.4.1 refers to environmentally conditioned subjectivity and is volitional rather than instinctive. This means that these ideological orientations are presently organizing Kenya's ICT discourse, each has a constituency that it feeds (in ideas), and that in turn, sustains it. They are described below with a summary of salient characteristics drawn from *normalized factor scores* and *distinguishing characteristics* from Q-methodology analysis outputs (Appendix 13.8). A table highlights statements indicative of the nature of each factor and its relationship to other factors. Distinguishing statements have high positive or negative values so the tables have two columns to cater for each type of distinguishing statement, statement numbers are given in parentheses.

Factor 1: Cosmopolitan-liberal

Positive that E-Government and ICT can bring desirable change within a liberal democratic socio-economic outlook

- a) ICT is seen in most positive light as agent for change, with realism on political and infrastructure limitations.
- b) Advocates the pursuit of wealth but with benefits distributed broadly, hence the concern for access to ICT as a human right despite commercial conflicts.
- c) Great confidence in Kenyans and Africans to manage change, but can cooperate with outside assistance, though it is not crucial as evidenced by ambivalence towards the role of development partners.
- d) Ethnicity is not considered important hence the urbane cosmopolitan outlook, reflecting the younger educated group in African cities. Notably, corruption is again not perceived as widespread among Kenyans, but existence of corruption elsewhere is no justification for whatever there is.

Table 7-1 Factor 1 distinguishing statements

More Important (positive)	Less Important (negative)
<ul style="list-style-type: none"> • Politically conscious, aware of need for sustained will for change (25). • Youth oriented, older persons seen as obstacles (50). • Economically liberal capitalist against monopolies (23), accepts pursuit of wealth first (22) for all (21). • Positive on ICT as change agent or efficiency & effective governance (30, 42). • Confident in the potential for Kenyans' and youths' (26, 15). • Confident in Africa's capabilities and potential (3, 31). • Access & participation in ICT as a fundamental human right, despite commercial conflicts (13, 27). 	<ul style="list-style-type: none"> • Need for particular African solutions (49) – hence global minded. • Elitism (19), indicates support for democratic distribution of economic benefits (21) and participatory approaches. • That Kenyans are generally corrupt. Notably different from the other 2 factors (47). • Ethnic differences (32) indicating a cosmopolitan outlook. • Mobile telephony (52). • Role of development partners in ICT (45).

Factor 2: Conservative pro-government

E-Government and ICT may bring change but must address broader needs; so far we are doing O.K.

- a) Concern for broader societal needs but supportive of current ICT policies even if they may appear to undermine those needs.
- b) ICT is seen in positive light but only to the extent it meets broader societal needs, not just wealth creation for the ICT sector. ICT is not considered important in addressing problems of governance.
- c) Shows defensive views on government's abilities in ICT skills and political will. They consider civil service pay to be as important as ethical and moral values that civil servants are expected to uphold.
- d) Conservatism is reflected in negative opinions on Africans' abilities to innovate and technical and managerial capabilities. Nevertheless, there is support for Africa to seek its own solutions, possibly arising from unhappy experiences with abandoned or stalled donor projects in the public sector.

Table 7-2 Factor 2 distinguishing statements

More Important (positive)	Less Important (negative)
<ul style="list-style-type: none"> • Basic needs like water, food, ICT not a priority (11) • Current policies favor the rich (14) foreign investors (43) and shows concern for local enterprise. • Sustainability of donor funded projects; need to free selves from donors (12) and Africans should seek alternative development policies (29). • ICT policy and strategy should focus on ICT as an enabler, not as a sector (8). • Corruption is a big problem (47; 34). Media reports are not necessarily biased. • ICT can help reduce poverty (13). • Tribalism in older ones (35). • Pay matters, not just values (41). • ICT's ability in government not inadequate (1). • Political will not critical for ICT driven change (25). • Kenyans are united as a people (33). • Current ICT policies don't just benefit the rich (14) - a conservative pro-government view. 	<ul style="list-style-type: none"> • Value of ICT in solving governance problems (28). • Mobile telephony (52). • Age and technology shyness (50) • Ethnic identifications are not crucial (32). • Less confidence in African capacity for innovation (4), but slightly more confident in individuals' abilities (3) or to take advantage of handicaps (51).

Factor 3: Afro-centric

E-Government and ICT are secondary to basic needs and cannot address problems of governance; we need to seek African alternatives to present development directions

- a) Pessimistic on many issues: they have no confidence in Kenyan people, youth or government's abilities or participation in the digital revolution; ethnicity and corruption are considered a big problem.

- b) Are ICT savvy, but ICTs are a peripheral concern and are not critical to addressing societal needs; it is a pro-people, anti-government, and anti-big business stance.
- c) Strongly against role of development partners or ‘donors’ and strongly advocate African solutions.
- d) Elitist in outlook that just a few committed people can bring about necessary change.

Table 7-3 Factor 3 distinguishing statements

More Important (positive)	Less Important (negative)
<ul style="list-style-type: none"> • Africa seeks alternative development paths (29) and independent solutions (49; 51). • Sustained political will (25). • Concern for donor projects’ sustainability (12). • Elitist, that just few people can bring change (19). • Ethnic identifications are crucial (32). • Corruption is a big problem (47) but Western media image is not justified (32). • Most ICT savvy (6), or define E-Government most broadly. 	<ul style="list-style-type: none"> • No confidence in youth prospects (15) in general. • Older civil servants are technology shy (50). • Strongly against role of development partners (45) as critical in ICT. • Kenyans are not yet online (46) – realism. • Wealth should not be ICT policy focus (22). • No confidence in government to progress (5) or skills (1) but confident in Kenyans as a people (26), they are not apathetic. • Not much faith in computers ability to change people (42), The problem is not just ICT but social and human (28), and access will not contribute to poverty reduction (13). • Online world not reflective of Kenyans (46). • Access to ICTs not a fundamental right (18; 17).

7.2.2 DISCUSSION: STRUCTURE OF E-GOVERNANCE AND ICT4D DISCOURSE

Operant subjectivity and ideology

Factor 1: Cosmopolitan liberal indicates a position ready to take on new ICT challenges with a confident co-operative attitude. They expect substantial payoffs in material terms to individuals, while ensuring fairness and equity. We may attribute its presence to the prevailing global movement towards a cosmopolitan ethos (Gasper, 2006, Thorup and Sørensen, 2004) and a network information/knowledge society (Castells, 2000b). Respondents have experienced firsthand the shift to a net-based society; presumably some are readying themselves to participate fully by adopting the predominant view on ICTs and E-Governance. This would include the underlying principles of the now triumphant principles of democratic liberalism. A notable distinction from the two other factors is the low importance attached to corruption. This may reflect pragmatism and confidence in overcoming obstacles since they perceive corruption as a worldwide problem, not just a Kenyan or African problem. Kenya's recent experiences with grand corruption and the drive for good governance by international development agencies with reduced corruption as a priority have made it a topical issue in the media (Munene, 2005, Opiyo, 2005, Afr-Con, 2000).

Factor 2: Conservative pro-government reflects conservatism and defensiveness from the incumbent government and traditionalists to pressure for change. This position accepts the need for change in the context of other social needs. Hence the policy ought to stress ICT's role as an enabler of development, not just wealth creation, similar to the position most development agencies adopt in ICT4D (DOI, 2001). It is from this factor that we locate one form of 'resistance to change' in acceptance of the status quo, and belief that current political will is sufficient in opposition to the other two ideological positions. We also note little confidence in Africans' abilities and capacity for innovation or in overcoming handicaps by turning them into opportunities. This may reflect some degree of dependency or an inferiority complex engendered by foreign aid (Bartle, 2005). Not surprisingly this position is the most favorable towards the role of development partners. However there is great concern over project sustainability when donor fashions change. Interviews indicated

many abandoned or failed donor projects in government that would create this sentiment.

We would expect this factor to be evidenced as a drag on deliberations and delayed action with only lukewarm support for local initiatives. The government has in fact been a follower rather than leader in ICT change over the past few years as multi-stakeholder processes took up the challenge of fostering a conducive environment for ICT exploitation (Munyua, 2005). Foreign or donor driven projects may continue to be well received in government but with some caution on project sustainability.

Factor 3: The Afro-centric position is people oriented and reflects extremist positions on E-Government and ICT change. E-Government and ICTs are considered peripheral to human and social needs whose solution presumably lies elsewhere. It is an elitist position holding that just a few people can bring about change. It advocates that Kenyans and Africans are fully capable of managing their own affairs, but ethnicity and corruption are a problem. They have very little faith in the government or development partners' ability to bring about desirable change. Instead there is strong advocacy for unique African solutions independent of global capital and 'development partners'. Despite the strong people orientation, ICT is not considered a basic human right, nor is the online world said to be reflective of Kenyans today. They agree with conservatives that wealth should not be a priority for ICTs and that corruption is a big problem but for different reasons.

From this position, we would expect well-articulated positions and realistic evaluations of the Kenya government's abilities to effect change. They are opposed to Cosmopolitan-liberals on many issues, which would result in protracted debates on key issues. One would be project goals and prioritization, the clear ICT as economic sector, or as enabler of development ideological divide (Mansell and Wehn, 1998). Both agree on the need for political will for any change to happen unlike conservatives that accord it less importance.

Theoretical interpretation is provided next for these factors using concepts from Archer's (2003) social realism on individual reflexivity that closely parallel our

findings. Additional insights are drawn from inter-group conflict theory from psychology.

Social realism and intergroup conflict theory

Q-Methodology findings are reflective of group or community level orientation of attitudes by virtue of the reflexive Q-sort procedure; reading them from Archer's social realism that is quintessentially reflexive would inform our reflections. In *Structure, Agency and the Internal Conversation* (2003) she sets out the relationship between social structure and individuals based on the notion that each of us seeks to work out our *modus vivendi* through a mediatory process that entails putting together our ultimate concerns. "Courses of action are produced through the reflexive deliberations of agents who *subjectively* determine their practical projects in relation to their *objective* circumstances" (Archer, 2003). Primary and corporate agents put together concerns and formulate them into projects; ultimately they become practices through a mediatory process: Concerns → projects → practices. Accordingly unless we take into account this final stage mediation, in the end we must rely on positivist empirical generalizations based on statistical significance for explanation.

The internal conversation is the locus where causal powers of agents meet causal powers of social forms; ultimately each of us adopts a *stance* towards society. These are basic orientations towards society and provide the micro–macro link, a conjoint of objectivity and subjectivity according to Archer. A stance is a subjective judgment by the agent about what he or she attaches to the objective social context and its place in his or her own life. When we compared the three factors from the Q-methodology study with Archer's three basic empirical stances of individual level reflexivity some similarity was evident.

Autonomous reflexives are *accommodative* towards the social, and context for them is a means to realize concerns. They adopt a **strategic** stance that we may identify with a cosmopolitan-liberal outlook. Primarily this is the pursuit of personal welfare in a liberal democratic society. Their positive outlook implies self-confidence to overcome potential constraints that are perceived rather as opportunities to generate

new social forms. Hence they are the primary change drivers in society; they ‘foster morphogenesis.’

The conservative pro-government outlook reflects avoidance to activate social constraints; this would be the **evasive** stance of *communicative reflexives*. These are *collectivistic* towards the social, their concerns and contexts are inseparable. Hence projects are conceived within the bounds of the existing social set up leading to contextual replication. Because they seek social integration, they “foster morphostasis”. A supportive attitude towards the status quo in government actions, and ambivalence to lukewarm support for ICT change is supported strongly by the data.

Meta reflexives are the “conscience of society”, the **subversive** stance reflected in the Afro-centric outlook. They are *transcendental* towards society; their primary concern is personal and societal attainment of some specific ideals without compromise even at great personal cost. Irrespective of their other-worldliness, by keeping alive many ideals, they animate the cultural system by re-representing them as truths to society. Archer identifies these with alternative movements such as voluntary organizations, civil society and economy, cooperative organizations and social inclusiveness. The study shows a self-critical attitude by Afro-centrics concerning Kenya’s current prospects with a generally pessimistic outlook. They appear to greatly value local solutions with a strongly anti-western feeling. Yearnings for true freedom from neocolonial entanglements, and a concern for the poor or weak in society is associated with NGOs and CSOs in general (Coquery-Vidrovitch, 1988). E-Governance and ICTs are for this group, non-issues. Kenya’s internally unresolved postcolonial settlement has yet to come to terms with post independence ideals that live on within the cultural system. Their unremitting pessimism raises long-term issues of national polity that are beyond strategists calculating mode of action, or collectivists’ pursuit of social harmony in public sector ICT efforts.

Fractured reflexives are a fourth group that is unable to complete the mediatory process and adopt no viable stance reflected in their inability to accomplish projects. With time some recover and adopt one of the other three stances.

Archer's approach contradicts the notion that society is underpinned by some global *shared values* as in Parsonian functionalism. Our results support this assertion and suggest that we concentrate on shared concerns and the possibility for temporal engagement through projects between groups. The list of consensus statements from Q-methodology results presents a point of departure. For example all positions agree that civil service reform is too slow and that "African time" is not very desirable in society today, time is money (statements 39 and 38). Their reasons for agreement may not be the same since their ultimate concerns are different, yet it offers room for constructive engagement.

A second line of theoretical support for the possibility of beneficial co-operation amongst corporate agents espousing the three ideologies is the classic *Robbers Cave Experiment* in intergroup conflict (Sherif et al., 1961, Fine, 2004). It showed the importance of groups to individual behavior and how they behave in the vicinity of competing groups. A key finding was that super-ordinate goals that require inputs from cooperative effort led to such cooperation despite a history of conflict and 'bad blood'. Leaders have a broader scope for interaction with opposing groups without being perceived as traitors, which allows intermingling of members and the pursuit of common goals. The quality and form of leadership for disparate groups would be critical to attaining common goals in Kenya's ICT transition process.

'Vectors' in Kenya's ICT discourse

The path from individual reflexivity to ideology in social discourse transpires through the daily pursuit of individual projects. At intermediate levels, autonomous reflexivity would manifest as the private sector, self-employed persons, and employees that actively manage their own career path. Kenya's ICT community has strong private sector pressure groups such as Telecommunication Service Providers of Kenya (TESPOK) that had very specific agenda for telecommunication business interests when engaging government. Similar arguments are made in Archer (2003) for all three positions. Important primary and corporate agents encountered during the study were individuals, organized groups from the private sector, CSOs, NGOs, government departments and ministries, the cabinet, parliament, development agencies and academics.

Ideological orientation (Operant subjectivity)	Cosmopolitan-liberal	Conservative pro-government	Afro-centric
Representative National level Institution(s)	KIF (KEPSA)	Government and ICT regulatory agencies	APC-CATIA ²
Selected intermediate level institution(s)	TESPOK, Media Council, NSE (High Tech & Growth Board Committee)	Local authorities, Computer Society of Kenya	FEMNET, ALIN, Afri-Afya
Subjective individual stance	Strategic	Evasive	Subversive
Mode of reflexivity	Autonomous	Communicative	Meta

Table 7-4 ‘Vectors’ in Kenya’s ICT discourse

Table 7-4 shows the matrix of correspondence between agents and ideological orientation in Kenya. The factors have a rather ‘obvious’³ feel to them, it appears natural to have conservatives, progressives and idealists. Since Q-methodology discovers patterns through the reflective Q-sorting process and factor rotation during analysis, there was no way to tell in advance what would emerge. The role of the three ideological groupings was confirmed from interviews and actual organizations and individuals in Kenya’s ICT community. Q-methodology gives this ‘natural’ expectation an empirical basis in operant subjectivity that would allow critical realist causal analysis when developing analytical narratives. This would not be possible were we dealing with empirical corporate agent groups. Of these there were seven types active in the ICT policy process (Private sector, government, CSOs and NGOs, development agencies, academia and consultants). Without Q-methodology we would have had to deal with a multitude of interpretations about ideological

² Though APC-CATIA is behind KICTANET, a coordination network for a multi-stakeholder ICT policy process, it is placed under critical because its ultimate concern is using ICT’s to expand human rights through broad based liberating access to ICTs and information. In effect it forced the government to listen to the people.

³ A sentiment expressed during a Warwick Business School departmental seminar of findings.

orientations inferred for each organized group. We reduced them to three ideological orientations which facilitates simpler but deeper inference.

We should not confuse an ideological orientation for a given social entity with individual composition as the diagram above would imply. A successful subversive (critical) organization will most likely be led by a meta-reflexive(s) willing to pay the price of holding to ideals over the self, like say leading Amnesty International's at times desperate fight for human rights (Archer, 2003). Within Amnesty would be highly productive autonomous reflexives pursuing personal goals in good pay and career advancement, and communicative reflexives that may like the camaraderie or social service aspects of the job. Individuals may come and go but the dominant ideological stance will remain or change only as enabled or constrained by conditions in material and ideational realms fostering morphogenesis.

7.2.3 RESEARCH PROPOSITIONS

From the two lines of theoretical support and matrix of actually existing organizations, two research propositions may be made:

1. Kenya's national level ICT change process discourse is characterized by three ideological stances: strategic, evasive and subversive, which may ultimately arise from individual efforts to formulate viable personal *modus vivendi*. No ideological grouping can wish the other's needs away, even with 'logical' arguments without acknowledging the fundamental legitimacy of each stance in relation to the others.
2. Temporal alliances will characterize change processes as interest groups from different stances find common ground to support, hinder or ignore initiatives for change. For this reason, an important determinant of change outcomes would be how well inter-group interaction is managed at the level of discourse.

Proposition 2 would explain the persistent calls for greater leadership and ICT championship encountered during interviews and in the literature on Kenya's ICT. In the absence of greater lead from the government, it is a task currently in the hands of a

multi-stakeholder Internet based forum discussed ahead.⁴ The propositions were incorporated during analysis in Chapter 8.

7.2.4 CONCLUSION TO PART 2 FINDINGS

The results provide an alternative perspective of Archer's three basic individual level stances towards society, but at an aggregated level. We reduced a disparate set of social groups and their ideational orientations into three ideologies or 'vectors of thought' for simpler but more insightful analysis. The concourse coverage was broad enough to reveal the full range of subjective behavior and comprised meaningful statements on ICT societal transformation to which respondents revealed their subjective positioning through the Q sort procedure. A narrowly focused Q study would not allow the full expression of peoples' positioning with respect to society as a whole.

The three ideological orientations manifested at a social level may ultimately arise from Archer's individual stances. While it is not proved from this study that they originate in the three modes of reflexivity, we may think of each discourse as providing *legitimacy* and room for each type of individual to grow and search out their desires in the social space of possibilities. That is the least one could ask for irrespective one's stance. Establishing and defending a space in the discursive realm is the first step in the struggle for survival. History testifies that the first step in any truly revolutionary act is always ideological and then material (Cabral, 1966a).

7.3 INTEGRATING PART 1 AND PART 2 FINDINGS

The proposed approach to triangulation links agency to operant subjectivity at the level of the cultural system through socio-cultural interaction. Q-methodology findings are a snapshot in time [April-June 2006]; we can identify the 'rise and fall' of ideological orientations and relative dominance through triangulation with historical data. In Part 2 (Q-methodology study) we identified three dominant ideological orientations that categorized apparently complex ideational interactions into three

⁴ Subsequent to this study the government established the Kenya ICT Board with broad representation in 2007 to provide necessary leadership.

generic classifications. The positions represent operant (environmentally conditioned) subjectivity and may be analyzed as having the characteristic of an objective force in society, not simply as epistemological categories. They are part and parcel of the cultural system that agents encounter ‘objectively’ during the ‘internal conversation’ (individual reflection) and in socio-cultural interaction. Their causal potentiality arises from differing stances towards society that may be rooted in personal, individual or primal pursuits for viable *modus vivendi*.

Relative strengths of the ideologies in the community are expected to rise and fall with the morphogenesis of agency (Harvey, 2002). Realization of their associated projects is contingent upon the configuration of corporate agents in relation to material resources for bargaining power and negotiating strength. They may be advantageous or adverse to the multiplicity of ICT4D objectives whose attainment or non-attainment is in the interest of different groups. Any ideological orientation outside of these is likely to be marginal to change at the societal level. Data from interviews and secondary sources will draw attention to it for inclusion if need be.

PART IV RESEARCH OUTPUTS

**CHAPTER 8 Findings II: Analytical history of
emergence**

CHAPTER 9 Discussions II

CHAPTER 10 Research reflections

CHAPTER 11 Conclusions

CHAPTER 8 FINDINGS II: ANALYTICAL HISTORY OF EMERGENCE

Analytical histories of emergence (or explanatory critiques) in M/M are accounts of social change as relationships between past events, historical continuity in ideas, culture, structures and people in a framework that permits causal inference (Archer, 1995). It can be revised in the light of new knowledge and scholarship. Chapter 8 presents this account as the main research finding. The narrative corresponds to the first degree of dialectical critical realism (First Moment, 1M) with categories of non-identity that generate contradictory positions, stratification and emergence in the account of change.

8.1 ANALYTICAL APPROACH

Primary and secondary data analysis and development of the analytical narrative proceeded iteratively with constant comparisons between interviewees, documented evidence, and the M/M framework. Research propositions from Part II Q-methodology on prevailing ideologies and possibilities for change were integrated into the analysis as explained in the last section of Chapter 7.

ICT4D systems are socio-technical systems whose change process involves technology and social components. Agent interaction is conditioned by technical as well as socio-systemic constraints and enablements. Morphogenetic cycles are expected to be short owing to dynamism in the ICT industry following Moore's Law and the rapid inter-networking digital revolution. Our analysis is primarily concerned with change in:

- (i) ICT systems in government;
- (ii) National ICT policy whether implicit or explicit.

It is most productive to analyze the two realms concurrently since they interpenetrate one another to generate situations that agents encounter during interaction. For each

analytical cycle we shall evaluate first-order emergent properties for structure (SEPs), culture (CEPs), and agency (people - PEPs), the potentialities they generate, and the resultant interactions to obtain the new configuration of emergent properties (second order). A practical four step summary of Archer's (1995) M/M methodology in Troster (2005) for developing analytical narratives was adopted:

- STEP 1** Tentative adoption of a set of periods characterized by periods of stability and times of change. Starting with the end of a period, we identify first-order emergent properties (FEPs) for structure, culture and people, conditioned from previous interaction.
- STEP 2** We identify potentialities arising from FEPs in Step1 above in the form of contradictions and complementarities as explained in Sections 5.2.5 and Tables 5-2 and 5-3.
- STEP 3** Describe and analyze the actions of agents in the form of interactions with the conditioning effects of extant structure and culture. It is from these that we obtain a new configuration of emergent structures as second-order emergent properties.
- STEP 4** Analyze the new configuration of emergent structures arising from agent interaction and social action in Step 3. This completes the analytical cycle and sets the stage for iteration back to Step 1 for the next M/M cycle.

8.2 ANALYTICAL HISTORY OF EMERGENCE

8.2.1 STEP 1: ANALYTICAL PHASES

Figure 8-1 is a summary of key events, contextual conditions, and four phases of stability and change identified in the evolution of public ICT governance. As employed, a 'phase' signifies an appreciable change in the social system (ICT related structures, cultures and agents) from that before or after. The four phases identified are:

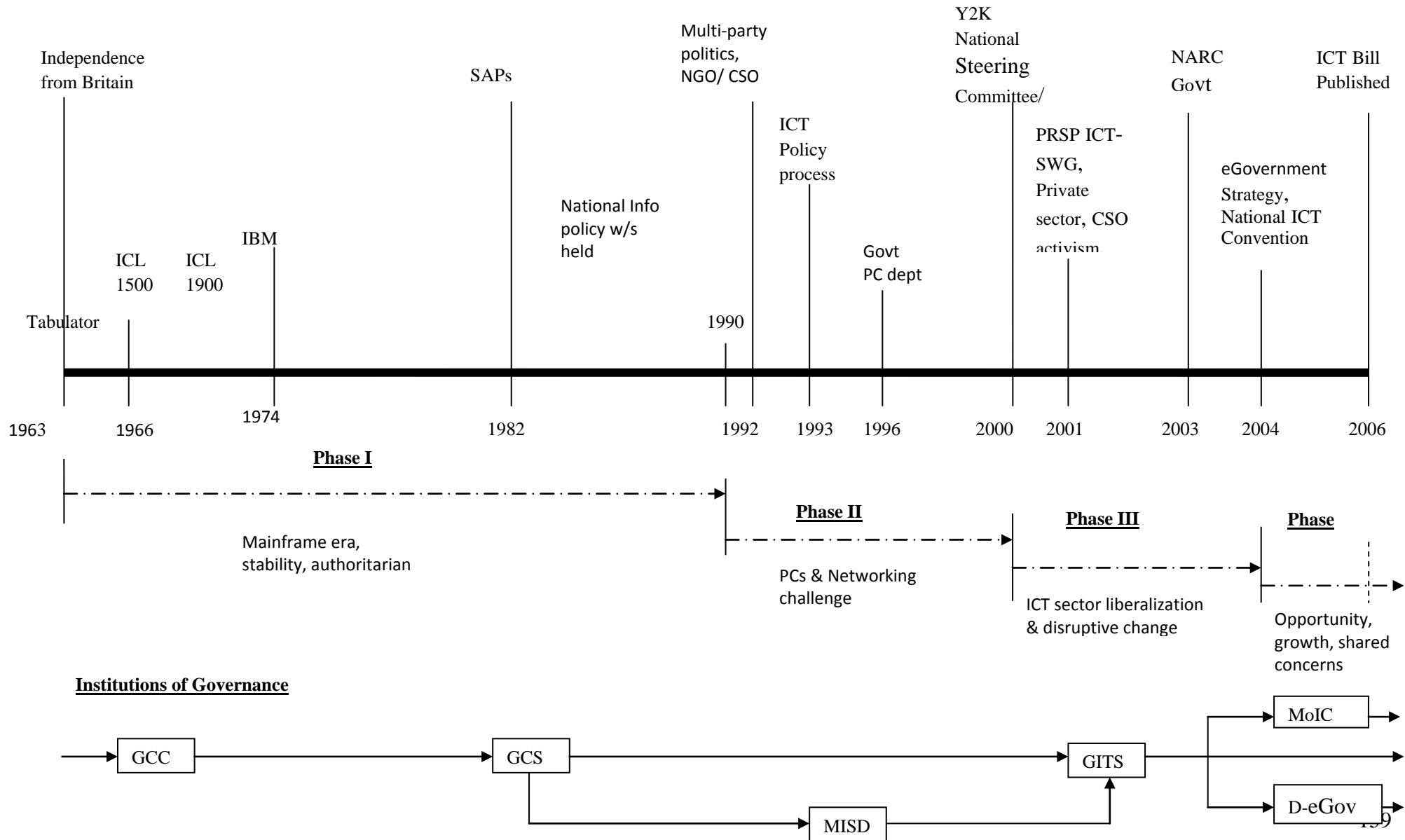
- **Phase 1: Pre-PC Mainframe era (≈ 1963 – 1990)**
Conjunction 1: Structural and Cultural Morphostasis

- **Phase 2: PCs and Regulatory Liberalization Pressure (≈ 1990 – 2000)**
Disjunction 1: Structural Morphogenesis, Cultural Morphostasis
- **Phase 3: Networked Liberalized Environment, Non-inclusive leadership (≈ 2000 – 2004)**
Conjunction 2: Structural Morphogenesis, Cultural Morphogenesis
- **Phase 4: Networked Liberalized Environment, Inclusive leadership (≈ 2004 – 2006)**
Conjunction 2: Structural Morphogenesis, Cultural Morphogenesis

Table 8-1 Situation logics and outcomes for different phases

Level	Phase 1	Phase 2	Phase 3	Phase 4
SEPs	Necessary complementarity (Protection)	Necessary contradiction (Correction)	Contingent contradiction (Elimination)	Contingent complementarity (Opportunism)
S.S.	Integration	Compromise	Competition	Differentiation
S-I.	Solidarity	Containment	Polarization	Diversification
CEPs	Necessary complementarity (Protection)	Necessary contradiction (Correction)	Contingent contradiction (Elimination)	Contingent complementarity (Opportunism)
C.S.	Systematization	Syncretism	Pluralism	Specialization
S-C.	Reproduction	Unification	Cleavage	Sectionalism
CS - Cultural system SS - Structural system		S-C - Socio-cultural interaction S-I - Social interaction		

Figure 8-1 Kenya Public ICT: Chronology of key events



8.2.2 STEPS 2 TO 4: MORPHOGENETIC CYCLES

Critical realism aims at explaining observed events with possible real mechanisms rather than prediction in positivist research or understanding in interpretive works (Bhaskar, 1998). Table 8-1 summarizes prevailing situation logics that conditioned agent interaction in each phase. These comprise the set of generative mechanisms that were found to best explain emergent change during each phase.

The analytical narrative presented next (Sections 8.3 - 8.6) integrates findings from **Part 1 Case Study** of actual historical events and **Part 2 Q-methodology** on the structure E-Governance and ICT discourse. It is framed in M/M Approach terminology. In each phase we evaluate **Steps 2 to 4** of the four steps specified above. Quotations are drawn from coded NVIVO source documents. Each reference includes the respondent's code, node name, and reference number. For statements based on interviews but not quoted, or for quotations made directly from the transcript rather than coded extracts, respondent transcript code IDs are shown in footnotes.

In general the structural system was found to correspond to institutional ICT systems that more heavily involve material resources, while the cultural system corresponded to the ICT policy process that is closer to ideas. Both the ICT policy process and ICT systems development are closely intertwined through agents and were analyzed concurrently to present as complete a picture as possible. Structural and cultural conditioning (first-order emergent properties – FEPs) are discussed together for each phase. It is followed by separate discussions for social and socio-cultural interactions, and outcomes for the structural and cultural system elaboration (second-order emergent properties). I conclude the discussion for each phase with the morphogenesis of agency. The outcome is an explanatory account of emergent social change for Kenya's public ICT systems and governance.

8.3 PHASE 1: PRE-PC MAINFRAME ERA (\approx 1963 – 1990)

Conjunction 1: Structural and Cultural Morphostasis

Situation logic analysis		Systemic integration	
		Structural	Cultural
		High	High
Social Integration	High	Necessary complementarity (protection)	Necessary complementarity (protection)
Outcomes		Morphostasis	Morphostasis
Overall outcome		Social system stability	

Phase I corresponds to the rare case of a conjunction in structural and cultural morphostasis Archer terms the *Myth of Cultural Integration* (Archer, 1995:236).

There is one dominant structural agent (ruling clique) and one dominant cultural agent (cultural elite that combined African traditionalism and bourgeois values). Structural and cultural conditioning and social and socio-cultural interactions are morphostatic cycles for overall social system stability.

8.3.1 STRUCTURAL AND CULTURAL CONDITIONING (FEPs)

Political economy: Kenya got its independence from Britain in 1963. There was no ICT as we know it today except as a nascent data processing function in the Ministry of Finance. The macro-economic policy environment was dominated by developmentalism and five-year development plans then popular for central planning. The newly independent government acquired intact a colonial civil service whose face was gradually transformed through an ‘Africanization’ programme. Fanon’s prescient analysis of neocolonialism in “The Pitfalls of National Consciousness” in *The Wretched of the Earth* (Fanon, 1967) was largely vindicated in Kenya; the ruling clique quickly dispensed with pretensions to socialist leanings useful during the struggle for independence and coined a new ambiguous doctrine of ‘African

Socialism'. According to Leys (1975) "The historic function of Sessional Paper No. 10 of 1965 on African Socialism had been to formulate a 'developmental' ideology adapted to 'comprador' interests". Ngugi (2007) argues that it served to assure continuity for neocolonial capitalism and modernity while paying lip service to the rich cultural heritage of traditional values and systems of governance. These were demonized as 'backward' and reduced to a few symbolisms like the flag; only in law were some traditional systems accommodated substantively as customary law.

The separation was decisive. Kenya's elite chose capitalist bourgeois values over socialism or tradition. Racialized social class distinctions continued while elite Africans acquired 'honorary whiteness' and sought to adopt British mannerisms and tastes. This was underlined at a famous meeting with remaining 'white' settlers in 1963 at which the first president extended them an olive branch, speaking eloquently of the need for African businessmen to work with and even learn from them. Knauss (1971) quotes the former leader of an extreme right wing pre-independence settler party who remained in Kenya:

'We were frightened,' concluded the former United Party leader, quoted above. 'Land was the big factor and we thought *Uhuru* would mean masses of Africans squatting on our farms . . . But when "Jomo" didn't realise our worst fears, we almost fell over ourselves with relief. He told us we must forget the past and build Kenya together. We were sceptical at first; but gradually it became music to our ears. The bad man became our father figure, almost overnight.'

But as he further explains, the stereotypical attitudes of 'whites' to Africans as a docile, happy go lucky creature, a salty man of earth, dominated by physical desires and with a comic view of the universe remained mostly unchanged. Racial stereotyping revolved around three themes: Africans have short memories, Africans are inscrutable and Africans are lazy and unreliable. This was possible because white farmers knew of their importance to the economy. In 1967 their large scale farms accounted for 75 percent of marketed agricultural produce, with agriculture comprising 60 percent of all export earnings (Knauss, 1971).

It amounted to a tacit agreement between the ruling elite and remaining 'white' settlers and by extension the British government, not to rock the economic boat. It was complementary, white settlers provided opportunities for co-option into capitalist

accumulation for the ruling elite, while the elite guaranteed settlers' security from the still disenfranchised masses. These issues have continued to animate radical politics and critical postcolonial literary writings over the years (Odhiambo, 1991). Dissent was swiftly suppressed through exile for some, detention without trial, house arrest, 'disappearance', and assassination for those that persisted in the search for different versions of social justice (Adar, 2000, Ajulu, 2000, Mbingu, 1991). Radical movements including the famous *Mau Mau* credited with the 'fight for independence' were politically and economically marginalized (Odhiambo, 1991).

The purported Marxist and socialist leanings of opposition movements as spokesmen for *wanainchi*²⁹ were shallow and no match for the ruling party unlike in neighboring states. Swainson (1980) describes how opposition moments in Kenya were largely petit bourgeois affairs that failed to mobilize the masses along class lines. Instead they organized along ethnic lines and were never a serious threat to the ruling class. Land redistribution from the 'white' highlands to Africans, the Africanization programme, and minimum wage increases in 1974 blunted the forces of discontent. He argues convincingly that the use of state power by the domestic bourgeoisie in early stages of accumulation is evident throughout the history of capitalism and is not unique to postcolonial states. This is a more complete and complex picture of Kenya's formative stages than is found amongst socialist analyses of African state formation.

Governance: Within the civil service, employment and upward mobility meant sharing in the lucrative arrangement of Africanization. The civil service was the centre of power and of the distribution of national resources. The public service was a continuation of the colonial administration but with African faces dominated by the President's community with token representation for other communities (Wekesa, 2002).

Westminster was the aspirational model of governance, but when the local elite's need for primitive accumulation clashed with the strictures of British public service law and norms, the law was adjusted accordingly. The *Ndegwa Commission Report* of 1971 made for changes in the code of regulations to allow civil servants to engage

²⁹ *Wanainchi* – Swahili for 'people of the land' a general term for the masses.

in private business even with the government; at once institutionalizing corruption by creating a serious conflict of interests for public servants (Swainson, 1980). Public needs tend to be subordinated to private interests. Unless these coincide, even important projects lag or are abandoned for lack sponsorship, basically “what is in it for me?” It is an attitude that still exists and was encountered amongst respondents:

The time you have been here have you seen some form of progress towards people following you? Like...when you started it was even more difficult than now?

Let me tell you. The way the government works or generally the public, I don't know you may not have been around when the poverty reduction strategy paper work started. It had a lot of money you remember the controversial 144 million. You remember? So what normally happens and actually is a culture in Kenya, which I am not really learning to like, is that there is a lot of activism whenever there is something like this. There is a cake to be shared and everybody is interested. But the moment now you do the allocation lets say for instance we have allocated so much to gender maybe to youth, but when it comes to the actual implementation, there is nothing on the ground to ensure there is actually the programmes are implemented as they were envisioned.

(EG3 Interests Ref 1)

One respondent³⁰ attributed it to the absence of a social contract and trust in public institutions as found in nations with longer histories, similar to arguments by social scientists on Kenya and most African countries (Berman and Tettey, 2001, Mutere, 2006, Ngugi, 2007). Kenya's second president (1979 – 2002) strengthened and deepened these largely pathological tendencies to the detriment of institutions of governance, massive corruption scams were a regular feature in the press.

So Phase I governance was geared towards the interests of just a few. The populace in general had no stake in the nation; their loyalties were to traditional kinship links that were more useful on a day to day basis.

Public Sector ICT systems: Public Sector ICT systems during this period were stable with little innovation except for periodic upgrades for mainframe computer systems.

³⁰PS1

Tabulators were first introduced into the treasury before 1963 for government accounts to bill newly re-settled African farmers on land sub-divided from departing white settlers. In 1966 the first mainframe computer ICL 1500 Series was acquired, later replaced by an ICL 1990 Series, and an IBM 370 in 1974. Therefore until the early 1990s central government computing was wholly mainframe based for heavy number crunching tasks like payrolls, financial accounts, national examinations, school equipment, and national statistics.

Social structures associated with ICT would be the bureaucratic public service set up and mainframe computer and software management systems. A data processing unit called Government Computer Centre (GCC) (later renamed Government Computer Services (GCS)) was established to manage the computing function. ICT Policy (with hindsight as it was not called that) was set out in Treasury Circulars Nos. 3, 11 & 13 of 1973, 1977 and 1978. This indicates the high degree of integration between the ideational and material realms arising from existing *necessary complementarities* for the structural and cultural systems, both had the same situation logic of *protection*. The relationship was reinforced by reliance on, and conformity to rules and procedures that still prevails:

.... from your experience you don't think that is so, that people would even frustrate the system?

There what I would say, I think there have been too much of socialization to some of these – the procedures. Most of the people you are likely to meet, you know, “The old ways has always worked, I’ve always done it like this,” those are some of the things which I would say actually impact quite negatively on our decision making process.

(EG3 Regulations Ref 5)

User requirements were subordinated to whatever the computer department dictated. Priority was given to politically sensitive applications such as payrolls for the civil service and crucially, the military. Computing services were thus logically housed within the Ministry of Finance. At times it was combined with that for planning that dealt with statistics, but they are physically located in one building so it never really

mattered to the IT unit. These services are still privileged as a long serving senior civil servant in government ICT explained:

So in a way, since your work in finance tends to be quite critical...?

Very critical

You get backing from the government?

Very, very much, support yenyewe (itself in Swahili) is very alright.

...other ministries don't have that support because their projects are not that....?

Maybe the reason could be that those projects are not critical to the government

(MF1-Change Drivers Ref 1)

Other respondents expressed similar sentiments on prioritization of ICT applications according to political sensitivity.³¹ Computing and support services were physically separate from users; as long as required outputs were received the computer department could remain in the background. Programmers and developers became very specialized for that environment such that adapting to a PC environment later was a real challenge.

GCS is the original department with its heritage of IBM main frames and its heritage of civil service bureaucracy and conservatism and being risk averse and change averse, and it completely missed the boat on the PC revolution.

(PS1 Culture – Institutional Ref 2)

We shall now evaluate agent interactions under the conditioning effects of this initial structural and cultural configuration. We have a centralized administration that is also the centre for national resources distribution. The cultural elite maintained close links with Britain and the US through education, consumption and lifestyle patterns. Beneath it all was a traditional African upbringing to result in culturally ambivalent (or confused) elites with dual identities, closely associated with power and wealth.

³¹MF2, EG1, EG3

8.3.2 SOCIAL INTERACTION AND SOCIAL SYSTEM: INTEGRATION AND SOLIDARITY

Under the conditioning effects of a powerful politicized civil service, loyalty was valued above professional competence. The single party political system gave the ruling clique monopoly of power and patronage. Its *bargaining power* and *negotiating strength* on the domestic scene bordered on coercion. Dissent received swift sanction from structural and cultural elites that dominated top positions in and out of government. ICT activities as social subsystems had to find their place within defined limits of interaction. The ruling elite's power was manifested as fear and even terror at a personal level in individual civil servants. Careers could be cut short at a whim facts and the law notwithstanding, if a powerful individual or group felt that a civil servant or government department was undermining their objectives.

Concerning a certain ICT project that was later deemed corrupt:

[It was] Like another?

Conduit, a way to get money through the government.

Through the government?

Of course, some of the things they were doing, they were not genuine. And we kept on saying this is wrong, this is wrong, but we could not be heard.

But you said he had some supporters?

Yes he had a lot of supporters from the top, and when you know when somebody is supported from the top, it is difficult to fight him.

(MF1 – Corruption Ref 2)

Jobs in the civil service are coveted for the security they confer and were distributed to close friends and family based on kinship links, part of what Mbembé (2001) calls transfers. A monolithic government with well laid out procedures (archaic, colonial) blended with a stable traditional system of social values and kinship links leaving little room for alternatives in interaction. High *integration* of social systems comprising the predictable bureaucratic computing environment was reinforced by *solidarity* at the level of social interactions thus assuring stability. Emphasis was on adherence to 'rules of the game', as indicated by a long serving senior ICT officer:

What guides your work right now, what policy, what strategies?

There are many, you know in the government there are codes of regulations, first of all you have to adhere to the rules of the game and then like this area which is a professional area you have to go to the ethics of the profession otherwise you maybe going outside that, it's not good.

(MF1- Emergent Change Ref 2)

Consequently, within the ICT unit (as in other parts of government) career advancement would depend not on professional competence but rather on fulfilling expected social roles with deference to the ruling clique. It was a recipe for apparent external stability but with gradual professional decay. Top IT managers in government became generic administrators, ultimately leading to an absence of visionary technical leadership. Berman and Tetley (2001) observed it as the preference for generalist administrators rather than professionalism in African bureaucracies. Given the structural and cultural configuration, little else could logically be expected. Subsequent developments in the computer industry meant that *technical leadership* gained in importance to meet the challenge of technology change.

8.3.3 SOCIO-CULTURAL INTERACTION AND CULTURAL SYSTEM: REPRODUCTION AND SYSTEMATIZATION

Structural stability was buttressed by the absence of ideational alternatives in the socio-political sphere, or to the standardized requirements of mainframe computing. In the absence of serious contention in the cultural domain ICT policy was simply a statement of roles set out in periodic Treasury Circulars. Socio-cultural interactions were therefore *reproduced* by limiting the entry of new ideas leading to a *systematisation* of the cultural system.

The dominant cultural mindset was the traditional 'old school' civil service concerned with compliance to regulations and socio-cultural norms. This guaranteed efficient delivery of politically critical outputs (salaries, etc) and kept socio-cultural interactions within accepted social and cultural boundaries as signaled by the ruling elite on the pain of harsh sanctions. Ideational innovation was neither encouraged nor

called for under the circumstances. The recently published policy (in 2006) and strategy documents (in 2004) were developed without significantly influencing this attitude in some older civil servants though senior in ICT:

What I was wondering, is whether, you know you as a person who is experienced, now you work with the government, have you used any of these documents - strategy and policy?

No.

Not much, okay, but this E-Government strategy is there now, isn't it?

I know the e-government strategy is there, I even had a copy, but I have not read it, but I think it is with the Ministry of Lands.

(MF1 Planned change Ref 1)

ICT officers employed in more recent periods do use the E-Government strategy document.³²

At the international level steady relations were maintained with the west in general. Senior ICT personnel were sent to the US or UK for training to run the mainframe systems purchased with 'aid' from the same countries. This changed from the mid 1980s with the advent of the PC and increasing user requirements from new budgetary processes and changes in the tax regime. But the mindset at the top hardly changed. In recognition of this, gradual non-disruptive change is preferred within the leadership of the E-Government unit even today. Senior Officer in E-Government unit concerning culture and attitude change in 2006:

What about in the government?

In the government, we still need...especially at the senior, the administrators, it's the senior people, we must appreciate they are advanced in age, they don't trust all these things from the younger generation they would rather go slow, they are overly cautious about it.

(EG1 - Barriers to Change Reference 6)

³² MH1, EG1, EG3

Evidently the ideological strain identified as Conservative pro-government from the Q-methodology study is an important factor to ICT change, more so given that it dominates amongst senior officers that would authorize such initiatives.

8.3.4 MORPHOSTASIS OF AGENCY IN PHASE 1

Under the stultifying rigidity of structural and cultural morphostasis, primary agents had to find their space within a social system they had no power to change. Harsh sanctions for deviance and the absence of ideational alternatives meant that all persons had to find their means of self-cultivation within the system, a recipe for the *morphostasis of agency*. In other words no new viable groups and associations were allowed or even deemed necessary. The conditioning effect of systemic and cultural rigidity was aptly narrated as equivalent to a ‘Flea Circus’ by one respondent.³³ New state employees were expected to slot into the system and get into step, destroying any shred of initiative. One young person narrated how on joining the civil service he realized that he had joined “a morgue” and took off for dear life.³⁴ The rigid mainframe systems culture of predictability ensured everyone kept their place and any new ideas to themselves in the public sector ICT community. It took the PC revolution to jolt them into action. The large crop of ‘old school’ civil servants occupying senior positions continues to act as a drag on change initiatives even today.

8.3.5 PHASE 1 OUTCOME: SOCIAL SYSTEM STABILITY

Overall structural and cultural system stability resulted from the complementary relationship between high social and system integration. In Phase II new forces emerged that unsettled the apparent stability of the social system.

³³PS1: To make a Flea Circus, put fleas one at a time in a box and cover it before opening it to introducing the next. At first the fleas will jump and hit the top. Soon they will learn not to jump too high. In the end you may open the top cover and enjoy a ‘flea circus.’

³⁴ Ibid.

8.4 PHASE II: PCs AND REGULATORY LIBERALIZATION PRESSURES (\approx 1990 – 2000)

Disjunction 1: Structural Morphogenesis and Cultural Morphostasis

Situation logic analysis		Systemic integration	
		Structural	Cultural
		Low	Low
Social Integration	High	Correction	Correction
Outcomes		Morphogenesis	Morphostasis
Overall outcome		Cultural elaboration	

Some structural morphogenesis appears in this phase with the introduction of the PC resulting in a re-organization and expansion of the central computing department. We also see the strong entrance of global capital (WB/IMF) into the picture to differentiate structural corporate agents by weakening the ruling clique's power and control over state resources. The cultural elite maintained its dominance through the control of public information and the media. It is argued that these changes amounted only to *corrections* at the level of structure (SEPs). Although the cultural system was static there was strong pressure for change from outside, new corporate agents in the cultural realm begun to form outside government. We see resistance strategies being manifested with some *corrections* at the level of culture (CEPs). Overall the most important changes occurred in the cultural realm as cultural elaboration evidenced in the morphogenesis of agency.

8.4.1 STRUCTURAL AND CULTURAL CONDITIONING (FEPs)

Politico-economic pressures, governing elite vs global capital: After the collapse of communism western energy was directed towards the spread of democratic systems of governance and the establishment of liberal capitalist economic systems. Starting in the late 1980s, neoliberal ideas centered on civil service reforms through SAPs and

multiparty democracy in governance galvanized various groupings to take on the coercive political system. They got support from western governments and international human rights groups. Political elites were able to maintain their position though political suppression and by exploiting ethnic differences to divide the opposition. But by the late 1990s the country was broke and economically on its knees, partly as result of grand corruption and partly due to the adverse impacts of SAPs. Kenya was the very first country in the world to undertake SAPs over the 1980s and 1990s. This undermined the ruling clique's power base and increased discontent in the populace. WB and IMF were thus able to extract concessions and commitments for change in return for financing. Some of the results for Kenya were:

- a) In 1992 Section 2(a) of the constitution was repealed to allow multi-party democracy after extremes in political repression over the 1980s following an attempted military coup in 1982. Elections became meaningful for the majority and heightened political activism as it meant that the presidency itself was at stake. Subsequent voting patterns in the 1992 and 1997 elections revealed the fragility of Kenya as a unified nation-state; they were almost entirely along ethnic lines. Any government initiatives would also be subject more than ever to the five-year electoral calendar.
- b) Value Added Tax (VAT) was introduced to enhance revenue collection which necessitated changes in public financial information management systems.
- c) Greater scrutiny of public financial management by the IMF that called for better reporting systems.
- d) Relaxation of exchange controls that created opportunities for massive theft of public funds to private individuals through sophisticated financial manipulation, in particular the infamous Goldenberg financial scam³⁵.

State owned monopolies provided a substantive resource base for those in power but were unacceptable to the ascendant neoliberal economic logic. They were deemed inefficient and a huge drain on state resources. The Kenya Posts and Telecommunications Ltd (KP&TC) was a prime target for reform owing to its

³⁵ See Mars Group Kenya at <http://www.marsgroupkenya.org/pages/stories/Goldenberg/> for a full account including associated deals. It was estimated to have cost Kenya US\$ 600 million in less than three years.

overriding influence. It owned and operated all postal and telephone services, and also regulated telecommunication and broadcasting services. Without a published national policy on telecommunications or broadcasting ad hoc political decisions prevailed. Media control was crucial to monopolize or severely limit access by opposition parties to rural areas where the majority (in electoral votes) resided. Subservient state owned radio and TV stations were the only national mass media. Controlling them was important to managing social and socio-cultural interaction geared towards sustaining the ruling clique in power.

The last years of this period (1999) saw the appointment of the ‘dream team’ that enabled the World Bank to effectively run the Kenya government by proxy. It is discussed in Phase III.

Technology change: Meanwhile the PC had become an important business tool over the 1980s. It started appearing on an ad hoc basis in government ministries through ‘donor’ funded projects beginning with the Ministry of Agriculture (MoA) and Ministry of Planning (MoP), and for individual officers with some clout. After some early successes, PCs were employed to process the national budget in an attempt to cover up for serious ICT capacity problems. Other applications soon followed across the government with external support to fulfill unmet user needs, often in crisis mode.³⁶ Ideally GCS ought to have spearheaded such introduction but it was too set in its mainframe ways to seize the initiative. Politically the then president and the ruling elite drawn largely from his ethnic community had monopolized power and opportunities for primitive accumulation in government, any sizeable project or innovation would attract their attention. Existing ad hoc projects were externally funded and led through ‘technical assistance’, a situation that was not sustainable (Oyomno, 1996).

Under these circumstances, unless the head of GCS was politically ‘well connected’ he would have serious difficulties pulling off a major capital expenditure. Greater financial scrutiny, reporting requirements and VAT administration required new systems that could not be rolled out fast enough. Structurally GCS had little

³⁶ MF2

bargaining power due to lack of PC skills and was wedded to a rigid mainframe systems culture. It lacked a politically savvy head to safely champion the idea, further lowering its negotiating strength. Overall the situation logic called for *correction* from *necessary contradictions* in the structural system. Large-scale change was neither possible nor necessary, but some change was required to meet new requirements. It gave rationale for the introduction of the unexploited PC with attendant benefits for fast movers.

Social and socio-cultural interactions were thus conditioned by structural influences from IMF/WB SAP related requirements and technology change.

8.4.2 SOCIAL INTERACTION: CONTAINMENT

In the absence of other organized corporate agents in the ICT field GCS remained the most important player in government. The private sector was slowly adapting to and building capacity in PCs and networking. The Computer Society of Kenya (CSK) was the main professional association, though with a ‘techie’³⁷ outlook, social interaction was thus limited in this sense. Within the government a new crop of young, ambitious networking oriented IT professionals was ready to exploit opportunities presented by the PC and the Internet and would be useful allies to a change agent. Dominance by the ruling elite and a severely cowed civil service limited opportunities for efficacious and safe interaction. It took an outside consultant with ‘connections’ to pull it off.

This was in the mid to late 1990s when PCs were formally introduced to the central computing unit as a department. Outside consultants³⁸ teamed up with the younger IT personnel to start the Micro-Computer Services Department (MISD) with support from US Agency for International Development (USAID) through the Harvard Institute for International Development.

They brought in tame operators under them, Kenyans. They had the ears of PSs and Finance ministers and they run riot, but I repeat doing wonderful work in IT and of course running rings around the mediocre bureaucrats in

³⁷ PS1

³⁸ The principal consultant is on the run from Kenya’s judiciary over allegations of high-level corruption.

GCS. But they overreached themselves, and a lot of things happened that finally resulted in GCS being renamed GITS and absorbing MISD.

(PS1)

Understandably respondents appeared aware but were not willing to openly discuss details of interactions that led to the creation of a PC department except giving strong hints of impropriety. At their request, these portions of the interview were excluded; in certain cases I had to switch off the recording device.

Social interactions in response to PCs and networking challenge were limited to what the structural elite following a *containment* strategy could accept. In this case they elected to use an outside consultant to ensure that they could control the potentially disruptive technology innovation even if they did not fully understand it.

8.4.3 STRUCTURAL ELABORATION: COMPROMISE

ICT Systems: MISD duplicated some tasks of GCS which caused friction between them over the next few years until they were merged in the year 2000 to form GITS. The younger more dynamic group staffing MISD enjoyed some autonomy from the ‘old guard’ who were technically their bosses but lacked PC and networking skills. It was also led from the outside by a consultant with high-level political connections. Hence the possession of PC and networking skill by the MISD gave it some *bargaining power* that was *strengthened in negotiation* by political connections through the consultant. This advantage was eroded over time as network servers became more powerful blurring the line between the two task environments. Secondly it was easier for GCS to acquire PC skills than the other way round and it retained leadership when they merged. MISD resisted the merger because their leaders would have to report to those from GCS that were hierarchically senior. This was probably made easier by co-operative efforts to deal with the Millennium Bug, but it still took a directive from the PS to effect the merger.

It was actually the dream team, you see such a drastic move could not be implemented from within because of course vested interests you know I am a director, I am a head of department when it merged you know is like companies some would get swallowed. So it required a decision from outside

Treasury for it to happen, fortunately there were the dreamers that time and therefore the decision was done without creating so much acrimony within. Otherwise if the two departments were left in fact they had tried to merge for all these years time but they couldn't because of interests.

(EG3 Interests Ref 2)

Then there was that problem, so the two departments became even much closer that time, because from the ministry we could get people and from these we could get people, formed one team, and then they moved out together. So by the time they were coming back now they were one team.

So they formed a team to fight the bug but they ended up becoming friends?

No, No, even the PS here Dr. Kinyua, he is the one who decided that it should be formed. He had sent signals.

(MF1 Change Process Ref 1)

Although the structural impacts of the PC were substantial the MISD 'upstart' could not overcome the hierarchical civil service establishment. Promotion within the ranks confers security and structural bargaining power irrespective of actual performance or ability. Secondly, gains occasioned by technical advantage are not sustainable where competing groups can also acquire such skills.

ICT Policy and ICT governance: Under pressure from WB/IMF keen on breaking up the KP&TC monopoly, telecommunications and postal privatization guidelines were published in 1997, and the Kenya Communication Act (KCA) 1998 and Kenya Postal Act (1998) created. The government did it without external consultation. Apparently this change was triggered by unrelated political events in July 1999, a few days before a crucial WB/IMF meeting for loan negotiations. The Minister for Finance had refused to make certain payments allegedly related to corrupt activities involving the KP&TC, and resigned after transfer by the President to what he felt was a less prestigious post. Unexpectedly the KP&TC Board was swiftly sacked and the corporation split into three entities: Telkom Kenya Ltd (TKL) for telephone and data services, Postal Corporation of Kenya (PCK) for postal services, and the Communications Commission of Kenya (CCK) as a regulatory agency. The National Communications Secretariat (NCS) was created in the Ministry of Information,

Transport and Communications (MoITC) as legal advisor on ICT to the government. TKL and PCK were granted monopolies in the face of outside protests. Again it all happened without external consultation.

These were *compromises* to accommodate demands for reform from WB/IMF and critics without fundamentally altering ICT governance. GCS merger with MISD was also a compromise to accommodate diverse requirements within a revamped GCS now renamed GITS within the same bureaucratic management system.

8.4.4 SOCIO-CULTURAL INTERACTION: UNIFICATION

Socio-cultural interaction was enriched by new ideas on governance from global pressures for greater freedoms. IMF/WB's strong structural presence weakened the cultural hegemony of conservatism which allowed alternative ideas to begin taking root. Socio-cultural interactions during this period are attempts at *unifying* disparate ideas together to provide a way forward to meet immediate needs or crises.

Collaborative efforts were short-term or forced by special circumstances. They were not targeted at fundamental questions; instead they papered over underlying systemic contradictions. There was an air of naiveté about the difficulties of integrating diverse viewpoints that manifest as divisions in Phase III.

ICT Policy - Alternative voices: The Kenya Library Association and the National Council for Science and Technology led the first traceable efforts at formulating an ICT policy in the 1980s. A second more serious one was between 1993 and 1997 by many stakeholders led by United Nations Educational, Scientific and Cultural Organization (UNESCO) under the Ministry of Research, Technology and Technical Training (MRTTT). Inter-ministerial turf wars amongst Ministry of Finance, Ministry of Transport and Telecommunications, and MRTTT largely frustrated this effort. Further, after the 1997 elections, ministries and departments were re-organized and the proposals came to nothing.

Beginnings of partnerships with government: MISD once established became a promotive interest group for new ideas to break the hegemony of GCS to further its own interests. The Millennium Bug team (National Y2K Task Force) provided an

unusual opportunity for co-operation between departments and for change-minded professionals to interact with other stakeholders (private sector, academia, CSOs) thus increasing diversity in the ideational pool. Participants were at first wary of the crisis-forced collaboration but powerful synergistic outcomes energized all and gave them a sense of what more of the same could achieve. It was a watershed event, a mental and emotional shift towards effecting change through multi-stakeholder collaboration.

Would you, where would you peg that change in people's mindset time-wise?

I think that national Y2K committee was key and it was immediately followed up by PRSP and these sector working-groups, where it was the donors who said you've got to involve the private sector.

(PS1 Key Events Ref 1)

We may understand donors' insistence on broad-based participation because PRSP was premised upon the principles of the World Bank's *Comprehensive Development Framework* that is underpinned by the concept of social capital. These partnerships were short-lived because the underlying structural configuration was still contradictory, pitting the ruling clique against global capital and the growing body of corporate agents from the private sector and civil society.

8.4.5 CULTURAL ELABORATION: SYNCRETISM

We can only infer from the events described above that there must have been interaction within certain circles in government to respond to WB/IMF requirements in a manner most beneficial to the ruling clique's interests. No real cultural shift took place except a form of *syncretism* to buy time in the face of mounting ideational pressures from different interest groups that could no longer be ignored.

Though governing elites saw the need for change, they did so only under great pressure and only on their own terms because of their strong bargaining position. They were not averse to stealing the thunder from opposing organized groups by taking pre-emptive steps. For example, the NCS was formed before a Cabinet Memo with a similar proposal by the consultative National Y2K Task Force, recommending establishment of a National Council for ICT (NCICT), was discussed or adopted. The

NCS turned out to be a serious stumbling block to groups external to government seeking reforms over the next few years. Its formation may be perceived as a strategy to counter alternative sources of ideas to maintain legitimacy by governing elites through the monopoly of ideas.

Such insularity is from Phase I structural and cultural conditioning when government set the tune and a docile populace followed. An official government document put clearly: "...Regressing dramatically from the earlier version, it was spelt out clearly in the document that Government exists to determine policy while 'operators' (as the private sector was labelled), were there to operate" (Eldon, 2005). Giving in to liberalization pressure piecemeal delayed the ultimate showdown. Meanwhile cosmopolitan and liberally inclined corporate agents absorbed the new ideas and were increasing in capability over time via the morphogenesis of agency.

8.4.6 MORPHOGENESIS OF AGENCY IN PHASE 2

For years the cultural system within government remained largely unchanged for it was tied to the hierarchical seniority structure and served to legitimate the redistribution of national resources by the ruling clique (Fig 8-2). Skilful manipulation of the political environment by the ruling clique through control of the media, and a fragmented political opposition, allowed such insularity to continue in a changing environment. Outside however there was increasing agitation for change, ultimately in structural material terms but starting at the level of discourse and culture. Nascent private sector groups and CSOs working closely with government officers on ad hoc projects (e.g. Y2K) created crosscutting networks subscribing to alternative ideas. The structural impacts of PCs, networking, and the Millennium Bug conditioned agents into new modes of social and socio-cultural interaction. It led to a dilution of the dominant ideology of conservatism as the genesis of a changed mindset within and outside government. We thus see the emergence of a crop of change-minded *primary agents* interested in the rational exploitation of ICTs, and intransigence by the government using official channels to counter them. But they were not yet fully organized as *corporate agents* to effect structural and cultural modeling.

These initiatives had their apogee with the curious but short lived World Bank instigated arrangement of the ‘dream team’³⁹ when Kenya literally had two centers of government, one in Nairobi, the other in Washington D.C. from July 1999 to March 2001. Despite its short tenure, personnel recruited then and their ideas on governance including ICT continue to have major impacts.

8.4.7 PHASE II OUTCOME: CULTURAL ELABORATION

Cultural elaboration was the most significant outcome because agents acquired new ideas and modes of interaction that were to have far reaching impacts towards real change. New organized corporate agents began forming outside government around these new ideas from the many primary agents desirous of change.

³⁹ Discussed in Phase III Section 8.5.1

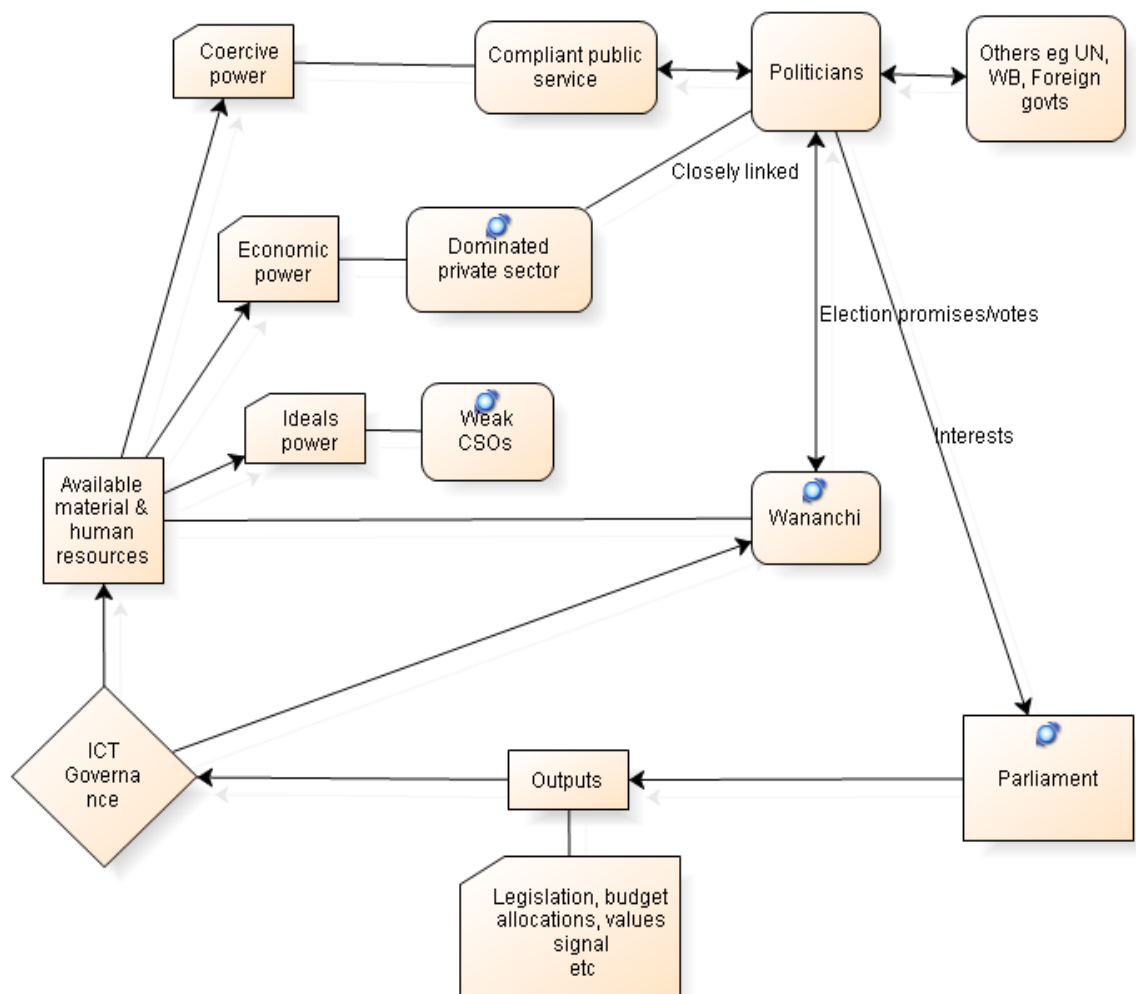


Figure 8-2 NVIVO Model Phase I & II Interactions

Summary of Phase I & II agent interactions: Politicians are the centre of all activity. The private sector is closely linked to politicians in a complementary relationship that links African traditionalism to western bourgeois values for capital accumulation. Little could change even towards the end of Phase II when it became clear that the material and ideational monopoly was untenable. By the end of this period, the social system had deep structural and cultural fissures that called for bold action. None amongst new corporate agents was ready or capable except IFIs. The decision they took only exacerbated the situation as explained in Phase III next.

8.5 PHASE 3: NETWORKED LIBERALIZED ENVIRONMENT, NON-INCLUSIVE LEADERSHIP (\approx 2000 – 2004)

Conjunction 2: Structural and Cultural Morphogenesis

Situation logic analysis		Systemic integration	
		Structural	Cultural
		Low	Low
Social Integration	Low	Contingent contradiction (elimination)	Contingent contradiction (elimination)
Outcomes		Morphogenesis	Morphogenesis
Overall outcome		Structural and cultural elaboration	

This phase is particularly difficult to evaluate for its sheer eventfulness. It encompasses the end of one regime in government and the beginning of another. Literally everything was up for grabs from the situation logic of *elimination*. Real change was evident in culture, and in individuals towards forging common goals while losers were left by the wayside. Little actually changed towards improved ICT services, instead great institutional competition was observed through competing initiatives that served to weed out structural dysfunctions. Telecommunications liberalization ushered in the mobile phone revolution whetting the public's appetite for further reforms. CSOs and development research agencies as ideational interest groups organized to provide new legitimating frameworks for private sector and government material interest groups, to result in structural and cultural elaboration.

8.5.1 STRUCTURAL AND CULTURAL CONDITIONING (FEPS)

Starting in 1992 when Section 2(A) of the Kenyan Constitution was repealed the political scene became extremely active. Newly formed political parties were broadly based along ethnic and regional affiliation with the one aim of capturing the powerful presidency. Intellectual elites, lacking ‘grassroots’ support, had to work with older political hands with ethnic/regional constituencies where political power resided as the number of voters. They received material and ideological support from ‘donor’ countries to bring about political change. Given their weak internal constitution and ethnic/regional fractures, these parties were no match for the ruling party with its national network and access to state resources. Although the ruling clique was internationally isolated there was little effective opposition from within.

In 1999 the World Bank had Dr. Richard Leakey appointed as Kenya’s Head of Public Service and Secretary to the Cabinet with a brief to reform the public sector and rid it of corruption. Dr. Leakey was by then a thorn in the flesh for the government as the Secretary General of an elitist urban opposition party, and a worldwide audience from his fame as a noted paleontologist, archaeologist and wildlife conservationist. He in turn recruited a team of Kenyan technocrats from the private sector, academia, and international development agencies to head the key ministries of finance, information, transport and communications among others as permanent secretaries or other senior positions. This was the ‘dream team’. The World Bank financed their international-level salaries through a UNDP project as technical assistance, possibly to circumvent Kenya’s civil service regulations on pay. Using Kenyan nationals allowed the bank to claim that the whole arrangement was “home-grown and locally implemented” and not another “Washington diktat” (Afr-Con, 2000).

The appointments were met with mixed feelings within the country because though desirable they were foisted on Kenyans. The team’s international-level pay was also a source of consternation within the civil service. The World Bank Country Director had to constantly defend the arrangement before the now better organized religious groups and human rights CSOs that desired greater democracy and personal liberty

(Afr-Con, 2000). The latter would represent the critical Afro-centric ideological stance from the Q-methodology study. A continuous cat and mouse game between the team and the isolated ruling clique marked the team's tenure (Afr-Con, 2001). Nevertheless it was within this short interlude that fundamental public sector reforms begun and fresh ideas with long-term impact including E-Government were introduced.

Yes, so the dream team's effect was substantive although it was there for only a short time?

Yes, it's the one which built up the maelstrom, because they came with ideas, and these are the ideas being implemented.

(MH1)

Notable ones were the medium term expenditure framework (MTEF) in financial management that better tied ministerial expenditures to needs, and the idea of E-Government. Although they were good ideas, they came through a technocratic process detached from the social context which compromised their acceptability and impact.

8.5.2 SOCIAL INTERACTION: POLARIZATION

The 'dream team' was in office for about two years trying to implement the WB script of efficiency and privatization. With a two-tier government (a small elite 'dream team' at the top and ordinary civil servants still doing the bulk of the work at the bottom) and hostile leadership, little actually changed on the ground. In the early part of this period the positive impacts of Y2K collaboration peaked fuelling the private sector's desire for involvement in public policymaking. The challenge to established patterns of work and thinking through social interaction boosted those within the public service that were change minded.

Government, private sector and CSOs flirtation: Using the World Bank Comprehensive Development Framework (CDF) approach to development planning the government prepared the Poverty Reduction Strategy Paper (PRSP) through a consultative process. Each ministry formed a Sector Working Group (SWG) that had

to include the private sector, civil society and other interest groups. It is through the PRSP ICT-SWG that real collaboration apparently begun. Participation was enthusiastic; for once the private sector could sit with government and expect to be heard. All the more remarkable given the starting point of mutual antipathy:

And generally there was this view that private sector people really, weren't we all pretty much after all like [Name]⁴⁰ and you know other wheeler-dealers just manoeuvring excess profits. So it the justification, the legitimization of such dialogue, why dialogue with such people? It's been a very hard struggle of course because there are not many private sector people who are interested in dialoguing with government because we too have disrespect for them.

Yes, the private sector has disrespect for government?

Yes there is useless bunch of bureaucrats, extortionists, corrupt people...

You think that is a widely held view in the private sector?

I didn't think, I know it is!

(PS1 Private Sector Ref 3)

And with civil society:

... while government had become very suspicious with the private sector saying that all they cared about was money, they were suspicious of civil society; Moi did not like civil society at all.

(CS1 Private Sector Ref 2)

Predictably the government-private sector collaboration euphoria was short lived. A Cabinet Sector Policy paper and draft Broadcasting Bill to address a chaotic broadcasting sector were some of the team's first acts, which led to the creation of the National Communications Secretariat (NCS) and the Communications Commission of Kenya (CCK). Both documents received a lukewarm reception from the Parliamentary Committee on Broadcasting. Meetings and stakeholder workshops were held over two years but there were too many vested interests for meaningful progress. Finally the initiative was overtaken by events when the dream team was

⁴⁰ A well known Kenyan businessman allegedly associated with power and corrupt deals during the Moi regime.

sacked in March 2001 and the ministry (MoITC) split into two. The government and WB were still at a standoff. On the very day the PRSP ICT-SWG was to officially present its report to the ‘dream team’ PS, he was sacked.

Social interaction was thus *polarized* along intractable lines of vested interests buttressed by different powerbases. The conservative ruling clique and civil service looked to state machinery, while nascent private sector and some critical movements looked to global capital and ‘donors’ to exert pressure via the dream team. International financial institutions (IFIs) were not providing any support to the country, a fact that undermined the liberal and critical corporate agents’ position. Their bargaining power was contingent upon the government’s continued faith in the resumption of ‘aid’ as the reward for reform. When the ruling clique got fed up with IFIs ‘endless’ aid assessment ‘missions’, the posturing was up. They simply stopped talking to concentrate on the fight for power in national elections set for December 2002. Soon enough the country was gripped by election fever.

PRSP also went nowhere because firstly Moi and his people only saw it as a ticket in a box of donor conditionality, and secondly immediately after it was put to bed and published we entered into electioneering for the 2002 elections that were eighteen months or so away.

(PS1 Conflict Ref 1)

Waema (2005) describes the dream-team’s sacking as a “lost historic opportunity”. With the benefit of hindsight, under the structural and cultural constraints described, little else could realistically be expected. After the ‘dreamers’ dramatic entry and exit there was little real collaboration with government until the ruling party was voted out in December 2002. The promising beginning was undone by contradictions between an insular powerful clique, and WB attempts to run the government from the top by proxy, together with the IMF carrot and stick of credit and conditionality. Both generated popular resentment that contributed to uniting the populace and politicians (though still generally despised for alleged corruption) against ‘foreigners’.

New government: In December 2002 Kenyans elected a new government formed by a coalition of opposition parties to oust the autocratic ruling party after nearly four

decades in power. It is difficult to adequately capture in writing the euphoria that gripped the country when it became clear that Daniel arap Moi was no longer president. The new NARC (NAtional Rainbow Coalition) government was led by some ‘old guard’ politicians disenfranchised under Moi, and younger more idealistic political and human rights activists, many educated in top universities around the world. Hopes were high within the fledgling ICT community that some real progress could be made at long last with NARC popularly elected on pledges to eradicate corruption and revive the economy.

The fissure earlier noted in the socio-political field as an extreme in polarized social interaction still characterized Kenyan society including the ICT community. It became evident in outcomes for the structural system as explained next, and in socio-cultural interactions.

8.5.3 STRUCTURAL ELABORATION: COMPETITION

ICT Policy leadership: There was confusion over the role of GITS (MoF) in the policy process; its *de facto* leadership of the ICT sector arose from its historical association with data processing. The NCS and CCK had legal mandate but were dormant. Paradoxically, with ICT now identified as a sector for the PRSP, the other seven Sector Working Groups could ignore it’s probably more important crosscutting and enabling role.⁴¹ NCS set up an ICT Plan Working Group to help draft the National Development Plan (NDP) 2002-2008 as statutory requirement for which there was little enthusiasm. As may be expected the NCS team was weak⁴² drawn from within government, and with one private sector member who was also in the ICT-SWG. This scenario illustrates dysfunctions in the planning process whereby the PRSP process was completely de-linked from the NDP. One was to meet IFI conditions [must have PRSP]; the other was a statutory requirement. Ideally and logically there ought to have been only one process.

Powerplay was evident in meetings called to discuss ICT policy in 2001 by the Director of Technical Training, Ministry of Education, Science and Technology

⁴¹ PS1

⁴² PS1

(MoEST) basing his authority on a presidential circular that states: "According to the Presidential Circular 2 of 2001, the Ministry of Education, Science and Technology is responsible for Science and Technology Policy." There are no visible outputs from the meetings or conference held in November 2001 (Waema, 2005).

ICT Systems: Further evidence of *competition* in emergent structural properties for government ICT systems is two initiatives of 2002 that also illustrate the disconnection between policy and programme/project levels. Under a WB funded Public Sector Reform Programme, the Directorate of Personnel Management (Office of the President) awarded a major IT consultancy to establish a high-level information and communication framework, strategy and operational plan. It resulted in a detailed report⁴³, three stakeholder workshops, and a conference in November 2004. Few among interview respondents appeared conversant including those from the government; apparently there was very limited consultation. The loan-funded initiative died quietly leaving a detailed report that few had heard of or read.

Paralleling this was the ongoing Integrated Financial Management Information System (IFMIS) for the Accountant General's department and a major component of the World Bank and other donor funded state reform programmes. It is a major component of E-Government today. The project has experienced major delays and internal opposition arising from limited user involvement. Some of the opposition was from internal corruption networks that profit from inefficiencies in the archaic manual financial systems. Pension payments to non-existent persons were singled out as an example.⁴⁴

GITS' involvement in both initiatives was peripheral because of interdepartmental rivalries and the many vested interests despite being the official government technical ICT unit.

E-Government: The idea of E-Government first mooted by the dream team now had some real possibility. Not all members of the dream team left in 2001. One of them

⁴³ Government Information Technology Investment Management (GITIM) report

⁴⁴ MF1

now serving as Economic Secretary was a prime mover for e-Government. But the real force behind it was the Head of Public Service (HPS) and Secretary to the Cabinet. Previously he had served as Secretary to the East African Cooperation and as Kenya's Ambassador to the UN.

So what you are saying the PS [HPS] is a convertee?

Yes he is a great supporter of this initiative and I think through this strategic leadership and commitment he has sort of varied the whole government approach to this e-government problem.

And given his background in Foreign Service, in the EA Assembly, do you think that helps?

I think it could have helped a great deal, I think out there they must have appreciated very well the role of ICTs in public service or in operations.

(EG2)

At his request, an E-Government Task Force was formed in 2003 under the Economic Secretary now designated as Adviser to Cabinet on E-Government. It included officials from ministries that were heavy users of ICT or at least ahead of the rest. Past ad hoc IT initiatives favoured certain ministries especially finance, agriculture, health and education primarily because they attract most 'donor' interest. The task force produced an E-Government Strategy by March 2004. Backing the initiative were Canada's IDRC and UNDP in capacity building. The actual project was funded internally by the treasury.

The E-Government strategy in terms of a policy statement came up like that by fiat. It was quick, very quick.

(DA2 eGov idea Ref 1)

Because it was developed in-house and before the ICT policy, it was widely castigated as continuing evidence of government high-handedness. Within government it was felt that they need not be tied up by a policy more than ten years in the making, and that its main concern initially was internal government operations.

The confusion we see above arises from the dominant situation logic of elimination evident in the institutional *competition* to seize advantage in a rapidly reconstituting

ICT environment. None had sufficient bargaining power or negotiating strength to press forward consistently with a viable large-scale change programme. It provided the loophole for a parallel launch of the E-Government initiative with narrower focus in a completely different department (Office of the President). While we term this phase as displaying structural morphogenesis, some outcomes were destructive. On the whole it was also a re-constitution that got rid of embedded structural dysfunctions through competition and elimination. At the highest level it would include elimination of the previous regime in December 2002.

8.5.4 SOCIO-CULTURAL INTERACTION: CLEAVAGE

Under the prevailing situation logic of *elimination* something had to give between an intransigent ruler-ship and reformist forces in and outside government at the level of discourse. With the coming of the new NARC government the fissure clearly manifested itself in ICT circles.

CSOs and Development Agencies: Development agencies and CSOs have global or at least multiple-nation ICT programmes. There had always been small ICT components in development projects, major ICT initiatives started in the nineties. Their role was crucial in early stage financing when IT was not a development priority, and as a source of new ideas from their global activities. They bridge activities across government, private sector, NGOs to catalyse the ICT development. USAID funded the first National ICT Workshop in December 2000 following the Y2K effort where the abortive NCICT was first proposed. The workshop was a culmination of GITS/KENET (Kenya Education NETwork) stakeholder consultations in association with the two ministries (MoFP and MoITC).

Private sector hedging: The private sector through the Kenya Private Sector Foundation (KPSF) ICT Board hedged its bets and drafted an ICT brief for the each of the two major political parties for consideration should they win the December 2002 election. Evidently these as Cosmopolitan-liberals are ideologically ambivalent and pragmatic when pursuing economic interests as would be expected from Q-methodology findings. This paid off when NARC took power and was more open to collaborative efforts.

The Past as Present: Early in 2003 a watershed multi-stakeholder conference was held to discuss economic revival. The major output was the Economic Recovery Strategy for Wealth and Employment Creation (ERS) released in June 2003 where for the first time ICT was identified as a crosscutting issue. E-Government was identified as a specific strategic action to improve governance, and for monitoring and evaluation to track economic indicators and Millennium Development Goals (MDGs). The private sector was an enthusiastic contributor. As events unfolded it became increasingly clear that there were substantial obstacles to change arising from past decisions and actions; the ‘past was still with the present’ in an entanglement of multiple *durees* (Mbembé, 2001).

We have seen several pretenders to taking charge of ICT policy – GITS via the ICT-SWG, Director Technical Training and the GITIM effort. NCS had the legal mandate but was dormant. IDRC attempted to initiate collaborative research that would drive the process forward but was rebuffed. On the NCS and its director leading ICT policy change:

This NCS kind of took the leadership at the policy level?

Yes, and retreated to the backroom, quite impenetrable.

Just because of the personality?

Yes, while we say everything about the institutions is correct is not enough to have institutions, you must have institutions and personalities...

(PS1)

A chance meeting in Geneva at the WSIS between the director and the IDRC ICT programme officer may have reawakened the NCS to its role in fostering ICTs in Kenya when she pointed out the strong presence of some African countries.⁴⁵ In March 2003 it kicked off the policy process with a by-invitation-only public sector conference. The private sector and CSOs were excluded even with NARC in power. By August 2003 there was a ‘confidential’ draft National ICT Policy, labeled so to justify exclusion according to some interviewees. The minister responsible was part

⁴⁵DA2

of the ‘old guard’ and believed government had sole right to set policy.⁴⁶ When asked why the document was termed ‘secret’:

Why do you think the original policy ICT policy was kind of a secret?

Because that’s how the government used to work before, everything was a secret, the Moi, the Kanu government used to be like that, the government was like a black hole.

(CS1)

So why do you think the document was secret?

For such a long time, it’s just Civil service, I think is just the civil servant practice and secondly I think a few people wanted to maintain ownership and control of the process for their own personal greed and were therefore wary, but I think the more realistic explanation it has to be the civil servants there, they don’t think, it’s secret full-stop! It’s supposed to be only in government.

(DA2)

Culturally the NCS was an historical holdover with an authoritarian minister said to have begun his career as a strict and even harsh colonial administrator. This allowed the NCS to persist in its insular ways. In June 2004 it organized a most curious consultative meeting to discuss the draft ICT policy where the document under discussion was not availed since it was ‘confidential’! Such blatant lack of commitment to open engagement was widely condemned locally and internationally. It also moved IDRC to renew contact with NCS and the Office of the President, determined to get to the bottom of such odd conduct from a research perspective.⁴⁷ But only the appointment of a favorably inclined minister and permanent secretary brought some progress later.

Socio-cultural interaction had the situation logic of *cleavage* from intractable ideational differences. The private sector played both sides of the political game for economic gain. CSOs and development agencies were busy promoting many new initiatives, while the government was split between openness and authoritarianism. This diversity would explain the subsequent explosion of ideas in cultural elaboration.

⁴⁶ PS1

⁴⁷ DA2

These were explored over many participatory forums. Their penetration into the cultural system through agency was key to moving the process forward.

8.5.5 CULTURAL ELABORATION: PLURALISM

Cultural renaissance: Building on remnants of goodwill from earlier interaction processes IDRC initiated two formative projects with the government, one for ICT policy, and the other for E-Government capacity building. It also sponsored a study by a local NGO on the status of ICT policy inspired by emergent opportunities for ICT in development. Under the ICT policy project, IDRC sponsored a series of sectoral ICT workshops over 2003 to build awareness of ICT across the private sector and civil society.

So that happened around that time, this is 2000, 2003, 2004 and so what the project, private sector project did and civil society project did was create through because we are talking about a period of 12 months when there was literally like a workshop everyday on ICTs and something called either by civil society or private sector. And all of that happened in 2003, so by the time 2004 came and this DFID CATIA⁴⁸ project came there was a lot of, the grounds were prepared.

(DA2 Change agency Ref 3)

A newsletter KIPNews and email discussion list KIPList were created in September 2003 and lasted until March 2004 to keep the growing ICT constituency informed of developments. It played a crucial role in uniting different corporate agents through the quick efficient sharing of only relevant information for a fast changing process. These activities culminated in a crucial event termed the Kenya ICT Federation (KIF) Integration Workshop designed to bring the government to the same level of enthusiasm and commitment as the rest of the players. Apparently much of the actual sensitisation happened by default when government officials came to open these events.⁴⁹ Finally in March 2004 the first National ICT Convention was held. It generated great enthusiasm across the board laying the basis for genuine cooperation with government.

⁴⁸ KICTANET started as a project under Catalyzing Access to ICTs in Africa (CATIA)

⁴⁹ DA2

By the end of 2003 the workshops that both the civil society was holding and the private sector had created such a momentum and it was clear that weren't going to go anywhere with influencing the policy if government was not brought in. So we had created this tripod by 2004 where government, the civil society and the private sector said look lets go together.

(DA2 Emergent Change Ref 2)

This appears to have been the real turning point for the change process. From this time onwards there was broad agreement amongst corporate agents on the way forward in public ICT development.

8.5.6 MORPHOGENESIS OF AGENCY IN PHASE 3

Private sector corporate agency: Over the mid-nineties to the early 2000s, internet service providers (ISPs) emerged as a powerful interest group. They had acquired some financial muscle from the internet boom and wanted a say in the formulation of the ICT policy and regulatory framework. Principally through targeted press campaigns, they fought the monopoly enjoyed by the Kenya Posts and Telecommunications Corporation (KP&TC) in telephone service provision and regulation in line with the WB/IMF position on market liberalization. They had some notable successes though their tactics generated little goodwill with the government. Mutual antipathy severely hampered communication and progress on ICT policy matters and increased polarization in social interaction as noted in Section 8.5.2.

In a parallel development, the Nairobi Stock Exchange (NSE) grew steadily over the 1990s in a liberalizing global business environment. Among several forward-looking board committees established was the NSE High-tech and Growth Committee (NSE HTG) to target emergent opportunities in ICT. Its chairman also sat on the governments PRSP ICT-SWG, generating synergies and some quick wins such as import tax reductions for ICT inputs and equipment. The private sector established the Kenya Private Sector Foundation (KPSF) to coordinate and lobby generic private sector interests, especially infrastructure and governance. Because the NSE and KPSF were closely related at board level, the NSE HTG Committee became the KPSF ICT Board with a broadened mandate for policy formulation and advocacy.

At the 2003 economic conference, a cultural change in its relations to other players was evident in the new government. The Minister for Planning and Development asked the private sector to speak with one voice. They formed the Kenya Private Sector Alliance (KEPSA) as an apex body of private sector associations in place of KPSF. The KPSF ICT Board became the KEPSA ICT Board, which now operates as the Kenya ICT Federation (KIF) for all ICT associations. It would have greater legitimacy acting on behalf of private sector ICT interests. Some ICT associations did not join KIF and felt that it was usurping their rightful role with hegemonic aspirations. Alternative voices still existed within the private sector; some of these were apparently used to walking the corridors of power and were not ready for the new arrangements.⁵⁰

Public Servants: Progressive individuals in government continued to benefit from sustained efforts by CSOs and development agencies to catalyze ICT change. USAID under the Education for Development and Democracy Initiative (EDDI) programme supported KENET (a network for institutions of higher learning) and ExecNet as part of executive level information systems established across Africa. ExecNet in Kenya was a virtual private network (VPN) based on leased lines for permanent secretaries email communication. By targeting the top first it sensitized policymakers to ICTs potential to clear the way for other types of applications:

And this thing of e-mail amongst the PSs, it has helped a lot, has it helped in terms of changing the minds?

Yes, absolutely. You will realize that more than.....I have always been telling my colleagues, when you want to cause change, it is not necessarily on something they are working for the government, let someone even communicate with their daughter abroad, and realize this technology works...wow...it is essentially stimulating interest for technology...

(EG1 Emergent Change Ref 11)

Continued private sector interactions and support from the highest levels in government gave change minded primary agents within government support to

⁵⁰ PS1

continue the 'struggle' from within. The private sector actively sought out such individuals to see where they may be assisted:

But as we talk in KEPSA about our work and as we did in the foundation before as well, we have always seen as a big part our task to particularly support such people to strengthen them knowing them to be the minority, knowing them not always to be at the most senior level, but whether they are or they are not, and knowing that they need our help, and our intellectual input and our thoughts about how to conquer this awful environments in which they live and inhabit, and how to comfort and support them.

So you have discussed that?

Oh yes...And you brain storm together and just like he is spending his mobile on you, you are spending your time strengthening that person, also knowing that...unless we are strengthening those types of people, we are finished!

(PS1 Private Sector 29, 30)

Morphogenesis of agency in Phase 3 indicates an increase in change supporting corporate agents from the private sector and civil society. Change was fostered by a combination of factors including ideational pressure and financial support from development agencies that built capacity and momentum. Academics and consultants acted as researchers and workshop facilitators bringing new ideas to the attention of structural and cultural corporate agents. There was a decrease in conservatism within government from the combined structural and cultural pressure. Active interaction with outside groups overcame embedded institutional authoritarianism and insularity. This paved the way for change minded individuals in public ICT institutions to more effectively shape policy and programmes in Phase IV.

8.5.7 PHASE III OUTCOME: RE-CONSTITUTIVE STRUCTURAL AND CULTURAL ELABORATION

The real turning point for the ICT policy appears to have been when all key players converged *ideologically* after the year-long series of workshops in 2003/2004. Notice that it happened in parallel to competition amongst structural agents. Morphogenesis in culture and structure were therefore out of synchrony and could not yield positive benefits from reciprocity. Cultural elaboration was the most significant outcome

during this phase as seen in the morphogenesis of agency. Structural elaboration though present was less visible. In government it was evidenced as institutional reconfiguration, while private sector corporate agents emerged as an alternative structural agent from greater networking (formal associations) and increased financial muscle from the telecommunications industry boom.

8.6 PHASE 4: NETWORKED LIBERALIZED ENVIRONMENT, INCLUSIVE LEADERSHIP (2004 ≈ 2006)

Disjunction 1: Structural Morphogenesis and Cultural Morphogenesis

Situation logic analysis		Systemic integration	
		Structural	Cultural
		Low	High
Social Integration	High	Contingent complementarity (Opportunism)	Contingent complementarity (Opportunism)
Outcomes		Morphogenesis	Morphogenesis
Overall outcome		Structural and Cultural elaboration	

In Phase IV ideological battles have been largely won by cosmopolitan-liberal agents that favor change. We observe a reconstitution of corporate agents around new ideas on governance, technology and the profit motive in relation to public interest. The government, private sector, and CSOs are reading from the same script. New ideas linked to concrete ICT project proposals for implementation were interpreted and clarified through discussion forums and the web. A situation logic of *opportunism* prevailed from contingent complementarities in both the structural and cultural system.

Corporate agents are structurally differentiated with aspirations to realize interests through reconstructing weak and contradictory ICT institutional governance. Private sector players were anxious to reap the fruits of their efforts through investment opportunities (e.g. public-private partnerships) arising from long-term underinvestment in telecommunications. The consensual scenario at the end of Phase III in ideational convergence is now rife with constructive ideational conflicts as CSOs check on potential private sector avarice, and regression into old style conservatism manifested by some elements in the new government. Victorious liberal and critical minded agents in and out of government act to consolidate their victory through deepening the cultural conquest for an overall outcome of structural and cultural elaboration.

8.6.1 STRUCTURAL AND CULTURAL CONDITIONING (FEPS)

The new NARC government moved fast to implement forward looking initiatives in its flagship economic development policy document. Its widespread public goodwill and generally better caliber of ministers and top civil servants is the most important conditioning factor.

After your activities you noticed a mind-shift in government?

Yes, but actually it wasn't just a mind-shift in the government regarding the ICT policy process, it was the NARC government in general. You notice that most of the ministers were formerly civil society activists; it was the entire government, the entire process. So I think we were at the right place at the right time.

(CS1 Change agency Ref 4)

The new president's hands off management style gave ministers leeway to set and guide policy relatively freely in comparison to the previous regime that centralized all authority in statehouse. A few battles remained to be won like the NCS and entrenched corruption and patronage networks that later dogged the new regime (Munene, 2005). There was broad agreement within the ICT community on what ought to be done. The presence of a few enlightened public servants in key positions was crucial to their realization since many had obtained experience elsewhere and

radically changed the way government perceived its role vis-a-vis the private sector and civil society.⁵¹

At the global level, development discourse was the “Post-Washington consensus” that crystallized as the CDF under World Bank President James Wolfensson and Chief Economist Joseph Stiglitz. Other ‘donors’ as expected took a similar line and forged a common approach to foreign aid and development policy following the Rome and Paris declarations on aid harmonization and effectiveness (RDH, 2003, HLF-Aid, 2005). On the frontline of development assistance it emerged as the Sector-Wide Approach (SWAP) and basket funding (pooling of donor resources) for projects. Greater attention would be necessary on issues of governance and in particular corruption; there was renewed emphasis on country ownership of goals and process, and on monitoring and evaluation. The flagship Kenyan project in this format was the *Governance, Justice, Law and Order Sector* (GJLOS) aimed at wide ranging reforms in the judiciary and law enforcement agencies (GJLOS, 2005).

You know how donor interest wavers so there is an interest in governance now, this whole good governance, so of course the rush to ensure that *their* system is being put in place for accountability and transparency and all that. For us it is good, it is commendable and we commend it. (My italics)

(CS1 Development agencies Ref 4)

The italicized term ‘their’ in the quotation above indicates local ambivalence on the issue of ownership, part of the contradictions in the CDF approach to development noted by Cammack (2004) between ownership and WB supervision. Overall there is acceptance of accountability and transparency as desirable values. This would be explained by Kenyans’ experience with grand corruption and the destruction of institutions of governance for private gain in Phase I and II, accepting a ‘foreign’ system would be a small price to pay for clean government. Donor inconsistency in interests that could scuttle local initiatives appears to be taken for-granted and would be expected by local actors. One consultant explained that donor activities are highly dependent on individual country officers.

⁵¹ CS1, DA2, PS1, EG3

The donors have the country directors or whatever they call them, how much role do they play as individuals, with regard to what projects they choose to undertake, what is their leeway?

I think they have a lot of leeway and therefore by going by my interaction of them it looks like the projects where they have interest as individuals they are the ones which they can push forward, so its for example my experience with people within [organization ABC] is that somebody was passionate about ICT and that's why ICT issues were being pushed. so the moment you have people who are not passionate about particular area within the donor community, they will not pursue that line, only those who are passionate about a particular development idea are the ones they pursue, and I think even their support for ICT can be viewed along the same line, if you have a representative from the donor community or a particular concerned country office, or from a different donor who is passionate about ICT that is the person who can be able to push the government even to adopt some of the ICT issues.

(AC1 Interests Ref 2)

He cited frustrating experiences from corruption within 'donor' organizations. Such knowledge would make local actors more strategic when engaged in donor relations rather than simply following along. They would question and evaluate more closely the nature and necessity of such links and their own capabilities.

On the national front, NGOs, civil servants, the private sector and the population in general felt that IMF/WB good governance conditionalities were moving goal posts when even with the new government the promised revival of credit and 'aid' failed to materialize. Having had no support for ten years, the country tired of waiting on promises while sacrificing citizen services. In 2002 members of parliament (MPs) had rebelled against the secretive nature of IMF/WB government negotiations in the face of rising discontent (Editor, 2002). The new NARC government relied on a revamped Kenya Revenue Authority that greatly improved tax collection to fill financing gaps with great success. A new found assertiveness from these developments filtered into ICT processes to reshape attitudes to and relations with development agencies, western governments, and IFIs.

8.6.2 SOCIAL INTERACTIONS: DIVERSIFICATION

Communication among the parties was much easier now aided in particular by the KIP News and KIPList email list, the de facto place to be for players in Kenya's ICT. KIPList later morphed into the present KICTANET, discussed further below. Social interactions were characterized by *diversification* as corporate agents explored different avenues to attain their objectives given the situation logic of *opportunism* for the structural system.

In government: The new Minister for Information and Communication (formed from Ministries of Tourism and Information, and Transport and Communication) rejected the 'confidential' draft ICT policy in June 2004 as a "cut and paste job" (Waema, 2005). It was officially published in October 2004. Rewriting was slow due to pressures of work and it did not become a priority⁵² for the new minister or PS. In February 2005 a public invitation for comments was published in the newspapers, another milestone event towards an inclusive policy making environment. The private sector and CSOs were getting increasingly frustrated as partners to government at the slow pace of events. This may be due to a limited appreciation of the realities of government inertia as a senior change minded public sector ICT officer involved in a core networking infrastructure project explained:

Civil Society organizations, private sector like KEPSA, or I know IDRC has been involved, have you felt their impact?

Me I know at least the ICT NGOs have been training, you know whenever we have seminars and things and we invite them, they really talk about it...that we are moving slowly. But you see once, if you are out there, the government is a very big animal, getting things done in government is not easy. And me personally I think in the area of networking we have done a good job in the last three years, in the last three years, because I think next financial year we are finishing all the buildings in Nairobi, we have done like 80% in this financial year, and you know there are these issues of in government like procurement, which when you are out there you don't really understand.

So those who criticize the government for being a bit slow you think they don't know what they are talking about?

⁵² PS1

No of course they have...know what they are talking about alright, but you see they also don't understand that within government there are also certain procedures that must be followed, which drag, they also frustrate us inside the government, but we have to follow them.

...They are essential for control purposes... for example we had some tenders, which we advertised last year, some projects we are supposed to have finished in December, but then there was an appeal, somebody appealed. So the appeal board decided, which has a lot of people outsiders, to cancel it, we went again to tender again, people appealed again, but this time, there are no grounds. But we lost around two months in the process, but people don't really understand and it is them who appeal not us, for good or bad reasons, some of them are just malicious.

(MF2 Barriers to Change Ref 6/7)

Progress finally came when the new government settled in politically. Subsequent re-organization in the cabinet brought in another minister and PS that had the greatest impact during the NARC regime. The minister was a well respected media executive while the PS had strong academic credentials including a doctorate. The misunderstandings cited above diminished as communication intensified and trust increased across corporate agents.

Outside government: Former UN Secretary General Kofi Anan had personally invited CSOs to participate on equal footing with governments at the WSIS 2003/2005 conferences to set the pace for their involvement globally. Following the very successful awareness and consensus building campaigns backed by IDRC in 2003 (Phase III), the Association for Progressive Communication (APC), an international communication rights CSO, founded the Catalyzing ICTs in Africa (CATIA) project with funding from UK DfID. The project coordinator had local and international experience in advocacy and multi-stakeholder processes for gender and ICTs that she leveraged to great advantage in Kenya. Using existing 'social capital' in the form of NGOs, private sector, development agencies, and government networks that had come up as earlier, she founded the Kenya ICT Network (KICTANET). It is a virtual collaborative and advocacy network to act as a testing ground and clearing house for ideas related to the ICT policy process. APC is itself a remarkably virtual organization with no physical location, and by the time of this study, no other staff in

Kenya. First KICTANET had to overcome entrenched antipathy amongst all players from polarization in Phase III (8.5.2):

So we came together, and why it was so easy to come together is because most of the lobby group had become extremely frustrated that the tactics they were using were not really working, most of them were fighting the government. TESPOK is very famous for that, constantly on the newspapers and fighting, while government had become very suspicious with the private sector saying that all they cared about was money, they were suspicious of civil society; Moi did not like civil society at all.

(CS1 Change process Ref 2)

KICTANET as a united forum had greater *bargaining power* and *negotiating strength*; it would have none of the arrogance and insularity still remaining in government and literally forced the government to listen.

Yes, we are a force so that they do not target one particular sector, so if they say it is money we will draft statements for the private sector which also includes human rights perspectives, the development perspective so the government cannot come back and say that's all they are interested in, and civil society the same.

(CS1 Change process Ref 3)

Within the private sector different groups took the lead in advocacy depending on the issue at hand. TESPOK through KIF took the front line in the ICT Policy up to when the bill was published, and took a back seat to the Media Council for the Media Bill and Freedom of Information Acts.⁵³ Through KICTANET and other forums they provided moral, material and tactical support to each other including funding, attending, and participating in workshops. When for example the private sector drafts a memo to the ministry, CSOs assist to ensure it covers all the right things about equity and rights. It would prevent charges of self-interest from a vigilant government with unpleasant memories of private sector avarice. Equally the private sector lends support to the CSO agenda. For example they supported the Universal

⁵³CS1

Access Fund, a tax to broaden telecom access in underserved areas. Another avenue is corporate social responsibility to support community level ICT initiatives.⁵⁴

Soon after that I think the Ministry of Information and Communication was set up and the first thing we did was to try and engage the new minister and PS, and they were very good people and especially the PS had foresight in terms of really felt that the government could not go it alone, James Rege. So he would come to our KICTANET meetings, we would fund some of the activities and he hosts them, so it actually felt like the government was working but in reality it was private sector and civil societies that was behind everything. It was just being strategic and planning so through him we actually got the policy out. We managed to get all stake holders to input on it and we managed to actually fund a workshop, Mombasa, the national workshop. And all the KICTANET members representing the various sectors are the ones who actually sat down and finalized that policy, so we look at that policy and recognize our own language.

(CS1)

Thus the draft ICT policy was revised in open workshops and conferences, published in February 2006, and gazetted in March 2006 with broad acceptance. But it did not become law as fast as expected, Kenya's parliament and MPs gave priority to political maneuvering and the abortive constitutional review process (Gikunju, 2006).⁵⁵ One research proposition from the Q-methodology study noted that temporal engagements amongst the three different ideological agent inclinations would be necessary to attain common objectives. This appears to have been the case in the build up to completing the draft policy. All appear to have overcome mutual antipathy and have acquired mutual respect for others' positions.

Assertiveness and activism against any hints of government regression into authoritarianism was evident at the Media Owners Association forum to discuss the proposed Media Bill where I sat as an observer. CEO's of leading print and broadcast media took the PS to task, first for turning up unexpectedly, and secondly for inviting them at short notice to a seminar on the draft bill. Openly confronting senior government officials signaled a changed mode of interaction and new found private

⁵⁴ PS1, DA2

⁵⁵ It was still not law by 2008.

sector assertiveness. It showed greater understanding of their rights and greater faith in protection under law. Assertiveness served to fight off remnants of authoritarianism as one CEO indicated. Narrating how he was called to a meeting with the Head of Public Service on a 20 minute notice; he continues,

“We must move away from the point where we were threatened by the Executive. We have come a long way and have bruises to show for it.”⁵⁶

There were plenty of issues to attend to from the archaic regulatory regime. Liberal corporate agents were determined to press forward.

8.6.3 STRUCTURAL ELABORATION: DIFFERENTIATION

Diversified social interactions led to a *differentiation* in emergent social structures as the balance of power shifted from government. Different groups sought different paths with some success. With opportunities beckoning at every turn plenty of progressive initiatives are evident. It was a continuation of reconstructive efforts from Phase III when they were mostly destructive from the situation logic of competition, but are now constructive from one of *opportunism*.

ICT institutional governance: A former member of the ‘dream team’ as head of GITS was headhunted back from Rwanda⁵⁷ to establish the Directorate of E-Government (Dir-eGov) as the ICT Secretary. Dir-eGov was strategically located in the powerful Office of the President ministry as a sign of its increasing visibility and ascribed importance. Its core officers were drawn from GITS and Office of the President (they formed part of the E-Government Task-Force). The Dir-eGov relationship to GITS is unclear though working relations are cordial, partly because of their historical links. The ICT Secretary was once head of GITS and is widely respected as a professional. His position is equivalent to a PS, above the Director level of the head of GITS. GITS is larger, better funded, and is located strategically in the Ministry of Finance. Its role as ICT department for both the ministry and government is due for revision in the drive towards E-Government. By the time of this study GITS had only an Acting Director having failed to attract suitable persons

⁵⁶ MOA event observation notes

⁵⁷ He helped establish the Rwanda ICT Authority (RITA).

even after two advertisements mainly due to the non-competitive civil service remuneration. (Kenyan PSs earn much higher salaries than the officers below them). The *de facto* position is that the Dir-eGov handles the E-Government Strategy and Internet related activities like email while GITS takes care of ICT infrastructure in general. ICT policy is now fully owned by the Ministry of Information and Communications.

E-Government: Under the joint leadership of GITS and Dir-eGov E-Government infrastructure projects were initiated within existing laws and procedures. The latter await the enactment into law of the ICT Bill that would legalize electronic communication and transactions. A major sticking point is the existing civil service code of regulations and procedures that require major reforms. An evolutionary approach to change prevails within government while outsiders expect radical reform. Despite the discordant expectations in pace, the mood within government is upbeat with a deep sense of realism about what is necessary or possible.

A good thing which is a bad thing, I like that...

So you see that change is not as rapid and is not very disruptive, but you can imagine if we had all the money we needed, if we would lay the fiber, have high speeds of connectivity, pass all the laws, online laws, it would be so disruptive. But it is going in phases, so people are changing slowly as the technology improves also, but we are not riding on that, we are not saying that is our strength, we are driving the system as it changes...

(EG1)

Citizen concerns are given priority over more specialized ICT industry needs because they have greater political implications. Notably little pressure was felt from development agencies for E-Government. They were more concerned about overall governance spearheaded by WB/IMF interactions with the government.

... in your office you deal with a lot of external bodies, do they pressurize this idea of E-Government, are there any people who push for it, particularly either the private sector, the NGOs, anybody?

There is a lot, although it's not directly, they may not be aware that they pushing for it. The citizens for example may push for the use of technology by

government, through complaints in the press, if you look at the cutting edge⁵⁸ ... this website is not updated, somebody was looking for some information, he can't get them, he gets frustrated, and he knows that it's possible online, so in a way they are pushing for these changes.

So does the government care about such complaints?

Yah, so much, I mean, whenever something is raised by the citizens, they may take it so seriously, high-level meetings, and people responsible are called to explain.

So those things have an effect?

Yes, in fact the first thing we check in the papers is whether something has been mentioned about how we are doing! ...

(EG1 Emergent change Ref 6)

The E-Government initiative is funded largely from the government's own resources, which gives greater certainty to project planning and implementation.

A most important institutional consideration for any function is power to allocate resources. ICT is now recognized as a separate function with a separate budgetary line. ICT officers have been dispatched to ministries at senior levels as direct reports to the PS. Previously they were centrally located at the MoF GITS offices while ICT was budgeted as items in existing functional budget lines. Cases of misallocation and misappropriation were common from incompetence and corruption. Usually IT personnel reported to the planning department (to economists or statisticians) from historical association of computers with the budgetary process. Their work was ad hoc, dependent upon administrators' whims. Some had started using the E-Government Strategy in planning to bring greater coherence to ICT procurement standards.⁵⁹ Working across ministries as ICT demands is still constrained by the vertical budgetary allocation system.⁶⁰

The Dir-eGov spread word about E-Government within the civil service through advertising, TV and information video campaigns following an evolutionary strategy.

⁵⁸ A popular newspaper column where people comment or raise issues of public concern

⁵⁹ MH1

⁶⁰ EG1, MF2

First was encouraging all civil servants to acquire an email address of whatever domain; next, ministries were encouraged to have some web presence of whatever nature. After this generic induction all civil servants were allocated email addresses under the Kenya government domain. At about the time of this research, a tender for a common look and feel for government websites was floated and adopted, some ministries now have sophisticated looking and informative websites.

ICT infrastructure: A major problem with landlines in Kenya is long term under investment in telecommunications infrastructure coupled with poor maintenance by the KP&TC and its successor Telkom Kenya. The rapid uptake of mobile telephony testifies to the great need for good infrastructure. To circumvent this problem the USAID funded ExecNet project relied on ad hoc VPNs based on leased lines and wireless connections between government departments.

GITS contracts private companies to build physical ICT infrastructure to connect government departments and outlying districts. Local contractors are sometimes preferred over larger multinationals because they show greater commitment to what are small projects internationally but major to them.⁶¹ Public-private partnerships are the principal avenue in future infrastructure development, with several planned and ongoing projects (World-Bank, 2005b).⁶² Infrastructure development is now more a matter for pragmatic investment evaluation and decision by potential investors unlike Phase I and II when political considerations were paramount. NGOs and CSOs are openly raising issues of affordability and open access through KICTANET and other discussion forums, signaling increased agential capacity and power to influence outcomes. These are contemporary issues for contestation in ongoing morphogenesis of structure for ICT4D in Kenya.

8.6.4 SOCIO-CULTURAL INTERACTION: SECTIONALISM

As members learn the issues and whom to go to for what, socio-cultural interaction enacts, affirms, and re-evaluates newly acquired cultural values and norms. Interests coalesce around favorable ideas and investigate new ones in a “cultural free play”

⁶¹ MF2

⁶² EG2

(Archer, 1995:244). Each cultural agent pursues its own agenda to create ideational *sects* that live together with open interaction and mutual respect. For example the strategically important issue of laying a marine fiber optic cable to link East Africa with the world was discussed over the KICTANET email list with an appointed moderator and agreed format. Members include executives of large telecom and ICT firms, academics, consumer activists, feminists and community workers. There is great fluidity as values are re-evaluated in the light of new knowledge.

One indicator of how far Kenya has come is that the PS and minister responsible contribute to debates on an equal footing in response to issues, questions, or to inform members on new developments. Contributions are frank and light-hearted, at times heated, informative and constructive. Contributors know that their comments reach an informed audience with the ability and capacity to act. Open forums are themselves an innovation to safeguard ideological gains from regression by remnants of authoritarianism in government.⁶³

8.6.5 CULTURAL ELABORATION: SPECIALIZATION

In the favorable political dispensation, and in Phase III having worked out the nitty-gritty of socio-cultural interaction, this was a time to consolidate gains. Therefore complementary but contingent cultural relationships exist amongst the major corporate agent groups – government, private sector and CSOs – with CSOs continuing to lead in cultural innovation. The cultural system became more *specialized* through constant interaction and communication amongst cultural interest groups over email, meetings and workshops. Modes of interaction and expected standards of discourse were disseminated to acquire the status of social norms as in the example above on discussions about a proposed marine fiber optical cable. Under this cultural ‘renaissance’ many structural system initiatives were possible as explained under structural elaboration. Each of these undergoes greater ideational scrutiny from better informed and specialized cultural agents. Discussions on the KICTANET list indicate an expanding body of experts contributing on varied topics

⁶³ See discussion on Media Owners Forum (8.6.2)

ranging from the very technical to social. Social and socio-cultural interactions are mutually reinforcing to produce rapid constructive structural and cultural elaboration.

8.6.6 MORPHOGENESIS OF AGENCY IN PHASE 4

Abandonment by IFIs and western governments gave impetus to cooperative links between CSOs, the private sector and government when they had to band together for survival. In terms of revising the dialectical relationship fostering dependence this was a defining moment. A revitalized Kenya Revenue Authority (KRA) had to shore up state finances to meet election promises like free primary education when IMF/WB finances failed to materialize for the new government. Revenue collection was streamlined and expanded such that Kenya could budget without factoring in external support. KRA's revenue collection ability as economic power-base gave renewed confidence to civil servants' dealings with 'donors'; they were no longer crucial to government operations. Relationships between ICT CSOs and development agencies, their main financiers, became more of contingent partnerships with a more equitably agreed agenda.

But now that also means you really drive your own agenda and you can plan...?

Yes, exactly, we drive our own agenda, even with DFID, they are the ones...the beginning of it, it was money from DFID, but I made it quite clear that I did not want any interference. And came...there was a time we actually came to a point where I had to tell them I am sorry and if this how you are going to...and by then I think we had become very confident, we also did not need that DFID money.

(CS1 Freedom Ref 5)

For example when promised 'donor' funding failed to materialize for a workshop, they simply dug into their own pockets and went ahead. 'Donor' 'basket funding' for projects and programmes in many cases proved a logistical nightmare again reinforcing the drive towards self-reliance.⁶⁴ By now ISPs, mobile telephone firms, ministries, and relevant state corporations could underwrite change initiatives, which led to greater certainty and serious local engagement with the process.

⁶⁴ CS1, DA1, DA2, PS1, MH4

Is that a common...?

Is not very common but I think it is beginning to happen in Kenya, Kenya is beginning to happen. For example the national workshop, the Kenya ICT donor roundtable had actually promised the minister and the PS money to conduct that workshop in Mombasa, last minute they did not come through, it's KICTANET members who were running around to get money for that workshop. And in fact the PS finally sat down and said donors I never want to work with them again. It was myself, TESPOK, Celtel and the others, CCK, put in money, including our Posta and Telkom Kenya. So from then on we said forget donors, never depend on donors. We have asked for money, yes, we have written a proposal, but for a national workshop to discuss the bill, but we have already gone to Celtel, Safaricom and everyone has pledged, so we already have money from our private sector even though we are looking for money from the donors. So if they refuse we will still go ahead, and then they end up getting embarrassed, and then because I was a member I would actually tell them, I'll tell them it's a useless outfit, why have an ICT roundtable if you are not willing to work with the ministry?

(CS1)

When CSOs in the ICT policy process adopted this attitude, surprisingly donor agencies were more forthcoming:

I was assuming you are fully...?

No we are not fully funded. So what we do is, we have a function we go TESPOK how much? 200,000 o.k....you KIF, KEPSA how much are you going to give...Celtel? Celtel is willing to give 2,000, Nokia Kenya this...

Is it? That is a discovery! And I think many people will be surprised.

Yes that is what we do, and the more we have done that, now all of a sudden donors are throwing money at us!

(CS1 Freedom Ref 3)

In an interesting turn of events around the same period, the World Bank representative apologized to Kenyan's for the bank's 'mistakes' adding, "We have realised we will not develop Kenya. That is the responsibility of Kenyans" (Ondari, 2007). This statement is better understood in the light of looming irrelevance as Kenyan ministers and senior civil servants flush with confidence flexed their newly discovered muscle

and reassessed their relationship with donors. Some newspaper headlines are indicative: “*Treasury flexing its muscles with donors*” (Kimani, 2007); “*Africa must follow Kenya’s lead and end aid dependence*” (Kombo, 2007).⁶⁵ This would be a very unfamiliar position for the Bank and ‘donors’ used to ‘calling the shots’ in development interventions.

Whether such confidence is well founded is a matter for further analysis and historical record, but there was a fundamental change in ‘donor’ relations at all levels with all types of agents. Fanon (1986) states that it is by risking their lives that the ‘oppressed’ attain conditions for true freedom, and could objectify the ‘master’ outside of themselves. It appears this is what happened at this point. Some Kenyans including the ICT community began displaying an unusual amount of self-confidence in speaking and acting on their own behalf, as free autonomous agents, relative to previous phases where an authoritarian government or IFIs dictated the pace of events. This was considered key in Kenya’s transition towards E-Governance. Energy and drive for change was now vested to some extent in local agents that had the capacity to make strategic decisions, and to obtain necessary material and ideational resources to execute them.

8.6.7 PHASE IV OUTCOME: RAPID STRUCTURAL AND CULTURAL ELABORATION

Change in Kenya’s ICT policy and systems processes contributed to, and benefited from the emergence of free autonomous agency evidenced in agent interactions by the end of Phase IV. It led to rapid structural and cultural morphogenesis observed in many new initiatives and vibrant exchange of ideas. Real change occurred after local agents together with partners began to look at ICT4D, its value, and implications, differently from earlier phases. Reflections in the main discussion in Chapter 9 will explicate the full extent and reasons for these changes using the complete dialectical critical realist paradigm.

⁶⁵ Musikari Kombo was a powerful Cabinet Minister

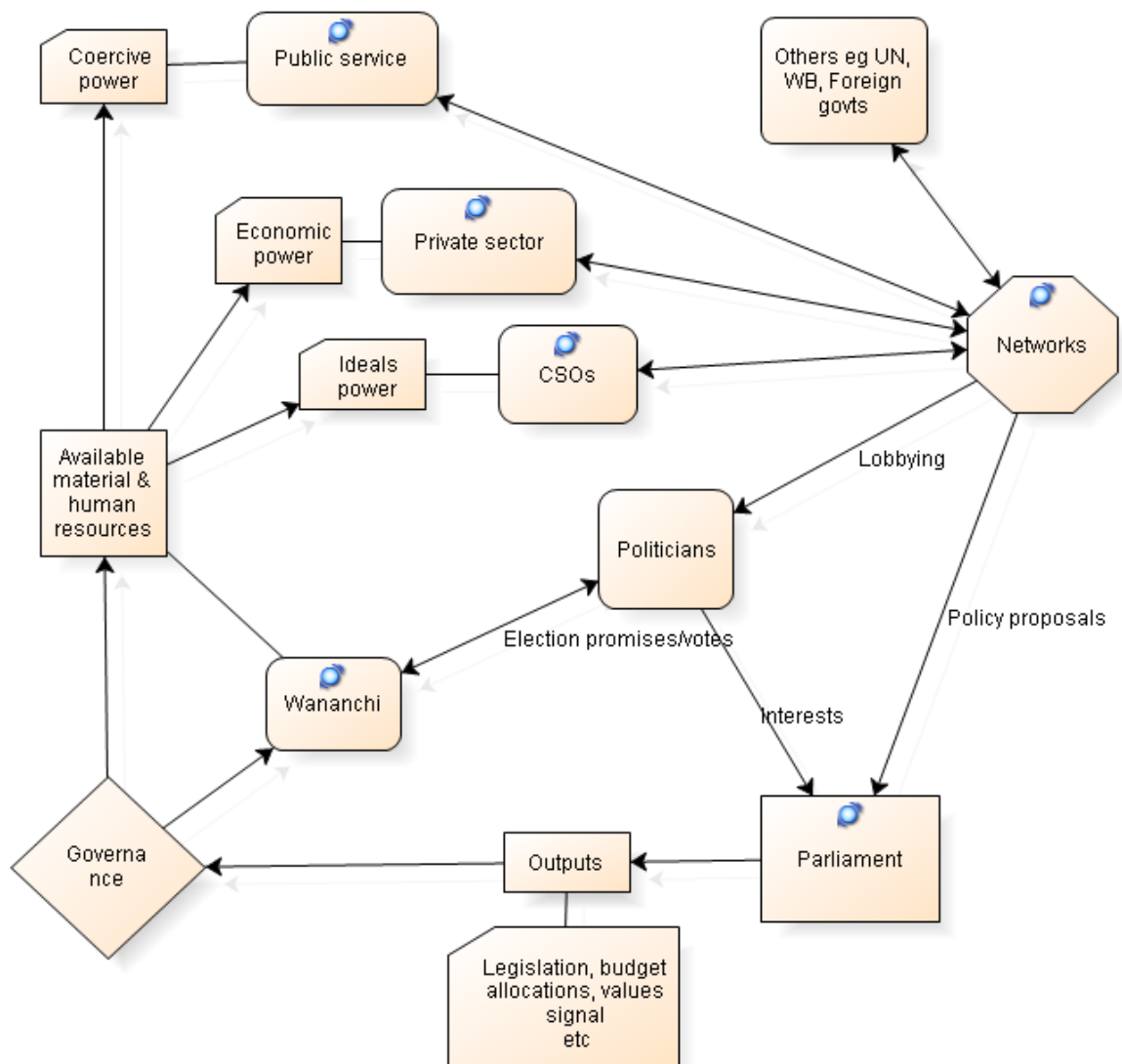


Figure 8-3 NVIVO model - Phase III & IV interactions

Summary of Phase III & IV agent interactions: Agent interactions are now through networks with the government as one of many actors. Politicians are now the main bottleneck to change through their legislative role. Their interests determine what becomes law and when. Foreign governments and development agencies role is much more subtle as they also interact primarily through networks on ICT matters. It is a much freer and opportunistic environment when compared to Figure 8-2 for Phase I and II.

CHAPTER 9 DISCUSSION II

Chapter 9 is divided into two main sections. The first section is a discussion of research findings from Morphogenetic analysis of empirical events in Kenya's ICT change process. The discussion covers the constitution and mediation of the broader ICT4D context. It also covers a new perspective of time and temporality for different levels of social reality. Morphogenetic theory is found to be a form of strategic analysis of for E-Government and ICT4D planning. The second section is more tentative and is a reading of ICT change in the analytical narrative as a critical realist dialectical process. It draws from elements of postcolonial theory and aspirations to emancipation and freedom for insights into what it may mean to develop and the success or failure of ICT projects in developing countries.

9.1 MORPHOGENETIC ANALYSIS AND THE BROADER ICT4D CONTEXT

Contemporary research in information systems in developing countries is centered on relating processes to their context using integrative interpretive and critical research methodologies (Walsham and Sahay, 2006). This study addressed the broader context that covers political systems, governance, international relations, discourses and ideologies that lie outside the immediate project context, things that influence the project or initiative as a whole. It includes the overall direction and purpose of ICTs, and of development as communicated and interpreted by those involved. These considerations for IS contexts would be similar to developments in institutional theory that saw need to incorporate the state and professional organizations, and the additional concept of 'organizational field' to explain institutionalization (DiMaggio and Powell, 1983, Scott, 1987).

Focus on the immediate project context may tie IS research too closely to technology innovation as a process in a given social context. It is possible to loose sight or downplay the broader context that has very different drivers in unstable or rapidly

changing political and institutional environments as found in many developing countries. To some extent, important ICT4D research findings such as local adaptation, cultivation, and negotiating standardization vs. localization (Braa and Hedberg, 2002, Thompson, 2002) assume that the initiative will go on without major strategy level problems indicating continuous change. Sudden change in national development policy, the political environment, social unrest or strained international relations may severely compromise or even put a halt to ICT4D projects as discontinuous change. Approaches based on Structuration Theory may not be suited to such situations (Cohen, 1998). In an extreme case researchers in Congo have found it necessary to come up with a framework for information systems development in situations of permanent crisis where discontinuity is the rule (Muhren et al., 2008). Understanding the broader context would give some insights into managing in situations of continuous as well as discontinuous change.

9.1.1 AGENTS, IDEOLOGY AND CHANGE

We begin with an overview of agent interaction and ideological change over the study period. In the analytical account the three ideological orientations from Part 1 (Q-Methodology study) were evaluated as part of the cultural system. Six types of agent groups comprised Kenya's ICT community; their interaction is organized around three 'vectors' of subjectivity identified as Conservative pro-government, Cosmopolitan-liberal, and Afro-centric ideological orientations. Over the forty year research period, the dominant ideology shifted from conservatism to a cosmopolitan-liberal one, with afro-centric critical agents playing a critical catalyzing role.

Conservative pro-government

These are the carriers of history and tradition. Archer (2003) presents them as community minded with an evasive stance towards constraints and enablements in the social system. According to Wallerstein (1991) they find their place in government to control the levers of power, Q-methodology study findings show that this stance is pro-government. Observations from the case study indicated that government departments were slow to respond to new opportunities like PCs, networking, or the

Internet.⁶⁶ Administrators rather than technical ICT professionals took the lead until events in Phase II and III when the culture in government changed enough to accommodate some reform.

Conservatives can afford the luxury of time since they control critical bargaining resources – state authority, budgetary allocations and legislative reform. Ideally parliament ought to check such luxury, but the executive is constitutionally too powerful in Kenya. Secondly, parliament derives its mandate from the large rural majority and urban poor for whom ICTs are not a priority (Kombo, 2007). Notice that even after the heroic multi-stakeholder policy process, the ICT Bill is yet to become law, and the government later reversed some agreed changes. It provides evidence of the continued existence of state arbitrariness and arrogance, a cultural system trait first encountered in Phase I as a facet of the conservative pro-government ideology.

Cosmopolitan-liberal

While conservatives seek security in state power and control, Cosmopolitan-liberals ‘seek first the economic kingdom’⁶⁷ (Wallerstein, 1991). They are autonomous reflexives that take a strategic stance towards society and are the primary generators of wealth and practical innovation (Archer, 2003). By privileging private economic interests over other societal needs they can be very focused and effective in advocacy. Hence we see KEPSA and TESPOK ‘battling’ government on private sector specific issues of privatization and civil service reform to create a better business environment, and the ICT Policy (mainly the telecommunications aspect). The Media Owners Association took the lead in negotiating the Media Bill and Freedom of Information Act. As was mentioned and observed, this stance created real hatred from conservatives and critical movements who felt that the private sector was selfish and if given the opportunity would ride roughshod over everyone else.⁶⁸ Though they are the primary drivers of change, they have too narrow an agenda which may appear

⁶⁶ This differs from some of the ‘Asian Tigers’ where the state took an active lead in E-Governance reforms.

⁶⁷ Adaptation of first Ghanaian president Kwame Nkrumah’s famous saying to African leaders in the 1960s - “Seek ye first the political kingdom, and all else shall be added onto you.”

⁶⁸ Polarization in social interaction – Sections 8.5.2; 8.5.6

as self-interest.⁶⁹ Ironically, it makes them efficient accumulators of economic power for bargaining. Their agenda happens to coincide with the dominant global ICT discourse of modernity, globalization, capitalism, and markets; as it is other agents have few options but to live with it while it lasts. The relationship between local cosmopolitan-liberals and global liberal-capitalism is more complex and merits further examination.

From a Marxian political economy perspective, Kenyan Cosmopolitan-liberals are a class that adopts bourgeois values, in this instance, the liberal capitalism of *laissez faire* economics and market efficiency (Fanon, 1967). From a global perspective however they are also third-world domestic petit bourgeois and their appropriation of the ideology is not absolute. Swainson (1980) details historically close links between the domestic indigenous capitalists and state authority that modify global liberal capitalist ideas to their own advantage. In Phase I structural and cultural conditioning, indigenous Kenyan bourgeoisie cultivated a local system of accumulation based on a derivative capitalism with some ‘African’ communal values termed ‘African Socialism’. At the turn of the millennium, these as a wealthy conservative elite, joined the youthful, educated, and professional groups to distance themselves from IFIs when aid resumption to Kenya failed even after substantial socio-economic reforms. They liaised strategically with critical movements to effect change locally in partnership with the reformed government. The outcome as described in the morphogenesis of agency in Phase IV was local corporate agents that were more confident and independent minded, united from their shared victories vis a vis virtual abandonment by IFIs.

While conservatives evade moral choice, liberal agents are basically amoral. Structural and cultural constraints with moral implications are reduced to factors in the economic equation. Their participation in the multi-stakeholder policy process is best understood in this context, as a temporal strategic decision to partner with critical movements to defeat government conservatism. Dealing with a coercive government presents dilemmas for the private sector arising from structural relations:

⁶⁹ EG1, EG3

Well, I see that's a big headache, but as private sector, how do you deal with that, what do you do?

You have to decide whether to be of the government or not, and it was a dilemma, because if you don't, you don't get involved with the bigger contracts. If you have a larger operation with high overheads and you don't get the big contract, how are you going to keep...because you are already geared up for large complex projects? If you do go for it you risk being bungled about as we have been bungled about.

(PS1 Private Sector Ref 31)

A fundamental asymmetry in which coercive power exceeds economic power confounds private sector relations with critical movements because cosmopolitan-liberals can rarely afford extremist positions. By Phase IV when the change process acquired its own momentum, liberal corporate agents had learnt to accommodate others' interests through morphogenesis of agency when they came to recognize relations of mutual dependence.

Afro-centric (critical movements)

From the mundane material concerns of liberals we move on to the sublime. Critical movements in Kenya ICT4D reflect embedded grudges with the system including unrealized political ideals from independence. They are the conscience of society and the carriers of potential futures based on universal ideals as *meta-reflexives* (Archer, 2003), and *anti-systemic movements* (Wallerstein, 1991). Most CSOs and NGO groups in Kenya played no significant role in the change process; apparently they were not very ICT aware. From the Q-method study findings and a distinguishing statement for this group, an important factor could be that ICT is not a priority, the majority of poor ordinary Kenyans towards whom they direct most effort, lack basic needs like education, healthcare, and food. Yet the few that did participate deserve most credit for making it all come together.

Starting at global level forums such as the WSIS these movements challenged governments' way of doing business to institute collaborative approaches (Munyua, 2005). These filtered into the then emerging 'developing' country national ICT policy processes. In Kenya it kick-started the conservative-liberal (government-

private sector) ICT Policy process stalemate. But progress came only when the government ran out of options in structural terms and collapsed with regime change in Phase III. Such movements may benefit from realistic assessments of structural and cultural systems to know when change is realistically feasible, or where interventions are best made. This was demonstrated by the shift from *local level* community type initiatives in Phase II to *policy advocacy* and ultimately laws in Phase III and IV.⁷⁰ Policy was found to be the ‘only language’ government and the private sector understand for it can become law.⁷¹

Swimming with private sector ‘sharks’ is a strategy fraught with danger because of their economic power; engagement must be calculated and strategic to avoid agenda capitulation. Wallerstein (1991) decries the dilution and ultimately counterproductive effects of such ‘partnerships’ on critical movements; it is unlikely that Kenyan ones will escape unscathed. Ongoing discussions on the KICTANET list and interview responses indicate that critical movements in Kenya ICT are vigilant for now.

In Phase IV morphogenesis of agency, critical movements distanced themselves from their ‘foreign masters’ to acquire a measure of independence and confidence alongside private sector led cosmopolitan-liberals and government conservatives. Material independence led to ideational independence; they no longer had to ‘push’ the donor’s agenda but could better enunciate their own and local concerns. Respondents voiced direct criticism and realism about failures with ‘donor’ driven initiatives while reveling in the newly found independence. Interestingly this stance made getting funded easier, a point we shall explore further when considering freedom and transformative agency in 9.2.3.

With this understanding of how agency and ideology interacted we can summarize structural and cultural system interactions, their outcomes and the morphogenesis of agency over the study period.

⁷⁰ CS1

⁷¹ CS1

9.1.2 1M: STRUCTURAL AND CULTURAL SYSTEM INTERACTIONS

Table 9-1 summarizes structural and cultural system interactions as evaluated in the analytical history of emergence for the transition process towards E-Governance in Kenya. It corresponds to the *first moment* (1M) of dialectical critical realism (DCR) with categories of **non-identity** (alterity, otherness). Change is conceptualized in terms of structure, stratification, emergence and change.

Table 9-1 Structural and Cultural system interactions

System/Phase	I	II	III	IV
Situation logic	Protection	Correction	Elimination	Opportunism
Structural	Morphostasis	Morphogenesis	Morphogenesis (-ve)	Morphogenesis
Cultural	Morphostasis	Morphostasis	Morphogenesis (+ve)	Morphogenesis
Outcomes	No need for change or existence of any real alternatives	Need for change downplayed by government	Competition, learning and reformulation	Liberal victory over conservatism. Regeneration
Agency	Morphostasis	Morphogenesis (Slow)	Morphogenesis (Rapid)	Morphogenesis
Structure/Culture	In phase: stable	In phase: unstable	Out of phase: destructive change	In phase: constructive change
Description	Stability		<i>Kairos</i>	Rapid change

Phase I is of little consequence for there was no need for change, neither were there compelling structural contradictions nor ideational alternatives in the social system. The section straddling Phases II and III is most critical for it conforms to *kairos*,⁷² transformational time-space or the opportune time (Ciborra, 2004, Wallerstein, 1991). It is qualitative rather than quantitative time where agents can make important moral and ethical (subjective) choices as a window of opportunity. Phase IV was defined by stabilization of the new government and the outcomes of decisions and actions taken

⁷² See 9.1.6

in Phase III. The environment had few structural or cultural contradictions, which was conducive to the flowering of new ideas and their realization for rapid structural and cultural elaboration.

Morphogenesis and morphostasis depend on potential reciprocity between structure and culture since both intersect during mediation by agents in analytical dualism. One row illustrates this relation as cyclical phase differences between them for the four periods from the account of events, from stability, through instability, destructive, and constructive change. The table also summarizes outcomes for the ICT4D context as a changing social system and the morphogenesis of agency during each phase. The causal account of ICT4D context as a changing social system was used to explore the broader strategic context, and to theorize change through successive dialectical moments.

9.1.3 CONSTITUTION OF THE BROADER STRATEGIC ICT4D CONTEXT

Four components are discernible as important constituent components of the broader context from the narrative in Chapter 8. From the outside are global pressures for change in governance including the IT revolution. From within is the existing national socio-economic base in terms of demographics, national culture and polity, economic and human resources that constrain transformational potential of new technologies in a broad sense. Between these two are elected politicians and development agencies that play a mediatory or gate-keeper role to the immediate project context for ideational and material resources.

Global normative pressures

Wong and Welch (2004) define global normative pressures as "a set of complex and interactive stimuli, demands, and opportunities in the external environment of national public bureaucracies, whose origin is not traceable to any particular nation". It includes global multinational agreements, the IT revolution, security against terrorism, prevention of corruption, empowerment of NGOs, and public management reform initiatives. The E-Government movement is considered as part of this pressure. A Jordanian minister was quoted concerning the country's goals to become a well governed information society, "We have no choice but to do it." (Ciborra and

Navarra, 2005) The idea of best-practices popular in national strategy development including Kenya allows for the fast transmission of certain norms and expectations for ICT and governance. Cosmopolitan liberals identified in this study were most favorable to ICTs would be acting in harmony with such pressures when pushing for rapid reforms. They take their cue from competitive pressure to keep up in a rapidly globalizing and digitizing world.

Chapter 2 explored the global institutional and ideological framework within which ICT for development and E-Government are undertaken. The diffuse web of 'global normative pressure' captures the overall influence on bureaucracies the world over. These are interpreted through the filtering role the country's political leadership, top bureaucrats, and development agencies.

Socio-economic base

Surveys have illustrated the close association between a country's socio-economic condition and the rate of ICT uptake including E-Government (Banerjee and Chau, 2004, UNPAN, 2005). A nation's GDP per capita has positive association with ICT investment (Hosman et al., 2008). India's outsourcing industry was greatly assisted by a large pool of technically trained English speaking personnel, yet high-technology innovation as a growth strategy neglects the masses of rural poor which creates social tension (Krishna and Walsham, 2005). Banerjee and Chau (2004) proposed evaluation framework for E-Government convergence potential for developing countries suggests a set of parameters some of which relate to the socio-economic base. These are *environmental factors* (political environment, social structure, economic situation, and demography); *resource factors* (funding and human capital); *infrastructure* (connectivity, SW and services); and *E-leadership* (administrative reforms, and policies and regulations). Environmental and resource factors are close to the definition of socio-economic base suggested here. Infrastructure and E-leadership are within the immediate rather than broader context ICT for development initiatives.

ICT4D initiatives will be constrained or enabled indirectly by these factors. Critical Afro-centric oriented groups appear to give greater weight to this aspect of the

broader context given Kenya's large population of rural and urban poor that lack basic needs. Kenyan politicians were sensitive to these priorities and impact on winning elections to give ICTs low priority in comparison to popular decisions like free primary education when passing legislation. The mobile phone and its innovative use for money transfer, and disseminating national secondary examination results via text messages (SMS) in Kenya have proved that the poor will adopt technologies that meet their needs affordably (Katz, 2007). Age, income distribution, ethnic composition, geographical spread and other demographics, education systems, culture, and national revenue base, act as a baseline for possibilities in technology innovation. ICT project actors deal with socio-economic factors through the mediatory role of elected leaders, organized groups and ultimately the government.

Politicians and top bureaucrats: balancing values and interests

From the literature at face value, politicians play a significant role as interpreters of the global and socio-economic base, and the project context for public ICT projects because of their political, legislative and executive roles. Two cases of successful E-Government and ICT4D projects – Andhra Pradesh (Krishna and Walsham, 2005) and Jordan (Al-Qirim, 2007) – were attributed to informed leadership at the highest levels that championed ICT to set the right context for success. In Brazil, Senators disinterested in technical ICT matters were the locus of resistance to G2G initiatives (Joia, 2007).

Empirical evidence from this study supports this position. In their political role, politicians mediate between the broader and immediate context by shaping local discourse through signaling what is acceptable and what societal priorities ought to be. Politicians take in much information from local and international sources and decide what to prioritize. As elected leaders, their views are widely disseminated by the mass media, and at political rallies and social events.

Wilson (2004) also found that elite strategic behaviors were an important factor to understanding ICT change in developing countries. ICTs never became a priority for Kenyan politicians over the study period unlike for example in Andhra Pradesh or Jordan where the top leadership was directly involved in ICT initiatives. As a result,

concern with ICTs was perceived as an elite affair for a few NGOs and private sector players. In the rapidly changing political landscape, Kenyan leaders were more concerned with getting re-elected which meant giving the appearance of prioritizing basic needs. This would explain the lengthy delay in passing the ICT bill into law. However, security related or politically sensitive ICT applications such as salary processing for civil servants and the military in Kenya received high priority in funding. A related situation was encountered in Andhra Pradesh where the very successful Chief Minister in terms of ICT development was finally voted out presumably for failing to address basic rural development needs (Krishna and Walsham, 2005). Repeated calls for better ICT championship in Kenya's government from interview respondents indicated the absence of political leadership.

Ministers in Kenya are politicians who also exercise executive authority. In this capacity their values have critical bearing on specific projects because resource allocation and rent seeking are closely tied to interests. Progress in the ICT policy process only took off when ICT conversant and favorable ministers took charge of the ICT ministry. However their effectiveness was hampered by the general lack of interest in ICTs across the political class leading to continued procrastination and delays. Top civil servants too could play a role very close to that of ministers if they were close to the centre of power. Kenya's E-Government strategy and initiative was spearheaded by top civil servants close to the president. They set the right context by managing the political environment and broader institutional issues. In one case, the senior official that spearheaded the E-Government strategy set up a separate disbursement mechanism for donor funds to streamline project execution. Technocratic members of the 'dream team' were not as effective in Kenya because their working relationship with the political class was strained.

Large public ICT projects provide opportunities for rent-seeking especially when they involve a substantive amount of money. This was a serious problem in Kenya in Phase II when massive scandals involving procurement for public ICTs were reported regularly in the media. The president, ministers and top civil servants values and their attitudes towards private gain vs. public good become important considerations when proposing large projects.

Politicians in their executive capacity (president and ministers), and top bureaucrats also deal with external partners (foreign governments, development agencies), another component proposed as part of the broader ICT4D context. In this capacity they filter what is acceptable on behalf of the country and provide a face to the outside world, thus shaping the attitude of foreign institutions to participating in ICT development initiatives. In the latter part of Phase II and in Phase III, Kenya's political leadership was isolated by western powers and international development agencies for failing to undertake required political and governance reforms as fast as required. As a result the ICT policy development process and investments in E-Government systems suffered when funding dried up from most foreign development agencies.

Political reforms and ICT change are closely associated in Kenya. Figures 8-2 and 8-3 illustrate changes in mode of interaction within the broader context for public ICTs in Kenya. In Phase I and II, politicians dominated all interaction including private sector business and relations with foreign development agencies. In Phase III and IV progress was observed in the ICT policy process after a new more open and less coercive government took over. Most interaction became independent of politicians through networks and lobbying. However they still exercised control through parliament by setting priorities and pace for the debate and passing of parliamentary bills.

Elected politicians and top bureaucrats therefore balance their values and interests as they mediate between both global pressures and socio-economic needs. They set the effective reform agenda by defining the political and legislative environment, and the high-level institutional context. Through political actions and communication, they manage societal values, popular expectations and needs, and interpret these for development policy including ICT4D.

Development agencies and country officers: helping vs. 'hidden agendas'

Development Agencies and appointed country officers are another important mediating agent. They have or control funding to development projects which gives them a critical edge in bargaining power. Their importance in a given situation linked to material and ideational resources that give them power to entice or coerce. Their

origins in rich powerful countries and association with research institutions make them a source of ideas for technology innovation. Ideas may be transmitted directly through direct interaction with the government, or indirectly through private sector, civil society and non-governmental organizations that share similar values. A combination of financial resources to facilitate the dissemination of new ideas proved decisive in Kenya through the series of ICT workshops and seminars in 2002 and 2003, and helped overcome the government's lethargy towards ICT reforms in Phase III and IV.

Development Agencies' operational impact is greatly influenced by individual country officers' interests, and donor country development policy and interests. Some development agency employees may also exploit their positions for private gain. Frequent policy and personnel changes were found to have great and usually negative impact on ICT4D project continuity and sustainability. This is a common finding from studies in developing countries (Kimaro and Nhampossa, 2005, Puri and Sahay, 2007). Because such decisions are usually taken in the country of origin as part of foreign policy, there is little project actors can do about it.

Donor interests were presumed by respondents, termed with negative connotations as the 'donor's agenda' as in many studies, implying hidden aims despite the offer to 'help'. In extreme cases as observed in Kenya's Ministry of Health, and Kimaro and Nhampossa (2005) finding in Mozambique, it reduces the ministry to a collection of loosely associated projects and programmes. According to respondents, recent efforts towards better donor coordination in policies and financial disbursements were still subject to individual country foreign policy goals and financial accounting regulations (MOH, 2005). Projects in the largely internally funded Ministry of Finance were more successful and sustainable partly because ICT officers had more control over funding and project aims. Donor influence was indirect and limited to pressure for good governance at the political level.

9.1.4 MANAGING THE BROADER CONTEXT

Effective management of the strategic context contributes to project success and sustainability. Failure to manage factors associated with the broader context

compromised a community based internet project in Tamil Nadu (Kumar, 2006). Project actors (ICT officers in the civil service) in Kenya relied on networks formed by other important players in ICT4D and E-Government to manage the broader context. Civil society, NGOs and private sector groups use lobbying and networking to gain bargaining clout when dealing with the government and donors. Their involvement in projects is more contingent; neither can they have decisive influence on public sector initiatives so were not considered as part of the broader context. Project actors can engage them directly as part of the immediate project context. It was observed that networks need time to grow and cultivate trust because different groups tend to have different cultural and value systems. When networks draw on the full range of well placed civil servants, ministers, and development workers, they can be very effective in bringing about desirable change through effective strategies and coordination. E-Government adoption was aided by the collaborative USAID funded ExecNet project that sensitized Kenyan Permanent Secretaries to email communication. Well placed civil servants can sell ideas to politicians to create a better project environment such as protection from other political interests. The private sector proved very effective in lobbying; they are articulate, well informed, have desirable resources in the form of goods or services, and are financially powerful. However some politicians and top bureaucrats may wish to be associated with them to create rent-seeking opportunities at the expense of the public. This has been a major problem in Kenya.

Civil society and NGOs tend to associate with development agencies for funding in return for promoting a given set of ideas or agenda for social reform. Their relationship with the government and the private sector was found to be more strained. Their concern for values such as equity and human rights, and linkages with foreign agencies that were generally critical of the government make them suspect to politicians and top civil servants. Private sector players perceived them as simply doing whatever their financier required without bearing full responsibility for their utterances as business men have to. Networking and lobbying was a full time job for them but an expense to business.

Findings from this study suggest that developing countries may benefit by managing donor relations in ICT4D initiatives more strategically to mitigate structural pathologies (Puri and Sahay, 2007, Wade, 2002). Donor interests and potential gains could be factored in during project design and negotiations, in comparison to the proposed development gains. If possible, disbursement mechanisms that are less prone to foreign policy decisions that may come later could be negotiated in advance. Such actions require stronger internal governance as observed in the case of vendors and external sources in Jordan (Ciborra and Navarra, 2005). The absence of an information policy in Kenya's Ministry of Health meant that donor funded health programmes did not have to provide national health data to the ministry. The ICT officer felt frustrated by his inability to demand data for the Health Information System from the many individual programmes. Drafting and enactment of such policies is itself subject to the values and interests of the top leadership in government departments and the legislative procedures.

The observations on managing the broader context have bearing on participation. Project actors would need to be sensitive to and understand the interests of all players and their real motives for participation. Building, managing, and sustaining networks is a powerful way to manage the broader ICT context. It may not be possible to directly influence the political class, top bureaucrats, or foreign development agencies. Project actors increase their bargaining power and strength by actively participating in such networks. Networks were decisive in Kenya in overcoming government intransigence on ICT reforms, and in surviving the donor boycott and delays in financial disbursement that usually cripple ICT initiatives.

9.1.5 MORPHOGENETIC ANALYSIS AND ICT STRATEGY

IS researchers have developed various frameworks or used established social science theories to explore technology innovation in developing countries. This study is in the same tradition but using a critical realist framework – the Morphogenetic Approach – as social theory. Social science theories like Structuration Theory, Actor-Network Theory and Morphogenetic Approach do not specify specific levels to analyze a social system; rather they are treated as emergent from ongoing social

interactions. Some multi-level frameworks are specific as to what levels ought to be evaluated. Alvarez (2003) uses levels of increasing organizational complexity while Sein and Harindramath's (2004) framework is more generic and is concerned with different levels of impact on human development.

Korpela et al.(2001) base their multi-level and temporal framework on Pettigrew (1987) with Society as the topmost level. The level society includes international relations that would be a source of global normative pressures. Kimaro and Sahay (2007) used institutional theory to evaluate the contradictory institutional setting for Tanzania's health system, especially that between formal and informal systems. Institutional theory has the concept of organizational field that would correspond to the broader institutional context. In their study it included international development agencies and donors. There has been debate as to whether institutional theory deemphasizes interests at the expense of norms and taken-for-granted assumptions (Scott, 1987). Morphogenetic analysis explicitly incorporates agents with values and interests in dialectical relation, and would cope well in situations of rapid institutional change.

Rapid political and institutional change

Morphogenetic analysis may be appropriate for developing country contexts characterized by political and institutional instability since it factors in contingency, contradiction and change at multiple levels. The notion of generative mechanisms and the allowance for reasons to be causes mean that integrating ideological influence on the prevailing cultural system with structural system changes is more explicit. For example Kimaro and Sahay (2007) propose better alignment in formal rules and informal constraints and cite as a problem that the system had failed to acquire legitimacy. In this study contradictions were evaluated through the analysis of agents and their material and ideational interests. The formal, informal, or the legitimate, was found to change as new agents or ideas became dominant. In situations of rapid institutional reconfiguration as observed in Phase III and IV, rules and norms can change quickly. The morphogenetic approach does not require there be some global *shared values* as would functional approaches to institutions (Archer, 1995), rather

temporal associations based on *shared concerns* amongst agent groups were found to characterize change in situations of rapid political and institutional reconfiguration.

Realistic ICT strategy analysis

Morphogenetic analysis has a strategic level (broader context) focus. Empirical events are examined to come up with situation logics in the construction of the analytical narrative to explain observed change. Situation logics are the generative mechanisms in the Morphogenetic Approach and are assumed to predispose agents towards certain actions/decisions by providing strategic guidance (Archer, 1995). In this respect morphogenetic analysis is an approach to strategy analysis similar to well known frameworks such as Porter's five forces model, value chain analysis, or contingency theory (Mintzberg et al., 1998, Porter, 1980, Porter, 1985, Porter, 1990).

An assumption of linear development progress still dominates proposals for strategy frameworks for E-Government and ICT planning at national level. The Gartner Group's four phase E-Government maturation model popularized by the World Bank assumes four stages of growth: information, interaction, transaction, transformation (CDT-InfoDev, 2002). This is similar to Sein and Harindramath (Sein and Harindramath, 2004) model that assumes increasing penetration of technology innovation in society. Zarei et al. (2008) improve on the Gartner Group model with suggestions for additional stages including 'building trust' in a nine stage model for developing countries.

The well publicized DOI development dynamic model aims at achieving synergies between policy, infrastructure, enterprise, human capacity, and content and applications (DOI, 2001). It is an evolutionary dynamic model at a high level of abstraction that does not address actual interactions between the components, or outcomes other than possible synergy. From a critical realist perspective such abstraction and analysis would be a case of 'misplaced concreteness'. Conceiving social reality as stratified and emergent better evades the "fallacy of misplaced concreteness" in scientific explanation, when we treat as though concrete, institutions, things, events or activities, though they are forms of mechanisms (Collier, 1994:47). Social science at the level of things and events, such as relationships from data and

statistical regression models, fails to recognize or adequately theorize underlying mechanisms that imply complex codetermination for any outcomes. Any findings would be subject to mistakes from abstract relations only tenuously related to underlying mechanisms.

Morphogenetic analysis serves to explain how expectations may or may not be realized given the present configuration of the social system. Delving into causal relations amongst social entities as generative mechanisms may bring out new dimensions of context and strategic possibilities. Certain paradoxical observations may prove easier to understand, for instance how the E-Government strategy came to precede the ICT policy in Kenya, or why the ICT policy took very long to get legislative approval despite a favorable political environment.

The idea of situation logics that predispose actors towards certain directions becomes a useful explanatory tool in strategy analysis for ‘realistic’ national E-Government and ICT planning. Given critical realism’s conception of social reality, investigating generative mechanisms with morphogenetic analysis becomes a framework for generic ICT strategy and project performance evaluation. It would add to the scope of institutional and contextual frameworks available to ISR and ICT4D practitioners that integrate behavioral and structural approaches.

9.1.6 TIME AND TEMPORALITY IN INTEGRATIVE IS FRAMEWORKS

This section explores alternative perspectives on time and temporality in integrative models to frame change in developing countries IS contexts. Proposals for multi-level integrative frameworks to frame processes in their context attempt to include time (Alvarez, 2003, Gerhan and Mutula, 2007, Korpela et al., 2001). Institutional theory and structural-sociological empirical studies of ICT change usually incorporate time with longitudinal research designs (Avgerou, 2000, Bada et al., 2004, Wilson, 2004). Morphogenetic analysis also adopts a multilevel approach to frame processes and contexts over time in an emergent stratified social reality.

Critical realism recognizes three orders of reality; social, practical and natural order, that give rise to different temporalities (Archer, 2000). Several forms of temporality

featured prominently in literature. In African contexts Mbembé's (2001) phenomenological 'multiple *durees*' represent a complex reality of lived experience in the postcolony. Giddens' (1981) critique of historical materialism enunciates three types of temporality: *duree* - immediate experience; *dasein* – the life cycle of the organism; and *logue duree* – institutional time. Wallerstein's (1991) alternative conceptualization in the World Systems Approach privileges evolutionary change and is closer to Critical Realism. Following Braudel's historiography, that "events are dust", it focuses on enduring structures and cyclical rhythms (Clark, 1990:139). Historians are said to be ideographic and time bound while social scientists are nomothetic and timeless; but both escape reality as the *enduring* but *not eternal* sets of structures. Wallerstein enriches Braudel's four *times* with an additional category *kairos* as shown in Table 9-1. Each has a corresponding spatial dimension.

Table 9-2 Time and space

Time	Space
1. Episodic	Immediate geo-political space
2. Cyclical	Ideological space
3. Structural (long term, e.g. world system, capitalist world economy)	Structural (large scale space)
4. Sages (timeless definitions)	Eternal space
5. <i>Kairos</i> ⁷³	Transformational time-space
Compiled from Wallerstein (1991 Ch. 10)	

Temporality and transformational decisions

The immediate ICT4D or E-Government project context would correspond to episodic time and immediate geo-political space within which project actors take ongoing managerial decisions. They may however need to pay attention to other time-spaces such as cyclical and structural that may have broader impact. *Kairos* is qualitative time-space that deepens the framework's analytical capacity by isolating

⁷³ *Kairos* is Greek for the opportune time, the right time, in contrast to *chronos*, historical (clock) time.

time-spaces where moral choice and the exercise of free will is possible. It is related to structural time-space but not to cyclical ideological time-space. Structural time-space is said to be where real fundamental change can occur; 'bifurcation points' where the 'system can choose' between many possible futures. Ciborra (2004) uses the same [Greek] term to characterize time in relation to improvisation in IS. He contrasts it to the more common boredom, or panic, in which time is either undifferentiated, or absent. So *kairos* represents critical windows of opportunity where important *transformational* decisions are possible.

Interactions amongst corporate agents in Kenya had three dominant orientations identified in Part 2 (Q methodology study). We may conceive the three discursive positions (ideologies) as constitutive of a zone of intersubjective relations in cyclical time, related to ideological space (Wallerstein, 1991). At any given time in the ICT4D project context, agents holding these three ideological orientations coexist with different bargaining powers and negotiating strengths. Dominance for a particular ideology is contingent upon the existing configuration of agents, structural, and cultural system elements, and their trajectories. Some ideologies are dominant, in ascent, or are in descent to generate a complex realm of intersubjectivity (Harvey, 2002). Conservatives are living in the past, critical Afro-centric agents in an idealized future, with Cosmopolitan-liberals in the here and now. They are ideological positions existing in the ideational realm shaped by operant subjectivity that organize desire for social change differently.

Kairos and moral choice in Kenya ICT

Phases II and III in Table 9-2 best fit *kairos* because new technology development requirements could not be met within the rigid mainframe culture or centrally controlled social system. A nascent telecommunications sector also required a new regulatory environment for a freer trading environment. The internationally isolated, conservative, and corrupt government confronted formative private sector and CSO corporate agents fronting global capital's democratic liberal ideas on ICT governance. Faced with this choice, it chose not to act. It lacked moral courage to face up to the dictates of structural contradictions as those outside wished and buried its head in the

sand. It was a *kairos* moment, qualitative time that proffered risk and opportunity (Wallerstein, 1991).

It is within this context that we can understand the piecemeal reforms (situation logic of correction) and ultimate refusal to change that led to elimination of the old brand of conservatism in government, with victory for liberal ideology espousing agents in Phase IV. Refusal in ICT reform was part of the broader one for the expansion of democratic space, which led to the regime's overwhelming defeat in the December 2002 elections. Questions of public sector ICT reform are therefore inseparable from the broader political and socio-economic space. It confirms and enriches our understanding of Wilson's (2004) finding that they are tightly coupled in such contexts.

Notably the early part of this period had many false starts in ICT policy reform that almost always ended up in frustration. Many of these were premised on linear technocratic conceptions of social transformation (eternal space). For example the series of meetings and workshops held during and after the Y2K bug efforts to herald a new era in ICT management in Kenya ended up as trashed hopes (Waema, 2005). With hindsight, the real battle was ethical and moral; any progress was contingent upon the government's reaction to new structural and cultural developments within the social system that undermined the apparent stability of Phase I *Myth of Cultural Integration*. With the government living in denial, choice moved on to the protagonists. The private sector and civil society had mobilized over time, taking advantage of the proffered structural and cultural configuration to effect desired change. Every agent therefore had to confront critical decisions and take a stance.

Implications for time in integrative IS frameworks

The discussion above and empirical observations indicate that the conceptualization of time in integrative IS frameworks could benefit from giving consideration to different time-spaces. Multi-level frameworks are usually conceived as levels of increasing complexity and increasing scope of the unit of analysis such as from individual actors, through groups, organizations to society. Drawing from Wallerstein's (1991) classifications with different 'times' for different 'spaces', our

analysis considered ideological (cultural system) and structural (structural system) spaces and using morphogenetic analysis. Empirical findings indicate that timing was crucial since opportunities to make transformational decisions (*kairos*) may be brief. Different types of agents respond differently to their moral implications so outcomes would depend upon agent interests and interactions based on bargaining power and negotiating strengths. It is suggested that such an approach to time would enrich multi-level integrative frameworks for developing country contexts by integrating different time-spaces with moral choice and the possibility of transformational decisions.

9.2 ICT4D CHANGE AS DIALECTICAL PROGRESSION

This section is a reading of the analytical narrative using dialectical critical realism to gain further insights into ICT4D change in a postcolonial country context. It is presented progressively as four degrees of dialectical critical realism (DCR) to culminating in transformative praxis. DCR assumes a totalized human being with moral and ethical dimensions giving agency and human needs a central place in any transformational process. It leads us onto a critical realist perspective on the meaning of development and IS project success and failure. Since it integrates a particular postcolonial critique of modernity as outlined in Chapter 4 with the explicit value commitment to freedom of dialectical critical realism, the findings and implications thereof are tentative and subject to individual ethical valuation.

9.2.1 2E: THE DIALECTIC OF FREEDOM

Section 9.1.2 summarized structural and cultural system interactions where change was conceptualized in terms of structure, stratification, emergence and change. This was the *first moment* (1M) with the categories of **non-identity** (alterity, otherness). In critical realist terms Morphogenetic analysis and findings on the broader strategic context in the first part of the discussion were at this level. The next step in dialecticizing critical realism was *second edge* (2E), **negativity**, the recognition of absence's ontological primacy over presence. To 'change is to cause to absent ills or constraints' and is the *axiology of freedom* (Bhaskar, 1993). Conceptually it is the

most important for it entails the third (3L) and fourth (4D) degrees of dialectical critical realism (DCR). I will explain its significance with an example.

A typical ICT4D statement or conclusion as in Table 3-2 would equate problems to “lack of” something. This formulation arises from 1M dialectics that allow only for *alterity*, or other, of being, rather than its negativity or absence. “Lack of...” is presented as a property of the subject with causal significance. Such ‘lack of’ dissolves in 2E dialectics that reject ontological monovalence. When absence is given ontological status as is presence, ‘lack of’ becomes a “lack of” to be absented, an ‘absence to be absented’, rather than a property of the subject, as the ‘pulse of freedom’ dictates (Dean et al., 2005). ‘Absenting of absence’ would be evident when people begin questioning implicit assumptions and long-held beliefs, which results appear in the third and fourth degrees. Agents analyze, reflect on, and face up to contradictions in social reality in the course of events and interaction. Contradictions are indicators of the possible existence of freedom denying false beliefs or ‘myths’ in a social reality characterized by an irrealist categorical structure (Norris, 1999).

False Beliefs

Critical realism’s emancipatory impulse is premised upon the existence of freedom denying false beliefs or taken-for-granted assumptions that keep people subservient to covert but ultimately destructive ideologies. They are woven into the very fabric of society’s constitution as to appear natural. In such environments, non-critical summative categorical statements about phenomena are possible. In ICT4D false beliefs may be associated with the persistent problems paradigm that constructs failure socially when “lack of” is emphasized rather than the positive (Chapter 3); they may sustain difference and legitimate existing power relations (Wilson and Howcroft, 2002). Such could also be part of myth-making associated with new technology innovations in modern society (Corea, 2007). IS researchers and actors may become accomplices if they use established epistemologies uncritically. According to Brohman (1995) a technocratic orientation has been observed in third-world elites trained in western institutions that work in development circles. A realist depth analysis in the form of explanatory critique examines any such myths, associated false beliefs, and their effects (Collier, 1994).

Discursive inconsistencies may be demonstrated through deconstruction techniques like critical discourse analysis (Thompson, 2004). Demonstrating false beliefs goes further to transcend the fact/value dichotomy in philosophy (Bhaskar, 1998). The argument from fact to value is not deductive but evidential based on empirically verifiable facts. To this extent it is a scientific argument but with a *ceteris paribus* clause that truth *is* a good in all fact to value inferences (Collier, 1994). Collier (1994) argues that an emancipatory (explanatory) critique transcends the fact-value dichotomy. It ought to bring false beliefs to light and demonstrate their falsity from their causal effects in reality.

The following are possible cases drawn from the explanatory account in Chapter 8 that agents appear to have overcome. They are tentative propositions and each could be specified more precisely. But they illustrate the use of explanatory critiques in bringing to light taken-for-granted assumptions prevalent in ICT4D more forcefully on the basis of empirical evidence.

1. *Foreign, 'donor', help is necessary for ICT progress in Kenya.*

Evidence

- a) A belief of conservative minded corporate agents in Kenya from Q-methodology study.
- b) WB/IMF tried to force change in Kenya through denial of 'aid' and the appointment of a dream team that specifically targeted ICT and telecommunications sector for strategic intervention.
- c) Existence of many top-down donor driven ICT projects and programmes especially in the health ministry (MoH). The top-down nature implies an imperial attitude towards local capabilities.
- d) Development literature especially that emanating from IFIs, and global level development dialogue on the need for greater 'aid'.

Falsity

- a) ICT projects in the central government today are largely internally funded and rely on local expertise. Civil servants appear much happier since can

they plan with greater certainty. This does not diminish the value of proffered help; it is simply not critical to the project lifecycle.

- b) Many top-down ‘donor’ projects and programmes were found to have failed or underperformed, including telecenters and community ICT kiosks.⁷⁴
- c) The ‘aid’ comes in forms that compromise its utility. For example Terms of Reference were found to be over-specified⁷⁵ which limited local consultants with better grasp of local contexts. Disbursements do not match project schedules while much aid is tied to procuring contractual services in the country providing the funds. Further complex inter-donor politics, conflicting agendas and values compromise basket funding.⁷⁶

2. *Change is possible with a small committed group of reform minded persons (elitism)*

Evidence

- a) A belief of Afro-centric critical corporate agents in Kenya from the Q-methodology study.
- b) IFIs instituting an isolated ‘dream team’ to reform the government.
- c) Ambitious ICT reform initiatives by small interest groups and isolated ICT projects – GITIM, IFMIS.

Falsity

- a) Collapse of dream team arrangement from failure to garner popular support.
- b) Success of multi-stakeholder ICT process with crucial collective learning and critical turning points.
- c) Failures and delays for isolated ICT projects primarily because they do not generate enough awareness or broad support and thus encounter ‘resistance’.

⁷⁴ DA2

⁷⁵ PS1

⁷⁶ AC1

3. *ICT and E-Government should be priorities for 'developing' country governments today*

Evidence

- a) Official ICT4D policy for leading development agencies and IFIs.
- b) ICT4D literature and digital divide discourse
- c) ICT and Poverty discourse

Falsity

- a) Irrelevance or absence of many African government websites including Kenya for a long time. The key question is when they become priorities and their relative ranking amongst other needs, which is a matter of qualitative time (Kairos), and who makes that decision.
- b) Failure of community ICT projects whereas the putative beneficiaries appear not much at a loss. Innovations in mobile usage in Kenya show that priorities are defined from below in unexpected ways.⁷⁷
- c) Complexity of poverty-ICT links – These may need redefinition starting from users' ideas of needs and freedoms.⁷⁸

4. *Africa is inimical to advanced technology*

Evidence

- a) ICT4D literature and negative/primitive images of Africa (Honoré et al., 2002).
- b) Proposals for slimmed down versions of technology 'for developing countries' (These may also relate to perceived financial, skill or infrastructure adequacies which may be explained as in the section above on 'lack of').

Falsity

- a) Mobile revolution in Africa, observed in Kenya over the study period.

⁷⁷ EG1

⁷⁸ CS1

- b) Innovative use of advanced technology based on utility and relevance. E.g. providing timely flood warnings by SMS, Mobile money transfers.⁷⁹
- c) Respondents felt it best to borrow the best of both sides.

Once freed from false beliefs, agents and actors could move on to higher degrees of DCR in the resolution of ICT issues. The study shows that transformational change came only after agents apparently realized the falsity especially for numbers one (1) to three (3), either implicitly or explicitly. They started to act in harmony with real underlying mechanisms rather than ‘myths’. It opened the way for them to attain the third and fourth degrees of DCR when transformational change becomes evident in social systems and people.

9.2.2 3L: CRITICAL MASS AND TURNING POINTS

Depending on the issue at hand and how participants actually appropriate it, critical turning points observed during the change process may be understood as the attainment of *third level* (3L) of **dialectical totality** in the MELD schema of Dialectical Critical Realism. This is when contradictions are resolved by resorting to a greater whole following the dialectical process outlined in the previous section (2E).

The analytical account indicates that a conservative mindset dominated until about 2002 (Mid of Phase III) when critical movements in support of liberalization helped cosmopolitan-liberal ascent and into dominance by 2004 (Phase IV). They had to overcome embedded conservatism such as when the NCS held the conference to discuss a ‘confidential’ draft policy in August 2003 during the new open-minded NARC government era. ‘Ancient’ authoritarianism met ‘modern’ openness as an entanglement of *durees* in ideological time-space (Wallerstein, 1991, Mbembé, 2001).

Critical movements acted as midwife with material and ideational support from development agencies. The key players were IDRC KIP and the CATIA Project (KICTANET) that brought the government and private sector together; it may be said that they (Afro-centric critical movements) were dominant in the intervening period

⁷⁹ EG1

(2003). Critical agents do not accumulate material influence (power through the control of resources –economic, political) but prefer to convert others to their cause. In this respect they won since the progressive united multi-stakeholder process enshrined their values for fair play and equity, and they managed to reform the government towards greater listening. The private sector became conscious and aware of important issues not directly related to profit even as its profit oriented liberal agenda became dominant.

Civil society?

Yes, civil society.

Now that's another culture all together, it's another culture all together. When I was the chairman of Kenya ICT federation I reached out a lot to civil society because there are a lot of knowledgeable people there who are experts in issues that I haven't even been aware of were issues. Things like rights of access and rights of information and all these civil society wordy things that weren't an issue to me, and its not that I spend sleepless nights over, but I am glad that they do.

(PS1 CSOs Ref 2)

The Q-method study gives access to 'operant subjectivity', which means that the three ideologies are 'embedded' in the populace as operant conditioning. Logic would not suffice as persuasion; rather ingrained subjectivity (revealed from reflexive Q sorting) must be 'reconditioned' through interaction or other learning process. This is what happened in Phase III especially in 2003 described by one respondent and key actor as "one long workshop", after which the three orientations converged in what she termed a "tripod".⁸⁰ Cosmopolitan-liberals, Afro-centric critical movements, and like-minded primary agents within government and elsewhere underwent a period of collective learning and consolidation to build critical mass, and only then take on the establishment. It was a continuous opportunistic process:

Alright, I can see, I think I am getting the picture now...you deal with individuals, not so much...not a group of...but you hope with time there will be enough people who are....

⁸⁰ DA2

Critical mass, we hope for critical mass and therefore our job is to strengthen the good ones, the reformers...

(PS1 Emergent Change Ref 5)

The idea of *critical mass* leads on to that of *critical turning points*⁸¹ and how they come about. Several are clearly discernible in the morphogenesis of agency when presumed contradictions among agents were transcended and new consensual vista emerged.

1. Y2K cooperative effort

For the first time the private sector, government, civil society, NGOs, academics and consultants saw the need to work together. The ensuing harmony and resounding success generated infectious but short-lived enthusiasm for future cooperation.

2. 2003 KIF integration workshops

All stakeholders came to a similar level of awareness about ICTs, their potential, and the need for change.

3. PRSP ICT-SWG and ERS 2003

When at long last the private sector and civil society felt that their voice could be heard within government; they participated in actual shaping and drafting of government policy.

In each case we begin with primary and corporate agents in contradictory positions, whether real or imagined, and end up with the same agents but with contradictions largely resolved. Primary agents would have shrunk to join one of the corporate agents. Critical turning points would correspond to instances when the different agents agree on a possible future as though their subjective ideological time-space placements were temporarily aligned.

⁸¹ NVIVO node - **Key Events**

The findings suggest that change processes in such contexts would be characterized by such moments of cognitive and psychological ‘connection’ that mark graduations towards greater agreement and cooperation. The socio-systemic configuration gives rise to super-ordinate goals that require cooperation, and that begets such cooperation, as Sherif et al. (1961) discovered for inter-group conflict. Similarly, Merali’s (2000) *cognitive congruence framework* relates individuals’ self-concept to a dynamic schema as they enact scripts. She finds that individual and collective cognitive congruence are precursors for successful knowledge management processes. The organization acquires a congruent *organizational* cognitive infrastructure that leads to harmonious action to leverage capabilities.

Without such moments the current free ranging open discussions of ICT issues in Kenya would be inconceivable. Agents would still be locked in mental parochialisms founded on false beliefs that unfailingly generate contradictory positions in interaction as dualisms and binaries. DCR proves valuable here in providing a framework that captures change processes at a higher level of human achievement. The final stage explains the attainment of agency capable of continuous change towards greater freedom. This almost certainly includes material ‘progress’ in ICT4D that tends to get most attention within dominant approaches.

9.2.3 4D: TRANSFORMATIVE AGENCY

The final stage in Dialectical Critical Realism is the *fourth dimension* (4D) of **dialectical praxis** when agents attain capacity for *transformative agency* building on from the holistic realization at 3L (third level) totality. This stage may have been attained in Phase IV when some local agents begun displaying free autonomous behavior. This is significant for it addresses agency needs for ontological visibility necessary to begin participating in history, and hence real change can be said to occur from their perspective. Crucial to this transformation was resolution of identity conflicts that marked cultural elites in Phase 1. They were Africans but aspiring to western mannerisms and way of life. They looked down or demonized tradition, while continuing to benefit from it culturally and politically.

Agency and identity

Very influential to the ICT change process were the younger, well educated, and internationally travelled Kenyans that appropriate international values as part of the emerging global cosmopolitan society. This sense of cosmopolitanism also derives from socialization beyond tribes in cities, towns, universities and high school, which reduces or kills tribal feeling.⁸² Amongst these may be counted ministers and permanent secretaries in key ministries for ICT. But their appropriation of global values is selective; they realize that it is in Kenya that they must make their future despite their 'foreign', developed-world exposure. This would explain the spirit of confidence and self-reliance many displayed, as one respondent explained:

From your background even not just KICTANET or whatever; did you notice any time where Kenya started to feel more confident?

Yes, when we were about to get rid of Moi, when the opposition I think that was the way, when opposition finally learnt that the best way is to come together, and I think that the same wave that KICTANET is riding on, coalitions.

And that actually is a sort of self-reliance kind of spirit, which also implies...o.k. the leaders of that movement generally were very already travelled they have been all over...

...Well read, well travelled, they have their money that they are not going anywhere.

(CS1)

Getting rid of a dictatorial regime united them and gave them greater confidence and a stake in Kenya as a nation. Some respondents mentioned a reaffirmation of their black and African identity by a seminal experience of direct or institutional racism while abroad. They expressed surprise at the continued marginalization of black people and other minorities in western countries to which many Kenyans desire to immigrate:

Do you see like from your work with people does the people's cultural background enrich their contributions?

⁸² MF2

I think so, I think the more exposed people are, especially those who come back and invest, who go out there been exposed to other cultures and come back, I think those are the people who will actually bring more value. Because they come back knowing I have seen what it is and is not worth it being out there, because out there no matter how clever I am still black. I am still a savage I am still this, so home is where I feel...

(CS1)

Fanon (1986) theorized this experience: “As long as the black man is among his own, he will have no occasion except in minor conflicts to experience his being through others” (pg 109). So “the black man among his own in the twentieth century does not know at what point his inferiority comes into being through the other...” (pg 110)

Black persons in Africa have a normal sense of self worth; their ‘color’ has no special significance long after independence. However when they travel to predominantly ‘white’ western countries, proceeding with Fanon: “a white world bars Negroes from participation, a man was expected to behave like a man. I was expected to behave like a black man – or at least like a nigger. I shouted to the world and the world slashed away my joy. I was told to stay within bounds, to go back where I belonged” (pg 114-115). In some senses this is what happened, they have ‘gone back’, and can make a life without looking outwards.

Do you think it has to do with also...more Kenyans, it's actually liberalization, more Kenyans have travelled in the world and they come back, and they only to go once and when they come back they never want to go?

Yes, that is what is happening, there are more and more of us because of globalization who have gone out. It's no longer the privilege of a very few rich elite people, so there is more and more of us going out there, even if it is just for a month to visit to whatever, the world has literally opened up. And so then the realization that hey, no matter what, when you go the US, UK because I think those are the two places Kenya aspire to go to, we are still black. Even if you see African Americans on TV, you are still black, blacker than they, are coz you have no rights there. I think it loses...and so you have only those who are very extremely poor who still look at it and aspire to be there.

(CS1)

These sentiments suggest that part of the determination and energy seen in agent interactions derives from individuals that no longer seek external validation of identity. Identity conflict between westernization and traditionalism amongst educated Africans has always been a major theme in post-colonial literature from the tricontinental countries. Many Kenyans that have travelled internationally with opportunities at home appear to have no illusions about where they belong or want to be. So they are more assertive, self-confident and strategic in dealings with ‘foreigners’.

The same was reflected in statement scores from Q-methodology findings as shown in the table below. All responses indicate a strong desire for independence in policy direction. There is some support for the role of development partners from conservatives while liberals are ambivalent. Taken together with similar findings from case study interviews it is clear that the ICT community in Kenya conceives agency and identity differently from taken for granted assumptions that Africa needs and wants ‘donor’ assistance in ICT, or even ‘development’ in general.

No.	Statement/Factor*	1	2	3
45	Development Partners will play a critical role towards realization of development of the goals and objectives of the national ICT policy	0	1	-4
49	Africa has to foster in its population a spirit of looking for original technological solutions based on the socio-economic circumstances of people and societies instead of being a perpetual (indiscriminate) consumer of Western products and services	1	2	4
29	African social movements and progressive forces should free themselves from domination by the IMF and World Bank inspired policies by exploring strategies aimed at promoting a new kind of leadership able and willing to challenge these institutions in favour of genuine alternative development policies	2	3	4

*Factors: 1-Cosmopolitan liberal; 2-Conservative pro-government; 3-Afrocentric

Scale: strongly disagree (-4) to strongly agree (+4)

Locally, assertiveness serves to fight off remnants of authoritarianism from Phase I as was seen in the heated exchange between CEOs and the Permanent Secretary during the Media Owners Conference (in 2006 Phase IV). Their desire to be governed by law differs from Phase I and II when ordinary people had no stake in the common interest, signaling increased trust in Kenya as a nation-state and its institutions. So to understand interactions over the ICT policy and systems would include theorizing agent transformation to a new level of capability from personal and social perspectives.

Identity in contemporary Kenya appears to be a down to earth matter of making a life, colonialism is more history than a daily concern. Its remnants are weeded out through assertive behavior in the context of globalization. Local actors are not asking to be heard, they *make* themselves heard and felt, locally and internationally. Ambivalence concerning the colonialism is evidenced by realism about possible alternative histories. One respondent mentioned Zulus as an example that could have also ‘colonized’ Africa, similar to the rise of nationalism and the suppression of minority groups in European wars of nation formation.⁸³ Agents are no longer looking to the past but appear to have escaped their ‘colonized selves’ as it were, and are more concerned with charting out a viable future without looking to their former colonizers for assistance or validation. They had to come to terms with their own past and history, and its inscription in modern society through continued material and ideational domination by their former colonizers to arrive at this state. Part of this involved taking certain ‘risks’ for ontological recovery as described in the next section.

Ontological visibility and ‘Actional men’

During morphogenesis of agency there was a progressive de-linking of local agents from global actors and agents (foreign governments, IMF/WB, ‘donors’ and development agencies) to the point where local funding and leadership became the lifeblood for the ICT policy process and E-Government projects. At this point when local agents were cut off from ‘neocolonial apron strings’, they come to their own as

⁸³ CS1

autonomous agents. Having fulfilled the conditions for ontological visibility by risking life, so to speak, they could move on as what Fanon (1986) terms *actional* men.

Global capital failed to break the ruling clique's hold on power despite withholding 'aid' for many years. The standoff continued even with the new government. Faced with the choice between continued tutelage waiting for 'aid' (conditionalities, grants and loans), or freedom without it, Kenya chose the latter course. The public supported the government despite serious and well-substantiated charges of corrupt practices by western powers; it was a matter of national and individual survival. A well-up of nationalist sentiment and pride was fuelled by WB/IMF high-handedness and the non-diplomatic approach and language the British High Commissioner chose when dealing with the crisis.⁸⁴ The upshot was increased self-reliance in and outside government, and subsequent growth of capacity for autonomous agency in Phase III and IV. Both phases correspond to periods of morphogenesis and rapid developments in culture and structure in Kenya's ICT4D and E-Governance.

Increased capacity for autonomous local action signals third-world 'subalterns' in ICT that have just woken up to ontological visibility, restored to history to some degree. Events in the analytical narrative suggest that taking this one step was more important than all other 'ICT problems' cited for a postcolonial developing country like Kenya. When agents acquired autonomy of thought and action, the 'pulse of freedom' took over to 'absent absences' they themselves considered necessary. They could even employ positivist ICT approaches to their own ends without the danger of epistemic violence unlike when it is done from without. A senior ICT officer captured the transformation concisely for ICT project planning:

...No they are, but our planning does not actually give that recognition, that you know we look like we are spending money this year but you are not actually looking at like for instance if you are putting an infrastructure we are actually costing that for this year but then we actually tend to forget. In fact such a cost should be distributed in the entire life of that infrastructure and

⁸⁴ DA2

therefore you actually depreciate it as time goes and also we evaluate what returns you actually getting it vis a vis alternatives you are...

Looking at ICT as an investment as such is actually what would discourage us from relying on donors because we actually look at just the initial cost outlay which is wrong, this thing should be distributed in the whole life cycle of the project and we should also be able to look at the maintenance cost and factor them within our budget.

(EG3 Interview)

Instrumental rationality becomes a tool for this respondent rather than a master-template. The presence of 'donors' appears to *prevent* rational behavior (linking inputs to outcomes) by local agents. 'Aid' for a project now due for repayment decades ahead encourages sloppy costing, budgeting and planning, and hence the cycle of dependency. For example in the MoH strong donor presence and funds prevented or caused local actors to desire irrational rather than rational systems. Stronger strategic leadership from within would have checked these tendencies, as it is 'donors' simply pursued narrow interests with the connivance of local actors:

You may blame the donors, but along with what you are saying, I also blame the government because we could have at least a proper way in which these donors can channel their programs.... ...if you have an ICT champion within the government, then any ICT issues to any particular ministry should actually be channeled through that ICT champion, but because of the lack of it, the donors were just going to the individuals and therefore they can be able to party to their own interests.

Are you aware of theMinistry of Health?

The Ministry of Health, not quite except that they, it emerged that because of the resources which were being availed to different small departments, those who were seconded there were actually happy because they were getting extra perks from those particular donors, they were not willing to have a unified local area network within the Ministry of Health because this would then cut in to what they were enjoying, I don't know if you understand what I am saying?

So do think the seconded personnel wanted to retain the division?

Precisely.

Because they get benefits?

They get benefits, on top of their salaries they actually get allowance, they are not even able to share their data by other people, so you find the demographic surveys which were being done by different people were being done by different people within the same ministry, they do the same demographic survey because that which is available elsewhere cannot be shared by the rest of the group.

(AC1 Interests Ref 1)

In contrast, in the MoF where donors are less prominent, project needs and pace of change are now defined locally and appear better tied to realities that would check on inappropriate technology transfers, or technology for its own sake.

We started somewhere which is not advanced, and we are being compared say to America, is it sensible to make such a comparison?

No, absolutely not. Because look at even what we do...talk about eCommerce, what is it that we do? We do not want to push technology for technology's sake, we must answer specific needs of the people, so how I look at it is that we look at the people, if they are very curious for example, then we can ask how can you benefit from that online? You must start from where the people are, and the product they are dealing with, and then move on from there. If you say you want to bring in new knowledge to take over overnight, people will ask the technology is for whom? So there is this problem sometimes, we design systems for people we are not involved with and think we can succeed. We have not integrated the working of the people we want to change.

(EG1 Emergent change Ref 8-10)

Diffusion oriented IS/IT approaches privilege technology over the usage context, we notice that free agency questions this assumption. In Kenya's E-Governance it emerged as preference for evolutionary change, and privileging local needs over high-technology or the availability of funds. The transformation described here cuts across all agent types and groups – government, private sector, CSOs – indicating that it was Kenyans in a general sense that changed not just some groups. Indeed we can see immediate outcomes for Kenya ICT that may be associated or attributed to an *actional* stance.

- a) Kenya chose to start a parallel independent fiber optic cable project to avoid getting enmeshed with South African ambitions to dominate Sub-Saharan Africa through the NEPAD⁸⁵ led EASSy project. In the 2007 budget it received a substantial budgetary allocation signaling serious government commitment.
- b) The rollout of internally funded E-Government network infrastructure to all ministries is proceeding steadily when compared to funded ‘donor’ projects like IFMIS that have had serious bottlenecks.⁸⁶ All human resource officers interviewed were *very* happy (given where they were coming from) with the in-house developed IPPD payroll system despite it’s not being state of the art.⁸⁷
- c) In 2005 the Kenya Revenue Authority successfully and in only nine months installed a customs and port clearance system sourced from Senegal, a fellow ‘third world’ country, apparently against the wishes of development ‘partners’:

Subsequently, reluctant partners and faultfinders began to give credit to the project, as the positive echoes thereof have gone beyond the frontiers. The then World Bank Representative in Kenya, Mr. Moutar DIOP of Senegal, even visited the KRA Office to inquire about the evolution of the project, which was somewhat indicative of the interest of international financial institutions in this endeavor (Diop, 2005:7).

It was billed as a great example of south-south cooperation; clearly a pun at foreign development agencies that may still imagine African countries cannot co-operate to execute complex projects. The report documents ‘donor’ uncertainty when dealing with independent ICT project success in ‘developing’ countries.

Whether the cultivation of free, autonomous, *actional* behavior will be sustained remains to be seen. The World Bank apologized for its ‘mistakes’ and gave Kenya new financing including participation in the regional IFC backed terrestrial cable

⁸⁵ NEPAD has been widely criticized by African scholars as an exogenous agenda for the continued western domination of Africa. See ADEDEJI, A. (2002) From the Lagos Plan of Action to the New Partnership for African Development and from the Final Act of Lagos to the Constitutive Act: Wither Africa? *African Forum for Envisioning Africa*. Nairobi, Kenya, 26 - 29 April 2002.

⁸⁶ MF5

⁸⁷ MF4, MH2

project. ‘Donors’ became more forthcoming and willing to provide finances whereas previously they could promise and simply not deliver. It may be a strategy for IFIs or donor agencies to recover lost influence. It is also possible that they are regaining some of their ‘humanity’ (lost when they ‘dehumanize’ others) as Freire (1972) suggests would happen.

9.2.4 ‘WHAT DEVELOPMENT MAY MEAN’ IN ICT4D

Development and technology transfer dialogue

The dialectical critical realist interpretation presented above presents a perspective on what development may mean from a postcolonial country/person point of view.

Walsham’s (2005a) ‘polemic’ reflections on development and ISR cited the need to reconsider the aims of development and critical ISR with an improved understanding of humanity and their real needs, beyond the material to moral, ethical and spiritual ones. Sen’s (1999) alternative capabilities approach to development as freedom features in several ICT4D frameworks and studies (Macueve, 2008, Madon, 2004, Zheng, 2007). He conceives development as acquiring capabilities to remove constraints to various freedoms. Of significance to developing IS frameworks are instrumental freedoms considered necessary for development, i.e. political freedoms, economic facilities, social opportunities, transparency guarantees, and protective securities. However the growth oriented materialist paradigm still dominates international development policy. Though it is often criticized from Marxist, structural sociology and postcolonial critical perspectives, alternatives to it are harder to come by (Schech, 2002).

The international development and technology transfer dialogue greatly influences the flow and uptake of ICT innovations in developing countries. Paulo Friere’s work in adult learning is relevant to development interventions between non-equal partners such as the richer developed and poorer developing countries to foster genuine dialogue and real change. It has been widely applied in education reform and in conceptualizing development cooperation (Olsson and Wohlgemuth, 2003a, Freire, 1972).

Dialogue is defined as “the encounter between men, mediated by the world, in order to name the world” (Freire 1970:76 in Olsson and Wohlgemuth (2003b:190). It involves information exchange, but cannot be reduced to information exchange and its techniques; rather it is praxis, involving both action and reflection as collaborators construct the world together. It is not possible when one party imposes their will on the other, or denies by any means the right to speak their mind (Olsson and Wohlgemuth, 2003b). First is the need to have learners attain critical consciousness which relates to the content of knowledge, how valid is it to the situation? Second is the importance of cultivating genuine dialogue during interactions that also transfer knowledge. Non-genuine dialogue fosters for the maintenance of myths and false beliefs that serve the interests of dominant groups (Mejia, 2004).

Myths and false beliefs

A key problem then becomes how to avoid in any way fostering and maintaining myths and false beliefs in development dialogue. Two obstacles may be the institutional structure of development and the socio-cultural and psychological effects of colonialism. The present global institutional structure for development research and education may be a major contributor to sustaining a widely criticized paradigm. Brohman (1995) argues that through the socialization process at elite western universities, development professionals, even from the south adopt a worldview that gives primary importance to acquired ‘objective’ methods:

This seems to be particularly the case among Third World professionals within multilateral institutions such as the IMF and the World Bank and other elitist organisations of the global development community. These professionals tend to see their role as one of using their specialised knowledge in the concepts and methods of (Western style) development to instruct and guide Third World countries that are incapable of generating their own knowledge. The firm belief in the need to instruct and guide the ‘Third World other’ may be regarded as one more reflection of a much broader ethos of Occidental supremacy’.

Brohman (1995) adds a structural dimension that an ethnocentric and ideological bias that serves western capital is concealed under this veneer of objectivity. Ongoing intellectual and ideological battles within international development agencies like the Organization for Economic Cooperation and Development (OECD) or World Bank

are usually hidden from public view (Godin, 2004, Wade, 2002). By the time ideas like ‘new-economy’, transparency and accountability in governance get to the tricontinental countries their critical appraisal may be impractical without the story behind their emergence. This would amount to knowledge imposition through inequality in development policy dialogue (Edgren, 2003, Mejia, 2004). Government technocrats and bureaucrats may only be too grateful to receive what appear as progressive ideas for incorporation into development planning. It is left to civil society organizations interested in human rights and equity to bring attention to any anomalies through advocacy (Mueller et al., 2007).

At the individual level we saw in Chapters 3 and 4 that complex individual and group identities in modern Africa are a major consideration when theorizing change. The very possibility of subaltern and postcolonial subject agency is contested (Shohat, 1992). Slippery, reflexive, postcolonial identities are juxtaposed with traditional ethnic, communal, and the emergent global network based cosmopolitan identity amongst the Internet aware youth and urban dwellers (Mbembé, 2001). An important issue to developmental interventions is the capacity to participate for persons that only exist as referents, as an ‘Other’ or ‘Object’ in development discourse. Such are effectively outside history from an ontological perspective (Fanon, 1986, Goldberg, 1996).

Emancipation and freedom

Like Sen (1999) the proposal outlined here also has freedom as axiological dimension. It draws from a particular postcolonial critique of modernity and empirical findings evaluated using dialectical critical realism. It points to conceptualizing development in ICT for development initiatives in postcolonial developing countries as a dialectical process towards the attainment of transformative agency; individuals acquire autonomy and are no longer ‘objects’. A major contributor to this change was getting rid of false beliefs by agents.

Development conceived as a dialectical progression towards greater freedoms involves confronting and getting rid of myths and false beliefs about the world, and about ones own capabilities and relationship to the world. ICT4D discourses and

development institution structures may propagate and sustain myths and false beliefs that constrain people's ability to confront reality. The opportunity and need to confront and get rid of myths and false beliefs may arise circumstantially but appears related to structural constraints that force choice. In Phase III Kenya was isolated by development agencies but apparently survived. Certain beliefs such as the need for donor assistance, the importance of ICTs, elitism and technology and Africa appear to have been overcome. This opened the way for local agents and actors to actually confront reality as never before. Increased local financing provided backing for initiatives to reduce dependence on foreign sources, which may also be understood as an 'economic facility', one of Sen's (1999) instrumental freedoms.

Our findings on false beliefs and freedom may rationalize and extend findings from two contextual ICT4D studies. Madon's (1994) interpretive work in ICT4D found that technology reinforces existing inefficiencies in the bureaucracy, and that technology cannot change long established ways unless the underlying ideology is changed to one emphasizing orientational and individual initiative. We note the ascent of a cosmopolitan-liberal ideology that requires orientational (or strategic) behavior on the part of agents. Second was the attainment of transformative agency after agents came to terms with and got rid of false beliefs, which would lead to their showing greater initiative. This understanding may provide the rationale for Madon's (1994) findings by linking agency more closely to structure.

Avgerou and Madon (2004) proposed a notion of framing for actors sense-making and calculated behavior to yield new insights. We may relate framing in Avgerou and Madon (2004) to thinking beyond non-identity (alterity) to negativity (absence) in dialectical critical realism. Framing examines actors in their context to yield new insights for greater understanding. Taken to its limit it would yield contradictions in the social system that may arise from engendered false beliefs.

An important postcolonial critique of development and developmentalism is that they elide colonial history (Biccum, 2002), while colonialism had earlier 'expelled' tricontinental country peoples from history through violent dispossession (Fanon, 1986). Emancipation and freedom therefore become prerequisites for real change that

would only occur after persons are restored to history as *actional* men. The latter periods in Phase III and Phase IV are therefore characterized by an explosion of locally driven constructive ICT activities involving individuals, government, development agencies and other interest groups.

Development interventions undertaken before this stage in the morphogenesis of agency would likely be serving purposes centered elsewhere. If development purposes are divorced from local people and context it may acquire an instrumental character. Participatory approaches and capacity building in ICT initiatives developing countries may therefore be perceived as efforts to mitigate such disconnection. From the study findings, persons restored to history display free autonomous behavior that includes using technology and methodological techniques in a more limited sense as tools rather than as templates in charting ICT4D transformational change. They do not pursue technology for its own sake nor do they subscribe to instrumental rationality as the one way to progress and development. Rather they behave and act strategically by confronting their own reality, assess their own capabilities and take appropriate measures or actions. These may include partnering with foreign entities on a reciprocal basis rather than as donors and recipients.

When local actors adopted this *actional* stance, ‘donors’ reciprocated. The World Bank apologized to Kenya for its ‘mistakes’ in development related policy decisions signalling a new era in ‘donor’ relations. A similar change towards reciprocity was observed between CSOs, NGOs and their financiers. Preference for the term ‘development partners’ over ‘donors’ in development circles reflects this overall shift

Identity recovery and ontological visibility

The capacity to confront reality would be constrained in postcolonial peoples by their status as an Other, an object rather than subject in social reality. Freire (1972) observed that some would therefore be afraid of freedom while others, better prepared, and with a greater desire for it, ‘risk freedom’. By risking freedom, so to speak, such persons reconnect with history in an ontological sense. My respondents were an elite group that had better education and exposure to the west through

international travel and interaction. In general they displayed a great sense of awareness and comfort in their identity as Africans, also as Kenyans. However, as one respondent pointed out, globalization has availed similar opportunities to many ordinary Kenyans many of whom now have less illusions (myths) about life in developed countries.

A quest for *identity recovery* and *ontological visibility* would be at the core of tricontinental peoples' struggles in today's globalizing world yet increasingly divided and unequal world (Castells, 2000a, Castells, 2000b, Castells, 2004). States whose recent transition to modern societies appears more successful such as Japan, Singapore, South Korea and even China have their own epistemologies popularly summarized as 'Asian values', 'Japanese management' etc. (George, 2000). Their appropriation of western knowledge is selective.

A dialectical approach to development

A dialectical approach to development as described may be appropriate to meet the needs of marginalized peoples in the tricontinental countries. Cole (2005), reflecting on the burden material progress puts on the world's poor argues for a dialectical approach to development stating: "Effective knowledge can only be created by people themselves reflecting upon their experience". His paper is titled "The last putting themselves first", making clear the thrust of his argument for a development conceived and implemented by persons in such regions and conditions, for themselves.

Evidently such gains can be reversed or compromised depending on contextual and structural realities, and individual reactions. Some may prefer to remain closely associated with external 'masters' for various reasons, including selfish motives or the fear of freedom (Freire, 1972). These are issues whose further exploration may involve other disciplines such as psychiatry and psychology.⁸⁸

⁸⁸ See FANON, F. (1967) *The wretched of the earth*, Penguin. Frantz Fanon was a doctor and psychiatrist, and is a major postcolonial theorist. He formulated some of these concepts while working on patients and prisoners with mental problems during the Algerian war of liberation from French colonialism.

A limitation of this conception of development is the implicit association between personal freedoms and the liberation struggle by nation-states. The validity of such association requires further research given the arguments against the artificial nature of postcolonial states and a globalizing horizontal networked world. (Castells, 2000b, Castells, 2004) They have been construed as failed colonial projects or experiments that group disparate communities into collectivises that then try to become a nation within a defined global order (Dawson, 2004, Rivero, 2001). But since development policy and planning are largely state centred there may be good reasons to associate national subjugation to individual freedoms and the formulation may hold to some extent.

9.2.5 ICT PROJECT SUCCESS AND FAILURE

The social construction of success/failure

Wilson and Howcroft (2002) classify perceptions of failure from the project, system, and user perspectives to illustrate that there is no consensus on what IS failure is in the literature. Using the social shaping of technologies approach (SST) that conceives technology as socially shaped, they conclude that failure is better understood by examining technology as a process in a context over time, including the use deconstruction in analysis to access hidden stories. The failure/success duality is related to relevant social groups, and interpretive flexibility, such that ascription of failure is a social process rather than an outcome of technology. Power relations may serve to legitimate certain perspectives in the social construction of success or failure.

A failure-success categorization for ICTs in developing countries is heavily implicated in dichotomous conceptions of reality, including the developed-developing country binary. It was identified as the ‘problem-paradigm’, and a ‘reductive repetitive motif’ of failure in development discourse and ICT4D research and practice (Andreasson, 2005, Oguibe, 2003, Riley and Sheridan, 2006). Diffusionism locates technology problems in recipients as a rhetorical device to maintain the centre’s discursive integrity and ideological dominance (McMaster and Wastell, 2005). Perceptions of ICT failure in developing countries may therefore be an outcome of

broader social processes rather than of special conditions in developing countries in relation to technology innovation.

Autonomy and failure/success criterion

We adopted a longitudinal research design for this study, which allows as us to re-examine failure in Kenya E-Government ICT projects as a process in its context from the dialectical critical realist perspective. Our research findings indicate that perceptions of failure change as morphogenesis of agency proceeded until the attainment of transformative praxis in Phase IV. By Phase IV ICT actors in Kenya were questioning the meaning of success and relooking at projects from a more contextual perspective.

With this perspective on social reality and the ‘problem paradigm’ classified as a possible myth, two difficulties observed in ICT4D in Chapter 3 may be resolved:

- a) Bada (2002:85) posed as a key issue for Gap Analytical approaches: “how can we manage and exploit contradictions or discrepancies arising from the persistence of local ways of life when implementing global techniques in developing-countries contexts?”
- b) What are the appropriate ‘analytical initial conditions’ in tricontinental country contexts? Gap Analysis starts with a proposal from the design context and adapts it to the usage (developing country) context.

Consider in Table 3-2, “*Lack of funds*”. In DCR this statement is defined in terms of alterity or **non-identity**, which differs from its **negativity**, the *absence* of funds. Resolving ‘lack’ by providing funds to plug the hole would be a reactive gesture, as opposed to ‘absenting the absence’ of funds. This corresponds in DCR to moving on from the dialectic of non-identity (1M) to that of negativity (2E). The latter framing appeals to a broader set of possibilities, which include but exceed the immediate ‘lack’, located in the direction of greater absenting of ills, i.e. towards freedom. It may for example call for better financial management or better tax collection as appears to have happened in Kenya. This perspective dialecticizes research enquiry for greater ontological dimensional awareness to re-frame even ordinary project

issues. It would promote innovative approaches to exploit apparent contradictions in developing country contexts.

The appropriate analytical starting point would be that which promotes greater freedom. From the user or project owner's point of view, *lack of* infrastructure or *lack of* skills cannot be problems for a prospective ICT project. This is simply because the present configuration in the supply of such resources in the social system ought to be the logical starting point to framing interventions. If for certain a reliable electricity supply is crucial, logically we may for example design it into the project, seek alternatives, or drop the project altogether. To include the absence of a proposal in its own evaluation would be a marker of freedom from myths about technology and human development. Implementing technology for its own sake as technology diffusion approaches tend to may become less common. The range of alternatives available to approaches that begin elsewhere is limited to *alterity* or other, which is a variant of one theme at the origin. In contrast, those founded on absence or negativity give rise to new themes and their variants, hence greater freedom.

Lists detailing 'lack of' as problems point to weaknesses in project conception and execution. This is listed as factor number 13 in Table 3-2, which if attended to would address many of the others. Structural and infrastructural issues may be addressed during design. Social and human issues are part and parcel of the project environment within which we must work or possibly change through strategic action as described concerning the broader ICT4D context. Dialectical critical realism may provide new perspectives on culture and agency to make this easier. The difficulty is to identify them in advance without falling into the trap of negativity, that we must have A, B, or C or else it *can't* work. Framing issues in terms of deficiencies alludes to self-pity and is part of the dependency syndrome in postcolonial societies encouraged by the foreign aid culture (Amselle, 2003, Fowler, 2001).

The change in agent behaviour by Phase IV could have resulted from successive reframing and action termed absencing of absence in dialectical critical realism to get rid of false beliefs. Beliefs about high technology and priorities in relation to local needs, appropriateness, financing and implementation pace were re-examined. A

‘slower’, evolutionary pace of E-Government became acceptable within government than the private sector, civil society, and development agencies outside would have preferred. Internal demand by civil servants (users) was considered more important. ICT project actors in the public service stopped accepting technology for its own sake, and preferred non-state of the art systems as long as they felt happy about them. Such projects would from certain instrumental perspectives be perceived as failures.

Failure and the broader context

It was observed that presence of ‘donor’ funds generates and reinforces behavioural and work patterns detrimental to good project performance. Donor assistance to avert underperformance and failure in ICT projects would appear to be a self-fulfilling prophecy. Projects financed with grants and long-term concessional loans are delinked from their immediate context because any actions have no immediate consequences. Our research findings suggest that this promotes an infantile attitude towards project management by hindering rational behaviour that would have ICT project actors’ link inputs to outputs as a matter of necessity. Weaknesses in project management and sustainability are often cited as major problems in developing countries (Bhatnagar, 2002, Ciborra and Navarra, 2005, Kimaro and Nhampossa, 2005).

A related factor is that donor project funds are a relatively large sum to a bureaucrat in a developing country. Together with their complex financing mechanisms, they attract corruption and patronage networks linked to powerful individuals in government and business with access to power and privileged information. The massive systemic dysfunctions observed in the heavily donor funded health ministry institutional and ICT systems are a good illustration. Projects in the internally funded finance ministry were perceived as better performing.

This perspective relates and extends IS research understanding of failure to external actors in the broader context (identified in this study as development agencies and workers, politicians and top bureaucrats) that shape the overall landscape for project execution. Although failure and success may be socially constructed (Wilson and Howcroft, 2002), developing country actors capacity to participate in such

construction may be better understood in relation to identity recovery and ontological visibility as autonomous actors. The simple fail-success criterion breaks down for autonomous actors that actively shape their contexts and associated discourses. Conceptualizing agency and its morphogenesis up to and including transformative agency would therefore be an important consideration in the design of ICT4D projects and programmes in postcolonial developing countries.

9.3 OBJECTIONS, ISSUES AND LIMITATIONS TO A CRITICAL REALIST APPROACH

The discussion of findings first covered the Morphogenetic analysis of Kenya's ICT process and made suggestions about the broader (strategic) context including its possible constitution and management. Morphogenetic analysis was then evaluated as a form of strategic analysis, and how to factor in time into integrative ICT frameworks for developing country contexts. The second part is a reading of the analytical narrative using dialectical critical realism and the postcolonial critique of modernity. This informed our findings about a dialectical approach to development and its aims, and the significance of ICT project success and failure in postcolonial developing countries.

I now wish draw attention to some objections, issues and possible limitations to these findings arising from the philosophical approach. As mentioned at the outset Critical realism makes bold claims that have proved controversial. Additional practical methodological issues are discussed in reflections in Chapter 10.

9.3.1 SOME OBJECTIONS TO CRITICAL REALISM

Critical realism and associated methodologies have many critics as they challenge many existing philosophical paradigms. Bearing in mind that some confuse critical realism with naive realism it does not always get proper hearing, while others are misdirected for non-familiarity with the whole body of writings (Sayer, 2000). For example Kemp (2005) suggests that social science should take a cue from

evolutionary biology rather than physics or chemistry, whereas Bhaskar's (1986) discussion of the TMSA posits evolutionary biology as an analogy for social change.

The main objections to critical realism centre on the ontological status of social entities and causality. Cruickshank (2004) turns one of its favorite tools, the immanent critique on critical realism itself with the conclusion that there is slippage between two ontologies, one on the transitive and the other on the intransitive dimension as it pursues its "hegemonic project" to "conceptually re-tool the natural and social sciences" (pg. 567). The critique does not entail dropping critical realism but is an invitation to dialogue on the status of social ontology. Both Nash (1999) and Varela (2002) call for a modest form of realism in view of the problematic social ontology.

Against ontology following Wittgenstein, Kivinen and Piirainen (2004:238) argue that "...ontology is a language game played by a certain breed of philosophers, most of whom call themselves realists....", and that it has no bearing on social science. Realists are accused of searching for 'truth', things in themselves. Kivinen and Piirainen (2004) see critical realism as the futile pursuit of the one correct description of everything, which must itself lie outside the set of all possible descriptions. However as earlier explained critical realism accepts epistemological relativism, what is sought is always a fallible account of reality. A similar argument by Fay (1990) is discussed in Cruickshank (2002).

Within information systems, the critical value of Monod (2004) and Klein's (2004) responses to Mingers (2004c) proposal for critical realism as underpinning philosophy for IS research was again limited by non-familiarity with realist literature (Mingers, 2004a). While Monod (2004) vigorously defends Kantian idealism against critical realism's challenge to *The Critique of Pure Reason*, Klein (2004) finds it is a better synthesis of the post-positivist tradition because it includes aspects of hermeneutics

but with an outdated socio-theoretic base. He agrees with Cruickshank (2004) on the need to clarify the dual ontology.⁸⁹

Critical realist writings especially Bhaskar have been classified as difficult, they introduce many neologisms and new concepts while existing concepts may get a whole new interpretation (Mutch, 2002). Critical realism's ontological perspective raises significant philosophical issues for social science and that may also lead to misunderstandings. Some are outlined below to help clarify some of the objections raised above and what they mean for the research findings.

9.3.2 PHILOSOPHICAL ISSUES AND LIMITATIONS

Dean et al.'s (2005) introduction to critical realism outlines four areas that raise significant questions to social science research relevant to the objections cited above. These are critical realism's 'underlabourer' status; the relationship between dialectical critical realism (DCR) and critical and poststructural theory; DCR's account of freedom and universality; and the relationship between critical realism and meta-reality (the spiritual turn). I will outline the first three and how they are reflected in this study as I did not use any concepts drawn from the fourth moment of critical realism (the spiritual turn).

Philosophy or social theory?

Transcendental realism was conceived as a philosophy for science, as 'underlabourer' for science. This perspective sustains a distinction between philosophy and scientific practice and inference. With the second moment as Critical naturalism, the distinctions between its role as philosophy and as social theory start to blur. Normally social actors use philosophy to link concepts while philosophers' concepts are socially loaded. I used Archer's Morphogenetic approach that was developed from sociology. Analytically it is equivalent to Bhaskar's Transformational Model of Social Activity but much better elaborated (Archer, 1995). This raises some questions about the

⁸⁹ These issues were raised early in the debate. In the postscript to BHASKAR, R. (1998) *The possibility of naturalism : a philosophical critique of the contemporary human sciences*, Routledge. Bhaskar responds to some who acknowledge its worth but question some issues such as the ontological status of social structures and usage of the intransitive dimension.

relation between philosophy and social theory for the first part of the discussion, mitigated though by the fact that TMSA was not meant to be a fully developed social theory. The methodology does not invite much philosophical reflection since they are practically one and the same thing. It was possible to make practical inference concerning the broader ICT4D context directly from the analytical narrative because it is supposed to reflect actually existing (real) generative mechanisms. This may explain why some social scientists accuse critical realism of 'hegemonic' aspirations (Cruickshank, 2004). IS researchers would have to make individual decisions as to how much to buy into the claims of critical realism and its possibilities because associated methodologies may not provide much room for philosophical reflection. I drew on additional literature on social realism for a comprehensive body of social theory compatible with critical realism.

Emancipation and universality

Bhaskar (1993) developed DCR as a new approach but preservative of Critical naturalism (preservative sublation). I elected to gain further insights by using DCR in reading the analytical narrative. With DCR there is practically no distinction between social theory and philosophy. The dialectical reading of the analytical narrative was a direct application of philosophical concepts as social theory. DCR critique's existing philosophical systems for ontological monovalence (flat ontology of events and experiences) to propose additional ontological dimensions, for example instead of alterity we have a new category negativity. Accepting this critique entails accepting generalized master-slave relations as historically constituent of human society. DCR is an elaborate analytical framework that includes claims about primacy such as that of absence over presence, negativity over positivity and a universal ethics. A researcher's dilemma is whether they have to accept it all because it is a complete schema for societal change and transformation. For this reason findings from the second part on development and success and failure were presented as tentative, and with full awareness of prior commitment to freedom. The postcolonial critique and evident material conditions of poverty, underdevelopment and histories of violent dispossession was used to bolster the argument for emancipation as an existential requirement for postcolonial developing country populations.

Contingency and social ontology

Dean et al. (2005) compare DCR to Theodore Adorno's negative dialectics and Jacques Derrida's deconstruction that share a similar critique to ontological monovalence in objecting to a purely positive account of the world. They suggest that DCR's focus on ontology rather than epistemology as do Adorno and Derrida leads to richer conception of reality and the possible. DCR retains the three layered social reality consisting of the real, the actual and the empirical. The domain of the real in DCR "includes the possible and the actual with the possible a ground of real potentialities whether or not they are actualised." According to Dean et al. (2005) Michel Foucault may with this perspective be said to commit a philosophical actualist error by reducing power to its exercise, i.e. the real to the actual.

As noted in Section 9.3.1 above, the ontological status of social entities has raised strong reactions from social scientists (Cruickshank, 2004, Nash, 1999, Varela, 2002). Poststructuralists would object to critical realism's commitment to social ontology since they do not commit to ontology though it may be implied in their works. Dean et al. (2005) distinguish between the critical realist and poststructuralist notions of contingency. Contingency in poststructuralism means that no firm claims about social reality are possible, whereas in critical realism it is better understood as historical specificity. Historically specific conditions differ in the sense that may be investigated further because they are relatively enduring. Critical realism is therefore compatible with poststructuralists about the transitive dimension (knowledge about reality) through epistemological relativism while retaining a strong commitment to social ontology (reality exists apart from our knowing it).

This understanding of different notions about contingency and social reality may explain some of the controversies concerning social ontology and the efficaciousness of social entities as causal agents. The poststructural notion of contingency entails *judgmental relativism* whereby any judgment is equally valid. Epistemological relativism in critical realism is constrained by the intransitive dimension of real mechanisms, which calls for *judgmental rationality* (Bhaskar, 1993). Judgments about epistemological entities are made upon examining underlying mechanisms so that not all judgments are equally valid. Judgmental rationality allows for the concept

of generative causation to be extended into analysis of causal capabilities as tendencies in the development of explanatory critiques (Bhaskar, 1998, Collier, 1994). This is acceptable to the extent one commits to moral realism and ethical naturalism that underpin DCR.

Critical realism therefore synthesizes or reformulates many philosophical traditions in a schema that some find useful while others may object to certain claims (Klein, 2004, Dean et al., 2005). The objections and philosophical issues just outlined are not exhaustive but may help us better contextualize findings from this study in existing scholarship.

CHAPTER 10 REFLECTIONS ON THE RESEARCH PROCESS

Chapter 10 is reflection on the research process to highlight important theoretical, methodological, and practical aspects of the study. We evaluate the research conduct and findings for both Parts 1 and 2 in the context of existing scholarship, research limitations, research tools and support.

10.1 METHODOLOGICAL ISSUES AND LIMITATIONS

10.1.1 CRITICAL REALISM AND THE MORPHOGENETIC APPROACH

Scoping and research aims

The decision to buy into or reject critical realism's philosophical premises is personal and will influence how one scopes and conducts research. My background and experiences in a 'developing' postcolonial country influenced the study's scope and aims. Critical realism's premises concerning freedom and emancipation become important considerations and even crucial to ICT4D projects from this perspective.

The two empirical studies encountered in the literature relevant to information systems research 'used' M/M without reference to higher level moments of critical realism (Trosper, 2005, Wong, 2005). M/M corresponds to the second moment, Critical Naturalism; we included the third moment, Dialectical Critical Realism that pays greater attention to agency and its development. Our understanding was enhanced by Archer's more recent works in social realism (Archer, 2000, Archer, 2003) and triangulation with Q-methodology. Undertaking research without a relatively complete grasp of the critical realist movement is likely to miss its ethical dimensions like emancipation and human freedom. If one decides to leave out certain moments as I did with the fourth (the spiritual turn), the researcher's position on moral or ethical issues involved ought to be made clear. Without such clarification the research may appear instrumental or formalistic as explained further in the next section.

Critical realism opens up many issues and avenues of enquiry that could not all be explored exhaustively. Multidisciplinary teams that go beyond contributions to information systems have been suggested as desirable for ISR in developing countries (Walsham and Sahay, 2006). For example transformational agency relates to people in their totality, so I touched on identity because it is a major theme in postcolonial theory. Input from other disciplines such as psychology and anthropology would enrich the findings.

'Applying' Critical Realism

Collier (1994) argues that we cannot 'apply' critical realism instrumentally as it would lead us into the same conceptual trap as positivism. Effectively we would be imposing a fixed conceptual scheme on reality that runs against the spirit of openness and discovery implicit in realism. To this extent Jessop's (2005) and Zeuner's (1999) critiques (Chapter 5) of M/M for apparent formalism would be justifiable. It is a criticism moderated by the fact that analytical histories of emergence are specified empirically and thus fallible. The approach may appear formalistic but the outcome is not static but contingent upon available data or information. Our concepts and theories are refined continuously as we get a better account of underlying mechanisms.

Retroduction involves transcendental deduction from observed events to come up with the conditions for their possibility. During construction of the analytical narrative it was occasionally felt as though we were forcing events to fit into a suggested configuration for situation logics or conjunction. This is a real possibility since the defined set of conjunctions and situation logics in M/M is limited. Certain gradations and distinctions were not easy to make from the empirical account of events. It became easier as I gained experience using NVIVO to support theoretical reflection. Deeper reflection on data and theoretical possibilities usually eliminated non-viable mechanisms to leave what was felt to be the best fit. It would be advisable for researchers to get some experience to develop expertise and judgment required to perform required deductions, valuable time may be wasted 'going in circles'. Theory ought to follow reality and not the other way round when constructing analytical narratives (Bhaskar, 1978, Bhaskar, 1986). A disciplined approach was necessary to

break out of learned mental habits that put theory first. Giving primacy to empirical events over theory in a disciplined manner during usually led to the best overall mechanism.

One difficulty encountered throughout the study was getting people to grasp Critical realist concepts. Many found its concepts hard to digest in short seminars or paper presentations thus obtaining adequate ongoing feedback and critique was a challenge. The core Critical Realist community in the UK⁹⁰ on the other hand deals with advanced concepts beyond the level of this study. Their conferences, seminars and workshops could be rather abstract and esoteric for a beginning researcher. A new interactive web community forum and continued publications may in time generate sufficient mid-level knowledge and support for researchers.

10.1.2Q-METHODOLOGY

Many institutional and personal issues raised by the postcolonial critique of development would be visible only at subjective and intersubjective levels, a web of official government, local, and global ICT narratives to constitute the discursive environment for ICT4D. Some of these were captured in the discussion as ‘global normative pressures’ and ‘socio-economic base’ in the broader context. Chapters 2 and 3 showed that issues in ICT4D are contested by interest groups in government, donor countries, development agencies, academic and research communities, NGOs and civil society (Landolt, 2004). Q-methodology promised to give access to broader patterns underlying the complex discursive environment as factors of operant subjectivity, termed “vectors of thought” (Brown, 1997) or “tectonics...that render our social texts” (Stainton Rogers and Stainton Rogers, 1990).

The three factors of operant subjectivity (effectively ideological orientations) obtained were related to seven types of corporate agent groups, reducing them into three ideological orientations. Triangulation with M/M proved easier than expected because the three factors are closely associated with Archer’s (2003) three basic individual level stances towards social reality and modes of reflexivity. This association signals convergence for the two approaches which strengthened the

⁹⁰ Centred on Roy Bhaskar and the Centre for Critical Realism in London

research findings. It justifies our use of the ideologies as legitimating themes during the analysis of agent interactions. Q-methodology brought clarity to a complex domain by objectively measuring group level subjectivity (ideology), which contributed greatly to study findings. In its absence we would not have been able to deal as effectively with the complex discourses surrounding ICT4D in the cultural system during analysis.

It was relatively easy to design and execute the Q-methodology study. Researcher bias may arise during compilation of the concourse, and in selection of Q-set and P-set. Good documentation and adherence to proven methods would mitigate bias.

Q-methodology is relatively well known in IS research and has an active web based community for support. It took some time to appreciate how subjectivity could be studied scientifically beyond the objective/subjective categories. This is common to new researchers and it may be advisable to take sufficient time reflecting on its concepts to use it effectively. Analysis of post-interview remarks indicated that respondents found it challenging but also stimulating and refreshingly different from normal surveys, while others found it mentally challenging.

10.1.3 RESEARCH SUPPORT TOOLS

No major practical problems were encountered with analytical support tools except the need to learn NVIVO sufficiently in order to take full advantage of its capabilities. The user interface is friendly and easy to learn. Very useful were the Text Search Query function to look for phrases in documents, and Relationship and Dynamic modelling capabilities. NVIVO does not ‘analyze’ data but facilitates theoretical reflection. The researcher decides what to explore and when to stop. Prior training and experience would be advantageous to save time and derive maximum benefits.

We used the freely available custom software PQ-Method to analyse Q-methodology data. It was relatively easy to master once I got acquainted with the theoretical concepts. A Q-Method website and email list to which most users subscribe were invaluable in getting tips and clarifications on practical matters.

10.2 RESEARCH VALIDITY

This study adopted an intensive (idiographic or case study) research design. Positivist case studies can make generic knowledge claims through the use of case study protocols with careful control and documentation (Lee, 1989, Yin, 2003). Interpretive case study designs aim at understanding, not generalization. According to Tsoukas (1989) case studies informed by a realist epistemology can also make generic claims about the world. Realists distinguish between generality and recurrent regularities. Generality is associated with causal tendencies whose activation is contingent upon prevailing conditions. Realist case studies shed light on the “causal capability of structures” and its contingent operation to give rise to the phenomenon (Tsoukas, 1989).

Development of the analytical narrative via M/M approach was found to be inherently self-checking because inconsistencies in conceptualizing generative mechanisms in one phase were in most cases revealed as difficulties connecting the next one. Constant recourse to empirical data and refinement of theorized generative mechanisms leads to a robust analytical account that formed the basis for the main discussion in Chapter 9.

The suggested criterion in Table 5-1 is repeated with fewer explanations in Table 10-1 below with a comparative assessment for this study in the second column. Most criteria were met as indicated in the table. Using this criterion we may be reasonably confident that research findings from the study are valid.

Table 10-1 Critical Realist research criteria assessment

CRITERION	COMPARATIVE ASSESSMENT
1. Ontology	
a. Ontological appropriateness (for complex social science phenomena)	ICT4D projects and contexts are appropriately complex social phenomena as literature review revealed.
b. Contingent validity (open system, generative mechanisms not simple cause-effect)	Analytical history of emergence explicated contingent events and outcomes through generative mechanisms of socio-systemic conjunctions.
2. Epistemology	
a. Multiple perceptions of participants and of peer researchers (neither value free nor value-laden but value aware)	Many data sources were combined – interviews, documents, and observations. Q methodology gave unique objective access to subjectivity. See 10.1.3 discussion on Q-methodology research process and how triangulation with social realism enhanced research validity.
3. Methodology	
a. Methodological trustworthiness (trustworthy – the research can be audited)	Study is fully documented in Q-methodology data sheets and NVIVO database with user friendly access to transcripts, notes, journals, and log of analytical process leading to research outputs.
b. Analytic generalization (theory building rather than theory testing e.g. statistical generalization)	Research outputs target theory building for ICT4D information systems design and development.
c. Construct validity	M/M framework is underpinned by a substantive body of research in sociology and critical realism.

CHAPTER 11 CONCLUSION

The introduction chapter highlighted the broader strategic context of ICT4D, factoring in time, failure and success, and the meaning of development as issues for further research in framing ICT change in developing country contexts. We now conclude with a summary of the study and its findings to answer the research questions. It is followed by a discussion of study's implications and suggestions for further research.

11.1 THESIS SUMMARY

Contemporary ICT4D and E-Government research has explored context and contextual difference with developed countries as important themes in understanding and framing IS innovation in developing countries (Avgerou, 2001b, Walsham and Sahay, 2006). Interpretive and critical approaches have proved the most popular and productive in developing country research rather than positivist methodologies as in the west. This study was in the same tradition using a critical realist methodology to explore ICT change and transformation in Kenya as a developing postcolonial country.

Four issues were identified in the literature for which IS researchers and ICT4D project actors could benefit from further insights: The study sought to understand the broader strategic context of ICT4D defined as that which project actors can do nothing about directly; how to factor in time in multi-level integrative frameworks; and the meaning of development. The fourth was revisiting the failure-success criterion in the light of any new insights from the broader context and perspective on development.

The literature review highlighted trends in ICT4D and E-Governance and how development discourses shape ICT4D policies and practices. Critiques of development from political economy such as dependency theory, Marxian and socio-historical structural approaches, and from postcolonial perspectives were examined. Distinctions between alternative positions were identified as ideological and ethical

because each regards human needs differently. Digital-divide and ICT and poverty discourses were used to illustrate how power may structure the production of knowledge, and that may sustain differences while apparently trying to reduce global disparities (Schech, 2002, Wade, 2004).

International development agencies and financial institutions were identified as significant players in shaping ICT4D and E-Government adoption for example through the promotion of New Public Management concepts (Wong and Welch, 2004). Their approach to development policy is oriented towards modernization with a positivist technology diffusion perspective, whilst ICT innovation and adoption in developing countries appeared to call for greater sensitivity to local contexts through adaptation and cultivation (Braa and Hedberg, 2002, Heeks, 2002b). We drew on postcolonial theory to get a better understanding of developing country contexts since most were former colonies of developed western countries. This opened a new line of enquiry into ICT4D theory and practices at the margins of modernity, where postcolonial theory ‘interrupts the discourse of development’ (Biccum, 2002).

The theoretical framework thus comprised a particular historical critique of modernity from postcolonial theory, and critical realism that critiques positivism and modernity by reconsidering basic premises of western philosophy. A multi-method research design was chosen using the Morphogenetic Approach, a critical realist research framework, and Q-methodology for the study of subjectivity. After empirical investigation an analytical account of change in Kenya’s ICT policy and E-Governance processes over a forty year period was developed using Morphogenetic analysis. Interpretation was done at two levels, first for the broader strategic context and time, and then for development, its meaning, and a new interpretation of IS project failure and success.

The research findings and implications outlined below are subject to philosophical and methodological issues and limitations cited in Chapters 9 and 10.

11.2 RESEARCH FINDINGS AND IMPLICATIONS

11.2.1 STRATEGIC CONTEXT OF ICT4D AND E-GOVERNMENT PROJECTS

The broader context may comprise two types of components. Global normative pressures and the socio-economic base were suggested *sources* for material and ideational resources that ultimately define ICT possibilities and their limits. Secondly we have development agencies and workers, and elected politicians and top bureaucrats. This category *interprets* and *mediates* the transmission of resources from global and local sources. Their interactions define the broader context in which initiatives may be undertaken.

Global normative pressures include the ICT and E-Government movements, now perceived as imperative for legitimacy on the international community (Wong and Welch, 2004, Mansell and Wehn, 1998). They are a major source for ideas perceived as progressive through direct contact between governments or mediated by development agencies and workers. The socio-economic base defines available human and economic resources and societal priorities based on population characteristics. Elected politicians especially in government wield enormous power in interpreting and mediating the socio-economic base in their executive, legislative and political roles. They set and shape societal and national priorities, while development agencies and workers shape and prioritize global influences. Both development agencies and officers, and politicians and top bureaucrats, balance values against interests to define the broader context for ICT initiatives.

Project actors may not manage the broader context directly but can participate in shaping the agenda through lobbying and networks. The private sector, civil service, civil society, non-governmental and other stakeholder organizations were considered as part of the immediate project context. Together with project actors they may manage the broader context jointly through coordinated action as networks. Though they have different interests, banding together gives them necessary bargaining power and strength to deal with the interpreters and mediators of the broader context. Power for the latter derives directly from their control of material and ideational resources whether from the local socio-economic base or external foreign sources. It was

suggested that it is in the interest of developing countries to manage donor relationships more strategically by factoring in donor interests during project conception and evaluation. This may mitigate the problem of ‘hidden agendas’ that may be packaged with donor ‘help’ and begin to address structural pathologies in international development relations (Wade, 2004).

Morphogenetic analysis may be used as an ICT and E-Government strategy analysis tool because situation logics are mechanisms in social reality that provide strategic guidance to agents (Archer, 1995). Such analysis would improve our understanding of why a given approach to E-Government and ICT strategies may or may not work because it examines underlying causal mechanisms including culture and agent interests.

11.2.2 TIME IN MULTILEVEL FRAMEWORKS

Morphogenetic analysis is explicitly time based and gave further insights into how different levels of social reality change over time. The analysis separates change in the cultural and structural systems that correspond to ideological and structural time-spaces (Wallerstein, 1991). Multilevel frameworks for IS innovation in developing countries may benefit by considering time in relation to different ‘spaces’. Their interaction creates windows of opportunity when structural contradictions call for transformational decisions that involve moral choice. Such may have relevance to timing or evaluating when to undertake certain activities like launching a new initiative. More research is required to integrate time as suggested in practical frameworks.

11.2.3 ‘WHAT DEVELOPMENT MAY MEAN’ IN CRITICAL IS RESEARCH

Development is a value laden concept because it has to do with improving someone or something. IS innovation has been considered as part and parcel of social reform (Avgerou, 2001b). The nature and direction of any improvements would be moral and ethical considerations. For this reason our findings are only one of many possible suggestions.

From a dialectical critical realist perspective and the postcolonial critique of modernity, development in a postcolonial context still marked by effects of colonialism may be understood as creating conditions for the attainment of emancipation and freedom leading onto transformative praxis. Much of the task would fall on the people themselves because it involves facing up to and rejecting false beliefs, and then ‘risking freedom’ to attain autonomy. Circumstances may play a role in creating opportunities because existent false beliefs are likely benefiting a powerful party and that may wish to keep it so. Required ‘risks’ may be a cut-off of funding or other support that are perceived as essential to survival.

Education and exposure to global realities would appear to contribute to emergence of a pool of individuals capable of taking such risks in postcolonial countries when opportunities arise. Persons or communities that attain transformative agency would from postcolonial theory, have recovered identities and gained ontological visibility. They are *actional men*, self-motivated and self-validating in a normal human sense. They would be able to undertake projects strategically while managing their and others interests in reciprocal respectful relations.

This conception of development is limited by the fact many developing countries may not meet the conditions for a viable nation-state while some persons may not desire such freedoms (Freire, 1972, Rivero, 2001). The implicit association made between personal emancipation and national liberation struggles might hold less in a global networked society (Castells, 2000b). However development is still largely state led and it may apply to some extent in the case of ICT4D and E-Government projects.

11.2.4 SUCCESS AND FAILURE

Ascription of success and failure may be socially constructed where the powerful confer legitimacy on positive or negative evaluations (Wilson and Howcroft, 2002). Persons at different stages of morphogenesis displayed varying attitudes from negative to positive self-evaluation irrespective of the actual project condition. As persons progressed towards autonomy they acquired a broader perspective of their priorities and requirements. Effectively they would have acquired power to legitimate their own definitions of success and failure. Therefore a success-failure criterion may

be too narrow or even irrelevant because autonomous actors actively shape the context for the project, and continuously evaluate and re-interpret their objectives and achievements in the light of present circumstances.

Poor project performance and unsustainability may also arise from the broader context. It was observed that donor funding inculcates infantile attitudes towards project planning and management. Local actors may perceive funds in the form of grants or long-term concessional loans as ‘free’ and consequently make no effort to relate project inputs to outputs. They are usually large sums that attract corruption and patronage networks associated with politicians and top bureaucrats that have privileged access to information about complex financing mechanisms. Under such circumstances project contexts may manifest rapid change and discontinuities detrimental to good project performance.

11.3 RESEARCH CONTRIBUTIONS

The following may be considered contributions from this study to information systems theory and methodology, and to ICT4D and E-Government practice:

- 1) It extends IS researchers’ knowledge of developing country contexts by separating the immediate and broader strategic contexts based on agent roles and significance to project outcomes. Actors or occurrences in the broader context have structural impacts. It highlighted the importance of networks to project actors in managing the broader strategic context and the need for developing countries to manage donor relations strategically rather than simply as recipients.
- 2) Morphogenetic analysis was identified as an approach to ICT and E-Government strategy analysis and development. This would add onto the existing set of strategy frameworks. Morphogenetic analysis may explain why they may or may not work because unlike abstract high-level frameworks it investigates underlying mechanisms. It may be particularly suited in conditions of rapid institutional change as found in many developing countries.

- 3) Multi-level integrative frameworks to frame IS innovation in developing countries may benefit from considering time as having different cycles for different spaces of social reality. Interactions amongst different spaces may create windows of opportunity for transformational decisions that involve moral choice.
- 4) Our findings extend information systems failure theory. It has been suggested that research in developing country contexts that have exaggerated contextual effects in comparison to western design contexts would inform failure theory (Avgerou and Madon, 2004, Heeks, 2004b). Local ICT project actors capable of autonomous action (have attained transformative agency) reframe the situation from their own perspective and do what they feel is best though others may consider them failed using instrumental criteria. The simple fail-success criterion may be irrelevant or breaks down for such agents.

Failure may be a self-fulfilling prophecy when donors are involved especially financially. Donor funds may hinder behavior that would have local actors' link inputs to outputs rationally. Effectively they compromise local institution building and attract rent-seeking behavior to the detriment of good project performance.

- 5) The study provides a new perspective of development in critical ISR using critical realism and postcolonial theory. Development may usefully be conceived as creating conditions within a dialectical process that would lead onto the attainment of transformative praxis by people. It illustrates one way to include values in IS methodologies. We included freedom and emancipation, relevant to developing countries or persons still disentangling themselves from past relations of domination. Participatory approaches in ICT4D to 'empower' the excluded have similar aspirations and may benefit from lessons learnt.
- 6) It adds onto the body of empirical critical realist work in information systems research (ISR) in the literature, and to the development of critical realist research methodology with triangulation and multi-methodology with Q-methodology. Q-

methodology helped us integrate a subjective and complex discursive realm into Morphogenetic analysis.

- 7) The three factors of operant subjectivity (equivalent to ideologies since it is environmentally conditioned subjectivity that is also volitional) obtained from the Q-methodology study may provide an independent empirical social entity level perspective of Margaret Archer's three basic individual level stances towards society (Archer, 2003). Each ideology was interpreted as providing a legitimating framework for the corresponding mode of individual reflexivity.

11.4 SUGGESTIONS FOR FURTHER RESEARCH

- 1) A recent special issue of *MIS Quarterly* on ICTs in developing countries laid emphasis on the need to develop IS research beyond its traditional boundaries (Walsham et al., 2007). Development of an information systems development methodology that embodies lessons from this study would contribute to this call. It would cater for agency, culture and structure while conceiving change dialectically within a moral/ethical framework. Part of this may include a well elaborated ICT strategy analysis framework based on Morphogenetic theory.
- 2) Examine the implications of a dialectical approach to development to the IT artifact and its conceptualization. Research studies indicate that conceptualization of the IT artifact in developing country contexts is inseparable from the implied understanding of 'what development is' (Corea, 2007, Sein and Harindramath, 2004).
- 3) A similar study in different contexts would strengthen and improve on the findings. This study was conducted at the national level; it would be useful to deepen it for a single institution in Kenya to see how the dialectical model scales downwards, or alternatively explore change at regional or global levels to examine upward scaling. In western contexts it may provide new explanations for IS/IT theory-practice inconsistencies that researchers have also identified (Ciborra, 2004, Ciborra, 1997, Nandhakumar and Avison, 1999, Smith, 2006).

- 4) Explore potential engagement of critical realism with complexity theory in information systems research. Agent based models and complexity theory metaphors would supplement or add on to matrices of possible configurations and conditioning mechanisms in social reality, and possibly ease the burden of morphogenetic analysis. Critical realist accounts of social entities and their interactions would improve on complexity theory models that have been criticized as having an impoverished account of social reality (Stewart, 2001). .

————— **The End** —————

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CHAPTER 13 APPENDICES

13.1 KENYA GOVERNMENT RESEARCH AUTHORIZATION

(Copy of letter)

MINISTRY OF SCIENCE & TECHNOLOGY

Telegrams: "SCIENCE TEC", Nairobi

Fax No.

Telephone No: 318581

When replying please quote

MOEST 13/001/36C 228/2



JOGOO HOUSE "B"
HARAMBEE AVENUE
P.O. Box 60209-00200
NAIROBI
KENYA

13th April 2006

JAMES NJIHIA
WARWICK BUSINESS SCHOOL
UNITED KINGDOM

Dear Sir

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *'The Transition to Governance in a developing country: A critical realist and complexity theory perspective of Kenya'*

I am pleased to inform you that you have been authorized to carry out research in Nairobi for a period ending 30th November 2007.

You are advised to report to the Provincial Commissioner, the Provincial Director of Education Nairobi and the Government officers in charge of the Government Departments you will visit before commencing your research project.

On completion of your research, you are expected to submit two copies of your research report to this office.

A handwritten signature in blue ink, appearing to read 'B.O. ADEWA', is written over a horizontal line.

B.O. ADEWA
FOR: PERMANENT SECRETARY

Copy to:

The Provincial Commissioner – **Nairobi**

The Provincial Director of Education – **Nairobi**

The Heads of Departments, Government Ministries, State Corporations, Statutory Boards

13.2 LIST OF PERSONS INTERVIEWED

No.	Organization/ Interviewee title	Remarks	NVIVO Code
<i>Directorate of eGovernment</i>			
1	Senior Public Relations Officer	Non technical, conscious of broad implications of eGovernment	EG1
2	Senior Economist	Involved in drafting eGovernment Strategy	EG2
3	Principal ICT Officer (GITS/D-eGov)	Intimate long term association with ICTs in government	EG3
<i>Ministry of Finance</i>			
4	Deputy Director GITS	One of 2 deputies, directorship is vacant, other deputy acting	MF1
5	Systems Administrator GITS	Coordinates hw/sw projects for inter-ministry linkages	MF2
6	ICT Officer (Ministry of Planning and National Development)	Same building as Finance, previously one ministry, works closely with GITS	MF3
7	HRM Officer	IPPD user	MF4
8	Project Manager (IFMIS)	In MoF, works with 'donor' technical assistance personnel	MF5
9	Accountant General	User & policy maker, IFMIS, No audio recording	MF6
<i>Ministry of Health</i>			
10	Chief ICT Officer	Long serving, very informative	MH1
11	HR Officer	User IPPD	MH2
12	Health Records & Information Officer (Ag. Head HMIS)	Head on training in Japan	MH3
13	Dentist & Head – Child Health Promotion Program	Knowledgeable on strategy & ICT	MH4
<i>Private Sector</i>			
14	Group Executive Director Symphony & Chairman KIF (Kenya ICT Federation)	Leading spokesman for Kenyan private sector & ICT	PS1

15	Media Owners Association	Observed Forum to discuss ICT Bill on invitation	MOA
<i>Civil Society</i>			
16	Coordinator APC-KICTANET	Hub for professional and civil society network activities	CS1
<i>Development Agency</i>			
17	Programme Officer IDRC	‘Donor’ perspectives	DA1
18	Ex-Programme Officer IDRC	Led ICT policy research with MoPND	DA2
<i>Academia/Consultants</i>			
19	Computer Science Lecturer/ consultant	Also ICT Consultant evaluated most GoK systems including IFMIS, HMIS, IPPD	AC1
20	Professor of Information Systems/ consultant	Intimately involved in most major ICT policy initiatives at the national level	AC2

13.3 SAMPLE INTERVIEW GUIDE

TRANSITION TO E-GOVERNANCE IN KENYA: CASE OF MINISTRY OF FINANCE

Research Interview Guide

Interviews shall be in-depth to capture a rich picture of actual or perceived reality of transition process towards E-Governance in Kenya. Note that for purposes of this study, eGovernment is defined as “**the use of information and communication technologies (ICTs) to improve the activities of public sector organizations.**” The scope of eGovernment covers improving government processes (eAdministration), connecting citizens (eCitizens and eServices) and building external interactions (eSociety).

1. National level – ICT and eGovernment in Kenya (Policy & Implementation)

- a) Overview of history of public sector ICT and eGovernment - From when there were no computers till today. (Document would be helpful)
 - i) Institutional changes over time e.g. creation of GITS, E-Government Directorate etc.
- b) The idea of eGovernment
 - i) What do you understand by e-Government? How does the Government appear to understand it?
 - ii) Whose idea is it? Kenya Government? Donors? Citizens? Private sector? International pressure and need to keep up?
- c) Policy
 - i) Describe policy development process – Guiding principles, values, and participants etc.
 - ii) What do you like or did not like about it?
 - iii) How was the policy translated into action plans/programmes?
 - iv) How useful is it to you in eGovernment related work? Explain further.
- d) Processes
 - i) What action programmes for eGovernment exist?
 - ii) What do you think of how they are funded? Co-ordination among ‘donors’?
 - iii) How are they operationalized as projects?
- e) Players - Important individuals, groups and their goals and how pursued.

- i) Who are/have been some key players at National level?
- ii) Who were influential in driving forward the e-government agenda – public sector, private sector, NGOs, individuals (Champions)? How good is/was the cooperation.
- iii) What did they do that is of significance?
- iv) What of opposition? Open and hidden.

2. E-Government in Ministry

- a) Tell me about eGovernment in the Government
 - eAdministration – Government Processes
 - eCitizens & services – Connecting citizens
 - eSociety – Building external interactions
- b) Technology issues
 - i) What systems exist and at what stages of completion, usage?
 - ii) What computer types and systems have been used in government over the years?
 - iii) How well do public servants adapt to new technologies? Explain.
- c) Financing and resources
 - i) How are projects generally financed?
 - ii) How important is foreign/ “donor” funding?
- d) Project management and co-ordination
 - i) In your opinion, what is the approximate rate of failure/success for projects? (Success being the ability to meet stated goals)
 - ii) Why do you think projects succeed or fail in the Ministry?
 - iii) Give examples of successful and of failed e-Government projects.
- e) People
 - i) Culture, beliefs and attitudes and their effects on eGovernment take off.
 - ii) How compatible are actual work culture/practices with rational assumptions about decision processes in computer based systems? E.g.- “African time”
 - iii) How much does private and public interest conflicts affect your e-government projects?
 - iv) Kenyans are from diverse cultural and ethnic backgrounds, how easy is it to “pull together” for the common interest?
- f) Personal experiences in working in IT/E-Government related work: Significant moments, events, personal motivation, encountering difficult decisions and changes.

13.4 CHRONOLOGY OF EVENTS IN KENYA'S ICT HISTORY

(Developed from documents as 1st step in secondary data analysis)

Kenya eGovernment/ICT Story

Period	eGovernment	ICT Policy	Players	Comments	Refs
< 1963	Tabulators – Semi-automatic machines using punched cards		Treasury	Used for Government accounts and Settlers Billing	GOK Website GITS fact sheet
1966	ICT 1500 Series Mainframe Computer			Had several applications – Payrolls, accounts, National Examinations, Schools Equipment, etc	MF1
	ICL 1900 Series Mainframe Computer				
1974	IBM 370 Mainframe Computer - MOF	Role set out in Treasury Circulars Nos. 3, 11, 13 of 1973, 1977, 1978	GCC (Government Computer Centre)	Number crunching focus, statistics, payrolls, etc. Name later changed to GCS.	
1980s		National Information Policy workshop	Kenya Library Association (KLA), National Council for Science and	1 st traceable effort at ICT policy	

Period	eGovernment	ICT Policy	Players	Comments	Refs
			Technology (NCST), KNLS		
1988	Amstrad PCWs from All Africa Games			Basic word processing machines	
1990s	Formation of PC department – MISD to oversee USAID DSPD Project		USAID, MoF	Introduction of distributed processing systems	
1990s	MISD oversees GoK financial mgt systems development		Dr. Kettering	Linked to Anglo Leasing	
1990s	MISD duplication with GCS			Friction between MISD & GITS	
1993		National Informatics policy effort - Report not deemed good enough. Dwelt on IT policy in the main.	PS MRTTT, NCST, UNESCO, CSK, ITSA. Academics, Librarian, Consultant	MoF & MoIT&C objected to informatics role for MRTTT. Proposals came to nothing after 1997 elections and ministerial re-organization & PS transferred. Different aspects of ICT in different ministries.	(Waema, 2005) (Ochuodho and Matunga, 2005)
1996/7	Accountant General Vote book computerized with		Accountant General,	Stand alone PC systems	

Period	eGovernment	ICT Policy	Players	Comments	Refs
	PCs		MISD		
1997	KPMG/MoF Report on financial systems				
1997		Telecom & Postal services privatization guidelines	KP&TC, MoTC	Kenya Communications Act (KCA, 1998), Postal Corporation Act (1998) created.	Interview MF6
July 1, 1999		KCA(1998) takes effect	KP&TC, MoTC	KP&TC split to TKL, PCK & CCK. Created NCS in MoITC. Monopolies granted to TKL, PCK protested by stakeholders. Policy developed in isolation by ministry.	
	GCS develops micro capability			Easier than MISD to develop mainframe capability	MF1 interview
1998 - 2000	National Y2K Steering Committee		PS MoF & P, MoIT&C (dream team), Y2K coordination centre	Millennium bug. First serious GoK consultative process. Many stakeholders. Final report recommended National Council for ICT (NCICT). Cabinet memo never discussed or adopted.	(Waema, 2005) (Eldon, 2005)

Period	eGovernment	ICT Policy	Players	Comments	Refs
				Effective start of PPP. Crisis as driver?	
		NCS Formed in MoITC as legal advisor on ICT policy.		In line with Kenya Communications Act of 1998. Formed before NCICT memo was ready.	(Waema, 2005)
2000+	GCS merged with MISD to create GITS		Dr Sitonik, PS treasury	Merged after Millennium bug efforts	
	EGov Idea floated		World Bank, Dream team - P. Gakunu, Dr J Oketch	Reforms in public governance. MTEF	(Waema, 2005)
2000 - 2002		Cabinet sector policy paper on broadcasting.	Dream team PS, MoITC, Academic, CCK	To address chaotic broadcasting sector. Recommend NCS as policy head, CCK as regulator.	(Waema, 2005)
		Draft broadcasting bill	Dream team PS, MoITC, AG, CCK	Both documents get lukewarm reception by Parliamentary Committee on Communications. Stakeholder workshops, further comments, stalled at cabinet level	(Waema, 2005)

Period	eGovernment	ICT Policy	Players	Comments	Refs
				after 2 years. Too many vested interests, PS change, elections, MoITC split into 2.	
Jan 2001		PRSP ICT-SWG – Input to PRSP	WB/IMF		See comment on private sector mindset.
Mar 2001		PRSP ICT-SWG Report presentation date. Dream Team PS sacked on 28 th , day to officially receive report.		Loss of support, new PS had little time though supportive. Confusion on role of GITS in policy, had been driving it through SWG, but NCS, CCK set up in MoITC. NCS kept to itself. With ICT as sector, other seven SWG could ignore its enabling capabilities as always.	
From Dec 2000		NSE High-Tech and Growth board committee.	NSE, IEA	Synergistic with ICT-SWG. ICT tax reduction, incentive proposals lacked research justification. Recent research support by Intel.	
		NSE Committee becomes KPSF ICT Board	KPSF, NSE	NSE close to KPSF at director level. Mandate broadened to include policy formulation and advocacy. By 2001, Mood not conducive to new policies, election fever till end of 2002.	

Period	eGovernment	ICT Policy	Players	Comments	Refs
2001		2002-2008 National Development Plan (NDP) - ICT Plan Working Group (PWG)	1 private sector member from SWG, NCS.	Shortly after PRSP. NDP is statutory requirement so little enthusiasm in govt. NCS convened weak team and had draft document, biased to “C” in ICT.	PS1 Interview
Dec 2000-2001		GITS, KENET stakeholder consultations	GITS, KENET (USAID funded), MoFP, MoITC	1 st national workshop on ICT, over 100 stakeholders. NCICT proposed. Y2K Cabinet memo to be amended, but nothing came of it. Dream team sacked 2001. Politics, electioneering dominated national agenda.	(Waema, 2005) - states “lost historic opportunity” – not very historical
2001		Meetings to discuss national IT policy	Dir Tech Training, MoEST.	Basing authority on Presidential Circular 2 of 2000. No visible outputs. Conference in Nov 2001	(Waema, 2005)
		ISP interests	TESPOK	Skilled assertiveness in dealing with gov, strategic focus and successful pursuit of a few large goals.	(Eldon, 2005) See comments
2002	GITIM Initiated	GITIM	DPM, IDA, Osano & Associates	PSRMTP Project Public sector reform. IT in general targeted through GITIM. IFMIS part of Accountant General reform. – Evident disconnection within govt of ICT	

Period	eGovernment	ICT Policy	Players	Comments	Refs
				cross function at policy and program level	
Sept 2002	IFMIS Contract Awarded		Accountant General, WB, DFID, CIDA	Following previous study by KPMG	Interview MF5
2002	ICT Brief for NARC & KANU	ICT Brief for NARC & KANU	KEPSA ICT Board	For consideration by whoever took power. NARC said to be more receptive.	
2002 - 2003		National ICT Policy process	NCS	Non-inclusive process. Mar 2003 conference by invitation only – mainly public sector. Private sector, civil society excluded.	
2003		Econ Recovery Conference, Mombasa.	Multi-stakeholder	Wind of change, new, better informed senior civil servants and ministers. Govt asks for one voice from private sector – birth of KEPSA. KSPF ICT Board (Individuals) transformed to KEPSA ICT Board (ICT Associations)	
2003/2004		ARCC study on status of ICT policy	IDRC	Inspired by emergent opportunities for ICT in dev, NARC victory,	
2002		Media Regulation	KUJ, MOA, Media	Existing laws to gag media. KUJ (KUJ	(Ochuodho and

Period	eGovernment	ICT Policy	Players	Comments	Refs
			Council	code of conduct), MC (Code of ethics) start preparation to counter any ‘bad’ bill, self-regulation efforts.	Matunga, 2005)
June 2003		ERS Released		At long last ICT identified as cross cutting issue. Heavy private sector contribution. Enthusiasm for change, but in reality, little changed on the ground.	
Aug 2003		“Confidential” Draft ICT Policy	NCS	Reflected the little private sector contribution there was. Raised questions about new gov commitment to ICT. A later draft puts private sector in its place, gov as having policy prerogative, private sector only to “operate”. New gov ministers swamped by day-to-day pressures, commitments, no time to crusade for ICT with private sector etc.	Labeling to justify exclusion of private sector – PS1. Refer paper for more comments, his opinions.
	eGovernment Task Force formed			Eldon attributes its establishment to calls for government efficiency from private sector.	
Feb 2004		KIF Integration Workshop	IDRC, KIF, GITS, Dir-eGov, CSOs,	Culmination of series of sectoral ICT workshops (Agriculture, health etc).	(Nduati and Bowman, 2005)

Period	eGovernment	ICT Policy	Players	Comments	Refs
			Academia, Dev agencies	Integration WS to bring in govt to same level of enthusiasm & commitment.	
March 2004		1 st National ICT Convention	IDRC, KIF, Gov, all stakeholders	Landmark event. Great positive vibes, timing with other conferences, especially 1 st international one investment in Kenya. Laid basis for genuine cooperation with government with informed declarations, and for ICT strategy and policy making.	(Nduati and Bowman, 2005)
March 2004	EGovernment Strategy released		P. Gakunu, eGov Task force. UNDP, IDRC funds	Implementation commenced. eGov linked to MDGs. Developed in-house, problem of outside buy in. Decry disconnection of published ICT policy to existing ICT initiatives (many all over govt), both in content and for learning. Much duplication & overlap. Incompatible systems across govt.	(Okong'o, 2005) (Wafula and Wanjohi, 2005)
June 2004		"Confidential" draft National ICT policy document, only within government	NCS, Invited public sector bodies	Document delayed, did not become a Cabinet Memorandum, alleged objections from MoTI	

Period	eGovernment	ICT Policy	Players	Comments	Refs
		officers.			
June 2004		New minister (Tuju) rejects draft as cut & paste job.	MoIC, Minister, PS	New ministry, Minister & PS techno savvy from past experience. Young urbane minister previously in MoTI. Also rejects prepared broadcasting policy and bill.	
Sept 2004	IPPD Starts in MoF				Interview MF4
Oct 2004		Draft ICT Policy published. Public release in Nov 2004 at national ICT Visioning workshop.	MoIC	Draft similar to June 2004 draft. Promise to seek outside opinions.	
?	ExecNet – WAN linking all PSs		GITS	For fast top-level communications between PSs. Acted as catalyst for eGovernment by creating awareness at right level. Mostly email.	
Nov-Dec 2004	GITIM Report, & 3 Workshops – Stakeholders, Vendors and combined	Covered in report, workshops held	MoF, Osano & Associates, World Bank	To establish a high-level I & C framework, strategy and operational plan. Report done but apparently without much consultation. Initiative died. 3 rd workshop sponsored by	Interviews, draft report

Period	eGovernment	ICT Policy	Players	Comments	Refs
				vendors.	
Jan 2005	eGovernment Directorate established		P Gakunu, Dr Juma		
Feb 2005		Public invitation for comments on Draft ICT Policy.	PS, MoIC	Marks significant shift in mindset of public servants. Ushered new regime in public policy making.	(Waema, 2005)
June 2005		Inclusive ICT Policy process. National ICT Conference – Sun ‘N’ Sand Hotel, Mombasa	KICTANET – Tespok, KIF, Head of PS, PS MoIC	Draft revised in open workshop, many stakeholders. Not perfect but good start. Government ‘forced’ to listen, watershed event, normal govt arrogance not accepted by participants.	CS1
Feb 2006		ICT Sector WG Report	MoF, ICT-SWG	ICT is now part of formal Government budgeting with budgetary lines at National Level. Treated as a sector, report acknowledges broad role of ICT for development. Report focused, action oriented with specific targets and budgets. Not much evaluation of existing programs.	ICT-SWG Report 2006
		ICT policy and bills published		Widely accepted, as it was inclusive.	

Period	eGovernment	ICT Policy	Players	Comments	Refs
April 2006	Fiber optic cabling for ministries tender		GITS	Replacement for wireless & ad hoc VPNs based on leased lines	
	Common look & feel eGov portal tender		Dir-eGov		
		Draft Media Bill published	MoIC, MOA, KICTANET, Consultants	Strong response from assertive media owners. No walk over for govt.	MOA workshop observation notes
	Eassy project		NEPAD, GoK, Private sector	Kenya not ready to sign up	Press, EG3

13.5 NVIVO PROJECT SUMMARY REPORT

NVIVO Project Summary Report

Project:	Njihia Research
Generated:	27/09/2008 16:34
Description	PhD research - WBS
Created	10/08/2006 13:20
Modified	25/09/2008 19:53
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Attributes

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Cases

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Directorate of eGovernment
EG1
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Documents

Sub-folders	2
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Interviews & notes

Sub-folders	7
Items	0

Academia-Cosultants

Sub-folders	0
Items	3

AC1
AC1 notes
AC2

Civil Society

Sub-folders	0
Items	1
CS1	
Development Agency	
Sub-folders	0
Items	4
	DA1
	DA1 Notes
	DA2
	DA2 Notes
Finance ministry	
Sub-folders	0
Items	8
	MF1
	MF2
	MF2 Notes
	MF4
	MF4 Notes
	MF5
	MF5 Notes
	MF6
Health ministry	
Sub-folders	0
Items	6
	MH1
	MH1 Notes
	MH3
	MH3 Notes
	MH4
	MH4 Notes
Private Sector	
Sub-folders	0
Items	2
	MOA notes
	PS1
Project Notes	
Sub-folders	0
Items	2
	NVIVO Codes
	Project Log

Externals	
Sub-folders	0
Items	0
Free Nodes	
Sub-folders	0
Items	65
<ul style="list-style-type: none"> Actional-innovation Actors Awareness Broad based social development Citizen eServices Communication Confidence Conflict Corruption Development Agencies Dominated private sector eGov Idea Expressed beliefs Expressed expectations Freedom G2B services G2G services Gender & Youth Globalization-liberalization Goals & Outcomes GOK ICT History 'Hidden Agendas' History Ideas & opinions IFMIS Infrastructure Interests Interraction IPPD Kairos Key events Knowledge transfer Leadership Low continuity work process Management skills Meetings 	

Motivation
National Identity
Networks
Official discourse
Parliament
Personal drive
Phase 1 - 1963-1990
Phase 2 - 1990-2000
Phase 3 - 2000-2004
Phase 4 - 2004-2006
Planned change
Political will
Power and control
Pragmatism
Problems - dysfunctional outcomes
Project Management
Public service
Race & Ethnicity
Reasons
Regulations
Subaltern voices
Systems
Teamwork
Technology
Trust
Values
Wananchi
Weak CSOs
Wealth creation

Matrices

Sub-folders 0
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Memos

Sub-folders 0
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CS1 Notes
Culture
Derivative nodes
MF1 notes
PS1 Notes
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Structure		
Models		
Sub-folders	0	
Items	4	
		High Level Interaction Phase 1-2 High Level Interaction Phase 3-4 Phase 1 Interraction Subaltern Project Evaluation
Queries		
Sub-folders	0	
Items	0	
Relationship Types		
Sub-folders	0	
Items	4	
		Associated Influences MoH Data Power Reciprocal
Relationships		
Sub-folders	0	
Items	2	
		Confidence (Reciprocal) Actional-innovation MoH data mgt (Associated) Power and control
Results		
Sub-folders	0	
Items	0	
Sets		
Sub-folders	0	
Items	4	
		Discourse Key Themes Outcomes Phases 1-4
Tree Nodes		
Sub-folders	0	

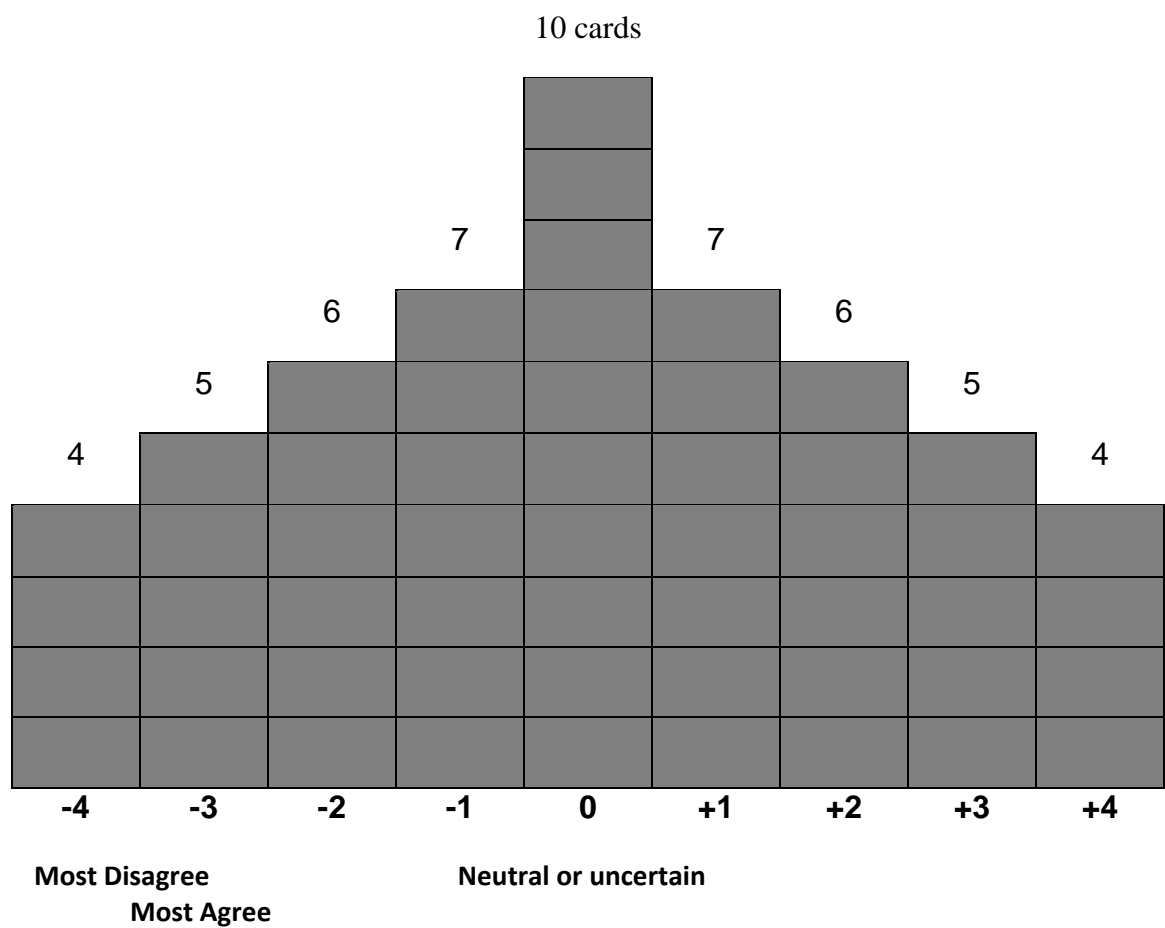
Change
Attitudes to change
Barriers to change
Change - age factor
Change - firm stance
Change agency
Change drivers
Change process
Demand
Emergent change
Culture
Culture - Institutional
Culture - Int'l orgs
Culture - National
Culture - Prvt Sector
MOH
MoH data mgt
MoH Health programmes
MoH M&E
MoH Org Structure
Resources
Funding
HR Capacity

13.6 Q-METHOD DATA SHEET WITH INSTRUCTIONS

Data Sheet and Condition of Instruction

Transition to E-Governance in Kenya: Q sorting exercise

1. Please begin by reading through the statements to familiarize yourself with them. As you do this, sort the cards into three piles:
 - Place to the **right** those with which you **agree** (+),
 - to the **left** those with which you **disagree** (-), and
 - in the **middle** those about which you are **neutral, ambivalent, or uncertain**.
2. Once you have sorted the cards into three piles, now return to the cards with which you agree, on your right. Matching the distribution displayed below, select the 4 with which you most strongly agree, placing them on the far right (+4). The order of the items within the markers is not important.
3. Turning to the cards in the “disagree” pile, again select the 4 with which you most strongly disagree and place them to the far left (-4). Again, the sorting should match the diagram below, and the specific order does not matter.
4. Return to the remaining cards in the agree pile and select 4 more that you most agree with and place above the appropriate marker for degree of agreement. Work your way towards the middle by alternately selecting 4 cards from the right and the left, and placing them appropriately according to your degree of agreement or disagreement. The specific order within the markers is not important.
5. Finally, sort the cards in the middle (0), those with which you were neutral, ambivalent, or uncertain.
6. Review the card sort, and feel free to move or switch cards to most accurately reflect your personal point of view. There are no right or wrong positions, just make sure they reflect your own considered opinion.



Please feel free to ask any questions. Thank you very much for your participation.

Muranga Njihia

Warwick Business School, *University of Warwick*

DATA SHEET: Transition to E-Governance in Kenya: Q sorting exercise

Personal details

Name (Optional): _____

Organization: _____

Managerial Level: Senior ____ Middle ____ Junior ____ **Sex:** Male ____ Female ____ (Tick one)

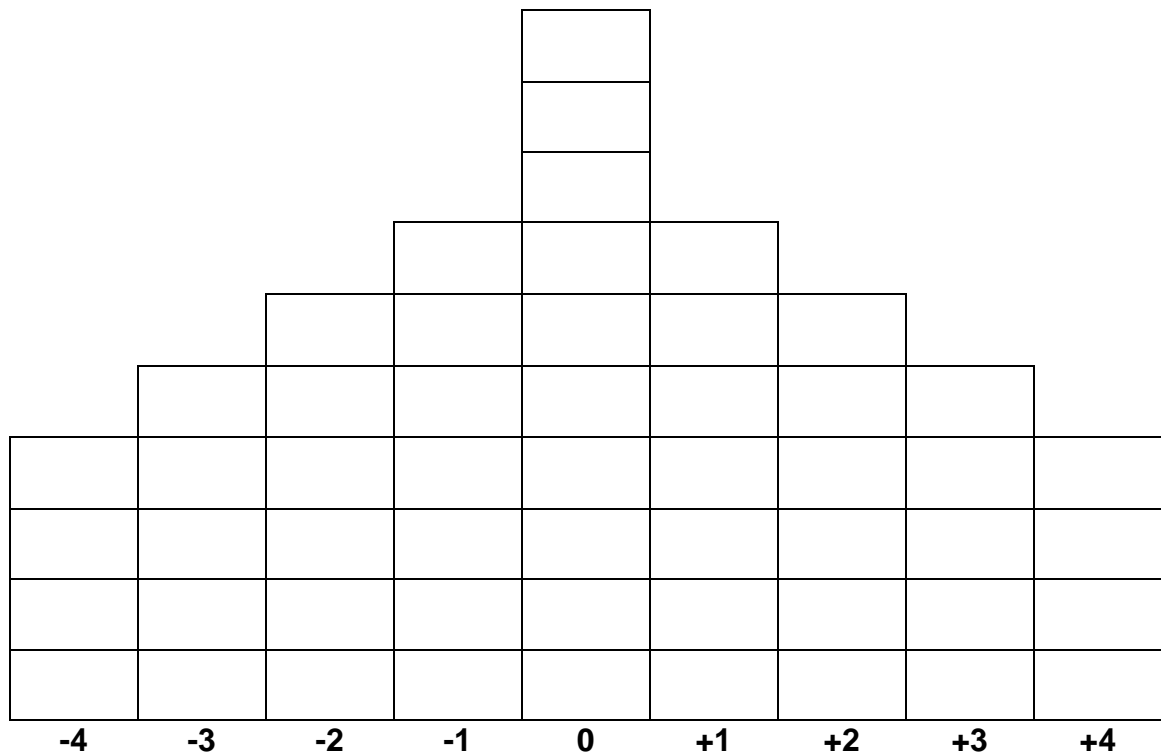
Age: Below 30 years ____ 30 to 45 years ____ Above 45 years ____

Location: Tick appropriate

Public Service	
Private sector	
Civil society	
Academia/ Consulting	
Development agency	

Score Sheet

Please record the number of each card in the final sort in its corresponding position on the chart below.



Post interview questions

1. How would you describe your experience of sorting the cards?
2. Explain the extreme (-4, +4) and any unusual or unexpected cards positioning.
(Will vary from one person to another)
3. In your opinion, shall Kenya be an information society by 2030 as envisioned by the NESC (National Economic and Social Council)? Explain.

(Write answers in the space below)

Post interview questions – Responses

1.

2.

3.

13.7 Q-SET (STATEMENTS SELECTED FROM CONCOURSE)

1. ICT skills in GOK are inadequate indicating a serious capacity problem for effective roll out of e-Government.
2. Civil society organizations and NGOs not working directly with ICTs, such as those working in health, trade, micro-finance, agriculture and so forth, do not yet recognize how ICT policy impacts on their work.
3. “Despite the achievements in education and training in Africa in the past 30 years, [Kenya] still does not have a critical mass of top-flight policy analysts and managers who can help pilot their economies through the storms and turbulence that must be faced daily.”
4. In the African continent there is an incredible ability to take to technological innovation. And this ability is not only on the part of people who have been to school, but may be found just as much in bars as in offices.
5. There are many progressive and positive persons within government with whom people working for advancement in ICT and eGovernance can partner to move the country forward.
6. E-Government is mainly concerned with things to do with the Internet and websites.
7. Some people say we put the cart before the horse by making the eGovernment Strategy in the absence of a national ICT policy, but the policy took more than 10 years to develop and we wanted to move!
8. Kenya’s national policy and strategy focused on ICT as a sector, thus placing efforts on the development and strengthening of ICT-service provision industries (telecommunications and ICT-enabled services), it ought instead to have adopted a conscious policy towards promoting ICT as an enabler to broader socio-economic development for all sectors.
9. The Millennium Development Goals (MDGs) must be the priority for application of ICTs in development.
10. Though there are countries that are both more and less advanced than Kenya in Africa, it is lagging behind in both ICT application and

development in general and eGovernance in particular - given its history and potential.

11. In countries where access to basic needs of food, pure water, shelter, education and health care are major almost insoluble problems, it is difficult to justify the huge expenses required for a telecommunications infrastructure that, for reasons of cost and geographical coverage, may be available to only a select few.
12. We need to think very seriously about sustainability for ourselves without depending on donors. Donors tend to take up issues depending on where the wind is blowing and don't show much concern for projects sustainability.
13. Access to ICTs will enable and can be used as leverage towards greater empowerment and a more equitable future for poorer communities
14. Since the launch of its telecommunications sector reform in 1999, Kenya has made great strides in the expansion of telecommunications services to "those who can afford," but not to "those who cannot afford." This pattern of exclusion, based on capacity to pay, risks creating an ever widening divide.
15. Many countries around the world celebrate youth through sports, entertainment and now entrepreneurship through the great potential of IT and especially the Internet, Kenyan youth are largely being passed by in this respect, and just used for political thuggery.
16. Because technology is generally associated with men, and because women are generally relegated to non-technological professions, women face a psychological barrier when confronted with ICT.
17. Notwithstanding conflicts with commercial requirements of efficiency and profitability, equity and distributive justice demand that women should participate in the telecommunications driven information society.
18. In today's information society access to ICTs is a basic human right, a right which should be protected and extended
19. Positive change in Kenya can be achieved by a small number of key, bold and committed individuals with a clear vision who can share this

vision and build consensus, enthusiasm and optimism and then institutionalise it for sustainability.

20. The government does not fully grasp or understand the potential of ICT contribution to economic growth.
21. The current MDG-inspired prioritisation of ICT applications for small- and micro-scale firms seems odd given these are the enterprises that have the least impact economically in terms of growth, incomes, efficiency and exports. At least equal weight should be given to assisting medium- and large-scale firms. They still need help but they are far better equipped to make sustainable use of ICTs, and are the main engines of wealth creation and competitiveness.
22. The national information and communications technology (ICT) policy draft paper should stress wealth creation. Poverty cannot be reduced without first creating wealth.
23. The existence of monopolies resulting in high costs and inefficient service is a major challenge to the establishment of eGovernance in Kenya.
24. I believe that once you put a road somewhere, people will use it, so there is no need to worry about absence of immediate demand for ICT services in the rural areas.
25. Of critical importance is sustained Political Will as a key success factor in realizing the dream of eGovernment at national and regional level.
26. Kenyan citizens are generally ignorant and apathetic and do not understand their social contractual rights and obligations. So they cannot take advantage of emergent opportunities since their elected leaders view their election as an end in itself rather than as a means to greater goals.
27. eGovernment initiatives are adversely affected by the credibility deficit that most institutions of governance suffer. Neither the citizens nor those elected to the institutions have faith in them.
28. It is doubtful that applying 21st century technology to the present system of governance will improve on it. The problem with governance is not the lack of technology; it is rather social and human.

29. African social movements and progressive forces should free themselves from domination by the IMF and World Bank inspired policies by exploring strategies aimed at promoting a new kind of leadership able and willing to challenge these institutions in favour of genuine alternative development policies.
30. The e-government will not only ensure that there is effective and smooth delivery of services but, also that the Government activities are transparent.
31. I feel that Africa will overcome developmental challenges by acquiring new technologies, but also by keeping its communal solidarity and progressive aspects, to become the continent of tradition and also one that moves the most towards modernity at world level.
32. So crucial are ethnic identifications that they often override loyalty to the state, "dedication to the parliamentary process, respect for law and order *and even for the security of human life*"
33. Though Kenyans are a high-energy people, most of this energy is destructively focussed on each other due to low trust.
34. Greed for power and corruption are characteristic of governments even in western countries, so accusations of rampant mismanagement in African governments are an example of selective perception by western dominated global media.
35. The problem of "tribalism" in public service is more pronounced among older persons, who may have grown up in the rural areas. Younger people are more open, broadminded and are very easy to work with.
36. Many of us Africans still feel inferior as can be seen in for example the desire to ape western mannerisms such as an American accent among media presenters.
37. People are not used to the discipline and measures that ICT systems and contemporary management demand, this is a major challenge in Kenya today.
38. The question of African time is a philosophical and cultural one; time is not money to everyone. Technology should be designed to serve the context of the user.

39. Despite complaints about the slow pace of civil service reforms in Kenya, this is actually a “bad thing which is a good thing” because such change is non-disruptive.
40. The civil service culture is all about responsibility and risk avoidance, this infects even young newly employed people. So it is not easy to be focused on results delivery.
41. Values are much more important than the level of pay for our leaders in regard to fostering better management of public resources.
42. Though computers don’t make people work harder, they can make people more organized and efficient.
43. There is the feeling that current government policies and activities are geared towards appealing to foreign investors with little regard at local investors.
44. Kenya’s private sector organizations might be better off aligning themselves with the government and civil society entities in the ICT strategy and policy formulation process.
45. Development Partners will play a critical role towards realization of development of the goals and objectives of the national ICT policy.
46. The online world is now more reflective of the broader Kenyan society and is no longer composed of the highly educated, relatively well to do, highly computer literate individuals.
47. The apparently little prominence for civil society in ICT/eGovernance process may have been due to the fact that from the outset it involved all stakeholders.
48. Civil society is least interested in the quiet behind the scenes sustained structured dialogue on building policies like the private sector, and more interested in high profile media attention getting displays and events that appeal to donor sentiments.
49. Africa has to foster in its population a spirit of looking for original technological solutions based on the socio-economic circumstances of people and societies instead of being a perpetual (indiscriminate) consumer of Western products and services.

50. Older civil servants tend to be technology shy unlike the younger ones who are self starters. Since they are also at higher grades, they are obstacles to the adoption of ICT in the government.
51. Any handicaps Africa has are also a unique opportunity for the continent to jump some technological stages. We are not obliged to first have telex and then gradually move on to e-mail.
52. Organic growth - The ICT fashion already being followed in so many developing communities is the cell phone, not the PC. So agencies should be paying far more attention to the development potential of mobile telephony.
53. People have inherent trust for computers, so we can advance the fight against corruption through the use of email to report such cases to the Kenya Anti-Corruption Authority.
54. The very low rate of computer and telephone line penetration is a major challenge to the establishment of eGovernance in Kenya.

13.8 SELECTED Q-METHODOLOGY OUTPUTS

13.8.1 CORRELATION MATRIX BETWEEN SORTS

PQMethod2.11 Kenya eGovernment Discourse
 PAGE 1
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Correlation Matrix Between Sorts

SORTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
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0 32 6 25																										
2 02mkcd02	35	100	12	8	29	4	31	-6	7	27	2	21	27	26	-7	41	26	49	-8	10	32	34	12	34	28	-6
10 9 22 14																										
3 03vobe01	14	12	100	11	20	23	28	23	4	-5	32	18	7	11	2	-11	21	-4	10	14	0	-14	4	28	1	-23
-2 28 1 -3																										
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3 17 -4 32																										
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Correlation Matrix Between Sorts

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Correlation Matrix Between Sorts

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3 03vobe01	46	15	22	14	-2	5	3	1	20	20	12	9	16	20	19	5	8	11	11	14
4 04ercd07	28	3	3	19	4	20	28	37	42	55	39	45	32	28	18	7	-3	4	11	14
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6 06erad05	35	-1	-4	-9	-4	9	-8	12	22	20	9	20	9	-4	10	6	12	-3	11	0
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11 11vdag10	4	11	-10	14	18	4	-11	17	19	24	0	-4	26	0	11	-9	9	7	2	6
12 12vobf08	27	16	28	20	19	-4	-5	-16	3	0	13	31	0	20	-7	28	4	21	18	-2
13 13vocf02	21	28	32	34	19	17	29	-3	12	0	-11	1	-4	49	21	26	31	44	20	37
14 14vobg09	19	19	39	14	4	22	22	8	24	10	14	25	12	22	9	10	39	32	17	8
15 15vobh07	17	16	26	5	23	11	9	24	29	12	27	9	42	24	3	2	12	-1	18	16
16 16voaf06	27	42	43	52	34	-7	6	6	18	4	12	13	-4	26	-2	25	15	46	12	29
17 17vobd05	22	30	50	6	36	9	14	-4	27	7	29	28	6	32	11	25	11	16	30	29
18 18voaf04	18	26	8	46	19	17	9	10	0	5	6	21	-1	31	5	28	4	31	9	36
19 19vocf03	-17	7	14	-8	-15	-34	-6	-19	-18	-15	-12	-9	-26	0	-15	15	9	-11	10	11
20 20mkag05	27	22	16	25	10	17	15	28	15	8	24	11	22	15	20	13	11	29	11	18
21 21mkcg05	29	-10	21	21	12	12	32	-5	10	9	6	20	1	10	-17	-3	17	21	15	-6
22 22mkge04	-1	7	15	20	27	56	55	37	26	9	9	36	23	35	12	-14	11	14	11	18
23 24mkad	8	10	14	6	4	11	6	-9	11	7	8	8	14	17	4	11	-5	25	14	-4
24 25ercd	55	35	35	47	23	10	14	17	27	11	11	15	35	25	5	7	19	28	6	32
25 26mkah	13	23	15	5	31	20	3	4	32	14	8	19	8	28	20	1	9	16	17	25
26 27mkch	-22	-26	-25	-41	-15	-9	-32	-24	-1	2	-35	-26	-30	-36	-26	-16	-14	-41	-23	-31
27 28mkah	3	6	12	6	35	15	6	10	11	8	-3	29	23	21	-5	42	11	-7	5	0
28 29mkbd09	7	38	17	30	-8	-5	-14	-3	4	5	20	6	-7	19	6	35	-17	10	35	17

29	30mkch08	-5	30	8	14	40	23	7	3	9	-1	-3	19	36	5	0	-18	55	32	16	21
30	31mkcd07	17	11	8	24	-10	-7	15	-9	18	-2	3	44	10	43	-11	34	10	35	22	21
31	32mhcg06	100	7	40	24	22	13	6	-1	25	12	7	21	22	26	10	3	9	27	0	23
32	33mhcg05	7	100	27	48	17	20	2	2	32	18	9	16	14	35	14	28	19	10	34	28
33	34kmch02	40	27	100	37	22	10	16	-1	35	5	23	21	4	41	3	24	23	22	17	30
34	35mhbe03	24	48	37	100	20	8	24	12	8	8	23	17	18	32	7	28	12	34	25	39
35	36kmbe01	22	17	22	20	100	27	17	6	6	-1	2	25	31	4	2	6	18	29	-4	17
36	37mkad10	13	20	10	8	27	100	39	25	20	6	2	18	10	21	41	-1	5	-7	9	2
37	38mkbc09	6	2	16	24	17	39	100	36	9	20	9	41	13	36	26	15	15	18	17	24
38	39mkbh08	-1	2	-1	12	6	25	36	100	29	43	30	36	21	3	36	6	-18	-7	-17	6
39	40erce10	25	32	35	8	6	20	9	29	100	63	20	32	20	24	-2	3	-1	-1	8	-3
40	41erbf09	12	18	5	8	-1	6	20	43	63	100	22	30	22	21	5	21	-5	0	-1	6
41	42erbg08	7	9	23	23	2	2	9	30	20	22	100	30	11	5	4	-3	-10	3	32	24
42	43erae07	21	16	21	17	25	18	41	36	32	30	30	100	22	50	13	25	-1	21	10	27
43	44mhag04	22	14	4	18	31	10	13	21	20	22	11	22	100	16	-8	5	25	27	3	15
44	45mhbe	26	35	41	32	4	21	36	3	24	21	5	50	16	100	22	43	3	25	28	36

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Correlation Matrix Between Sorts

SORTS	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
45 46mkaf03	10	14	3	7	2	41	26	36	-2	5	4	13	-8	22	100	13	-8	4	-6	15
46 46exbf01	3	28	24	28	6	-1	15	6	3	21	-3	25	5	43	13	100	3	-7	17	22
47 47excf02	9	19	23	12	18	5	15	-18	-1	-5	-10	-1	25	3	-8	3	100	39	20	22
48 48exah03	27	10	22	34	29	-7	18	-7	-1	0	3	21	27	25	4	-7	39	100	1	30
49 49exce04	0	34	17	25	-4	9	17	-17	8	-1	32	10	3	28	-6	17	20	1	100	23
50 50exae05	23	28	30	39	17	2	24	6	-3	6	24	27	15	36	15	22	22	30	23	100

13.8.2DEFINING SORTS (VARIABLES)

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Factor Matrix with an X Indicating a Defining Sort

Loadings			
QSORT	1	2	3
1 01mkce01	0.4379X	0.1570	0.2627
2 02mkcd02	0.5413X	-0.0704	0.2930
3 03vobe01	0.1898	0.4274X	-0.0627
4 04ercd07	-0.0086	0.5714X	0.4596
5 05erch06	0.4136	0.6304X	0.0779
6 06erad05	-0.0509	0.4870X	0.0350
7 07ercd04	0.2843	0.4700X	0.1255
8 08ercd03	0.1067	0.5014X	-0.1812
9 09ercg02	0.0432	0.0618	0.5555X
10 10erbg01	0.5106X	0.0356	0.0947
11 11vdag10	-0.0511	0.1814	0.2650
12 12vobf08	0.4006X	0.2203	-0.1597
13 13vocf02	0.5876X	-0.2043	0.2067
14 14vobg09	0.4063X	0.2305	0.1180
15 15vobh07	0.1654	0.2423	0.2686
16 16voaf06	0.6842X	-0.0838	0.0472
17 17vobd05	0.5385X	0.2517	-0.0377
18 18voaf04	0.5127X	-0.0840	0.1788
19 19vocf03	0.1587	-0.1491	-0.4667
20 20mkag05	0.2553	0.2400	0.2703
21 21mkcg05	0.2101	0.0230	0.2137
22 22mkge04	0.1732	-0.0997	0.7492X
23 24mkad	0.2594	0.1293	-0.0155
24 25ercd	0.4207X	0.1359	0.3194

25	26mkah	0.3298X	0.1635	0.2240
26	27mkch	-0.4783X	-0.1813	-0.1776
27	28mkah	0.1438	0.0254	0.2416
28	29mkbd09	0.4437	0.2692	-0.3765
29	30mkch08	0.2326	-0.1882	0.4246X
30	31mkcd07	0.4916X	0.0772	-0.0152
31	32mhcg06	0.3657	0.3057	0.2058
32	33mhcg05	0.5755X	0.1660	0.0032
33	34kmch02	0.6240X	0.1723	0.0198
34	35mhbe03	0.6115X	0.0402	0.2123
35	36kmbe01	0.2815	-0.1619	0.4885X
36	37mkad10	0.0671	0.1005	0.5774X
37	38mkbc09	0.2227	0.0368	0.5581X
38	39mkbh08	-0.1610	0.4113	0.5213X
39	40erce10	0.1625	0.5946X	0.2560
40	41erbf09	-0.0193	0.6191X	0.2392
41	42erbg08	0.1311	0.5540X	0.0674
42	43erae07	0.3115	0.4434	0.3681

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Factor Matrix with an X Indicating a Defining Sort (continued)

Loadings				
QSORT	1	2	3	
43 44mhag04	0.0756	0.1777	0.5042X	
44 45mhbe	0.6015X	0.2486	0.1687	
45 46mkaf03	0.0213	0.2152	0.2405	
46 46exbf01	0.4243X	0.1832	-0.1764	
47 47excf02	0.3356	-0.2903	0.2054	
48 48exah03	0.5516X	-0.1823	0.2564	
49 49exce04	0.4449X	0.1721	-0.1167	
50 50exae05	0.5258X	-0.0215	0.2111	
% expl.Var.	14	8	9	

13.8.3 NORMALIZED FACTOR SCORES

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Normalized Factor Scores -- For Factor 1

No.	Statement	No.	Z-SCORES
25	Of critical importance is sustained Political Will as a key	25	2.197
50	Older civil servants tend to be technology shy unlike the yo	50	1.885
30	The e-government will not only ensure that there is effectiv	30	1.714
23	The existence of monopolies resulting in high costs and inef	23	1.619
54	The very low rate of computer and telephone line penetration	54	1.283
42	Though computers don't make people work harder, they can mak	42	1.224
18	In today's information society access to ICTs is a basic hum	18	1.213
22	The national ICT policy draft paper sould stress wealth crea	22	1.171
13	Access to ICTs will enable and can be used as leverage towar	13	1.099
31	I feel that Africa will overcome by acquiring new technologi	31	1.005
29	African social movements and progressive forces should free	29	0.921
51	Any handicaps Africa has are also a unique opportunity for t	51	0.912
12	We need to think very seriously about sustainability for our	12	0.781
35	The problem of "tribalism" in public service is more pronoun	35	0.757
14	Since the launch of its telecommunications sector reform in	14	0.735
5	There are many progressive and positive persons within gover	5	0.712
17	Notwithstanding conflicts with commercial requirements of ef	17	0.472
1	ICT skills in GOK are inadequate indicating a serious capaci	1	0.470
28	It is doubtful that applying 21st century technology to the	28	0.450
41	Values are much more important than the level of pay for our	41	0.433
49	Africa has to foster in its population a spirit of looking f	49	0.343
9	The Millennium Development Goals must be the priority for ap	9	0.323
48	Civil society is least interested in the quiet behind the sc	48	0.311
19	Positive change in Kenya can be achieved by a small number	19	0.199
45	Development Partners will play a critical role towards reali	45	0.174

8	Kenya's national policy and strategy focused on ICT as a sec	8	0.101
33	Though Kenyans are a high-energy people, most of this energy	33	0.021
47	Corruption and greed permeates the society completely. No on	47	-0.125
10	Though there are countries that are both more and less advan	10	-0.139
43	There is the feeling that current government policies and ac	43	-0.264
46	The online world is now more reflective of the broader Kenya	46	-0.341
32	So crucial are ethnic identifications that they often overri	32	-0.347
4	In the African continent there is an incredible ability to t	4	-0.351
20	The government does not fully grasp or understand the potent	20	-0.408
27	eGovernment initiatives are adversely affected by the credib	27	-0.476
44	Kenya's private sector organizations might be better off ali	44	-0.484
7	Some people say we put the cart before the horse by making t	7	-0.533
53	People have inherent trust for computers, so we can advance	53	-0.533
37	People are not used to the discipline and measures that ICT	37	-0.593
36	Many of us Africans still feel inferior as can be seen in fo	36	-0.712
39	Despite complaints about the slow pace of civil service refo	39	-0.844
52	Organic growth - The ICT fashion already being followed in s	52	-0.902
38	The question of African time is a philosophical and cultural	38	-0.926

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Normalized Factor Scores -- For Factor 1

No.	Statement	No.	Z-SCORES
11	In countries where access to basic needs of food, pure water	11	-1.001
40	The civil service culture is all about responsibility and ri	40	-1.026
2	Civil society organizations and NGOs not working directly wi	2	-1.060
16	Because technology is generally associated with men, and bec	16	-1.066
34	Greed for power and corruption are characteristic of governm	34	-1.098
24	I believe that once you put a road somewhere, people will us	24	-1.163
15	Many countries around the world celebrate youth through spor	15	-1.204
21	The current MDG-inspired prioritisation of ICT applications	21	-1.289
26	Kenyan citizens are generally ignorant and apathetic and do	26	-1.530
6	E-Government is mainly concerned with things to do with the	6	-1.943
3	Despite the achievements in education and training in Afric	3	-2.170

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Normalized Factor Scores -- For Factor 2

No.	Statement	No.	Z-SCORES
11	In countries where access to basic needs of food, pure water	11	2.133
43	There is the feeling that current government policies and ac	43	1.815
12	We need to think very seriously about sustainability for our	12	1.698
13	Access to ICTs will enable and can be used as leverage towar	13	1.545
35	The problem of "tribalism" in public service is more pronoun	35	1.509
29	African social movements and progressive forces should free	29	1.454
28	It is doubtful that applying 21st century technology to the	28	1.451
8	Kenya's national policy and strategy focused on ICT as a sec	8	1.363
47	Corruption and greed permeates the society completely. No on	47	1.080
49	Africa has to foster in its population a spirit of looking f	49	1.037
42	Though computers don't make people work harder, they can mak	42	0.920
18	In today's information society access to ICTs is a basic hum	18	0.864
37	People are not used to the discipline and measures that ICT	37	0.673
48	Civil society is least interested in the quiet behind the sc	48	0.669
19	Positive change in Kenya can be achieved by a small number	19	0.648
30	The e-government will not only ensure that there is effectiv	30	0.507
5	There are many progressive and positive persons within gover	5	0.445
45	Development Partners will play a critical role towards reali	45	0.411
9	The Millennium Development Goals must be the priority for ap	9	0.328
54	The very low rate of computer and telephone line penetration	54	0.259
10	Though there are countries that are both more and less advan	10	0.213
50	Older civil servants tend to be technology shy unlike the yo	50	0.150
2	Civil society organizations and NGOs not working directly wi	2	0.123
51	Any handicaps Africa has are also a unique opportunity for t	51	0.097
32	So crucial are ethnic identifications that they often overri	32	0.080

52	Organic growth - The ICT fashion already being followed in s	52	-0.017
17	Notwithstanding conflicts with commercial requirements of ef	17	-0.175
27	eGovernment initiatives are adversely affected by the credib	27	-0.191
3	Despite the achievements in education and training in Afric	3	-0.199
7	Some people say we put the cart before the horse by making t	7	-0.204
46	The online world is now more reflective of the broader Kenya	46	-0.223
41	Values are much more important than the level of pay for our	41	-0.288
22	The national ICT policy draft paper sould stress wealth crea	22	-0.297
1	ICT skills in GOK are inadequate indicating a serious capaci	1	-0.320
40	The civil service culture is all about responsibility and ri	40	-0.396
20	The government does not fully grasp or understand the potent	20	-0.454
23	The existence of monopolies resulting in high costs and inef	23	-0.506
31	I feel that Africa will overcome by acquiring new technologi	31	-0.518
26	Kenyan citizens are generally ignorant and apathetic and do	26	-0.523
21	The current MDG-inspired prioritisation of ICT applications	21	-0.585
25	Of critical importance is sustained Political Will as a key	25	-0.609
38	The question of African time is a philosophical and cultural	38	-0.623
44	Kenya's private sector organizations might be better off ali	44	-0.694

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Normalized Factor Scores -- For Factor 2

No.	Statement	No.	Z-SCORES
33	Though Kenyans are a high-energy people, most of this energy	33	-0.754
39	Despite complaints about the slow pace of civil service refo	39	-0.765
36	Many of us Africans still feel inferior as can be seen in fo	36	-0.784
53	People have inherent trust for computers, so we can advance	53	-0.829
15	Many countries around the world celebrate youth through spor	15	-1.094
6	E-Government is mainly concerned with things to do with the	6	-1.331
4	In the African continent there is an incredible ability to t	4	-1.513
16	Because technology is generally associated with men, and bec	16	-1.718
14	Since the launch of its telecommunications sector reform in	14	-1.719
24	I believe that once you put a road somewhere, people will us	24	-1.911
34	Greed for power and corruption are characteristic of governm	34	-2.233

Normalized Factor Scores -- For Factor 3

No.	Statement	No.	Z-SCORES
29	African social movements and progressive forces should free	29	2.109
49	Africa has to foster in its population a spirit of looking f	49	2.101
12	We need to think very seriously about sustainability for our	12	1.953
25	Of critical importance is sustained Political Will as a key	25	1.765
50	Older civil servants tend to be technology shy unlike the yo	50	1.451
19	Positive change in Kenya can be achieved by a small number	19	1.342
15	Many countries around the world celebrate youth through spor	15	1.260
32	So crucial are ethnic identifications that they often overri	32	1.109
34	Greed for power and corruption are characteristic of governm	34	1.072
1	ICT skills in GOK are inadequate indicating a serious capaci	1	0.869
51	Any handicaps Africa has are also a unique opportunity for t	51	0.734
33	Though Kenyans are a high-energy people, most of this energy	33	0.699
48	Civil society is least interested in the quiet behind the sc	48	0.662
36	Many of us Africans still feel inferior as can be seen in fo	36	0.601
47	Corruption and greed permeates the society completely. No on	47	0.495
14	Since the launch of its telecommunications sector reform in	14	0.445
41	Values are much more important than the level of pay for our	41	0.385
3	Despite the achievements in education and training in Afric	3	0.371
54	The very low rate of computer and telephone line penetration	54	0.340
40	The civil service culture is all about responsibility and ri	40	0.321
37	People are not used to the discipline and measures that ICT	37	0.290
42	Though computers don't make people work harder, they can mak	42	0.232
30	The e-government will not only ensure that there is effectiv	30	0.230
10	Though there are countries that are both more and less advan	10	0.226
35	The problem of "tribalism" in public service is more pronoun	35	0.152
20	The government does not fully grasp or understand the potent	20	0.051

23	The existence of monopolies resulting in high costs and inef	23	-0.062
27	eGovernment initiatives are adversely affected by the credib	27	-0.082
43	There is the feeling that current government policies and ac	43	-0.116
17	Notwithstanding conflicts with commercial requirements of ef	17	-0.142
8	Kenya's national policy and strategy focused on ICT as a sec	8	-0.183
52	Organic growth - The ICT fashion already being followed in s	52	-0.237
13	Access to ICTs will enable and can be used as leverage towar	13	-0.341
7	Some people say we put the cart before the horse by making t	7	-0.347
28	It is doubtful that applying 21st century technology to the	28	-0.351
11	In countries where access to basic needs of food, pure water	11	-0.372
44	Kenya's private sector organizations might be better off ali	44	-0.505
4	In the African continent there is an incredible ability to t	4	-0.573
21	The current MDG-inspired prioritisation of ICT applications	21	-0.625
31	I feel that Africa will overcome by acquiring new technologi	31	-0.665
9	The Millennium Development Goals must be the priority for ap	9	-0.715
18	In today's information society access to ICTs is a basic hum	18	-0.756
2	Civil society organizations and NGOs not working directly wi	2	-0.779

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Normalized Factor Scores -- For Factor 3

No.	Statement	No.	Z-SCORES
38	The question of African time is a philosophical and cultural	38	-0.818
39	Despite complaints about the slow pace of civil service refo	39	-0.886
16	Because technology is generally associated with men, and bec	16	-0.993
26	Kenyan citizens are generally ignorant and apathetic and do	26	-1.031
24	I believe that once you put a road somewhere, people will us	24	-1.034
5	There are many progressive and positive persons within gover	5	-1.046
22	The national ICT policy draft paper sould stress wealth crea	22	-1.305
46	The online world is now more reflective of the broader Kenya	46	-1.411
53	People have inherent trust for computers, so we can advance	53	-1.547
45	Development Partners will play a critical role towards reali	45	-1.614
6	E-Government is mainly concerned with things to do with the	6	-2.728

13.8.4FACTOR Q-SORT VALUES FOR EACH STATEMENT

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Factor Q-Sort Values for Each Statement

		Factor Arrays			
No.	Statement	No.	1	2	3
1	ICT skills in GOK are inadequate indicating a serious capaci	1	1	-1	2
2	Civil society organizations and NGOs not working directly wi	2	-3	0	-2
3	Despite the achievements in education and training in Afric	3	-4	0	1
4	In the African continent there is an incredible ability to t	4	-1	-3	-1
5	There are many progressive and positive persons within gover	5	1	1	-3
6	E-Government is mainly concerned with things to do with the	6	-4	-3	-4
7	Some people say we put the cart before the horse by making t	7	-1	0	-1
8	Kenya's national policy and strategy focused on ICT as a sec	8	0	3	0
9	The Millennium Development Goals must be the priority for ap	9	1	1	-2
10	Though there are countries that are both more and less advan	10	0	1	0
11	In countries where access to basic needs of food, pure water	11	-2	4	-1
12	We need to think very seriously about sustainability for our	12	2	4	4
13	Access to ICTs will enable and can be used as leverage towar	13	3	4	-1
14	Since the launch of its telecommunications sector reform in	14	2	-4	1
15	Many countries around the world celebrate youth through spor	15	-3	-3	3
16	Because technology is generally associated with men, and bec	16	-3	-4	-3
17	Notwithstanding conflicts with commercial requirements of ef	17	1	0	0
18	In today's information society access to ICTs is a basic hum	18	3	2	-2
19	Positive change in Kenya can be achieved by a small number	19	0	2	3
20	The government does not fully grasp or understand the potent	20	-1	-1	0
21	The current MDG-inspired prioritisation of ICT applications	21	-4	-2	-1

22	The national ICT policy draft paper should stress wealth crea	22	3	-1	-3
23	The existence of monopolies resulting in high costs and inef	23	4	-1	0
24	I believe that once you put a road somewhere, people will us	24	-3	-4	-3
25	Of critical importance is sustained Political Will as a key	25	4	-2	4
26	Kenyan citizens are generally ignorant and apathetic and do	26	-4	-1	-3
27	eGovernment initiatives are adversely affected by the credib	27	-1	0	0
28	It is doubtful that applying 21st century technology to the	28	1	3	-1
29	African social movements and progressive forces should free	29	2	3	4
30	The e-government will not only ensure that there is effectiv	30	4	1	0
31	I feel that Africa will overcome by acquiring new technologi	31	2	-1	-2
32	So crucial are ethnic identifications that they often overri	32	0	0	3
33	Though Kenyans are a high-energy people, most of this energy	33	0	-2	2
34	Greed for power and corruption are characteristic of governm	34	-3	-4	3
35	The problem of "tribalism" in public service is more pronoun	35	2	3	0
36	Many of us Africans still feel inferior as can be seen in fo	36	-2	-3	2
37	People are not used to the discipline and measures that ICT	37	-1	2	1
38	The question of African time is a philosophical and cultural	38	-2	-2	-2
39	Despite complaints about the slow pace of civil service refo	39	-2	-2	-2
40	The civil service culture is all about responsibility and ri	40	-2	-1	1
41	Values are much more important than the level of pay for our	41	1	0	1
42	Though computers don't make people work harder, they can mak	42	3	2	1
43	There is the feeling that current government policies and ac	43	0	4	0
44	Kenya's private sector organizations might be better off ali	44	-1	-2	-1

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			Factor Arrays		
No.	Statement	No.	1	2	3
45	Development Partners will play a critical role towards reali	45	0	1	-4
46	The online world is now more reflective of the broader Kenya	46	0	0	-4
47	Corruption and greed permeates the society completely. No on	47	0	3	2
48	Civil society is least interested in the quiet behind the sc	48	0	2	2
49	Africa has to foster in its population a spirit of looking f	49	1	2	4
50	Older civil servants tend to be technology shy unlike the yo	50	4	1	3
51	Any handicaps Africa has are also a unique opportunity for t	51	2	0	2
52	Organic growth - The ICT fashion already being followed in s	52	-2	0	0
53	People have inherent trust for computers, so we can advance	53	-1	-3	-4
54	The very low rate of computer and telephone line penetration	54	3	1	1

Variance = 5.185 St. Dev. = 2.277

13.8.5 FACTOR CHARACTERISTICS

Factor Characteristics

	Factors		
	1	2	3
No. of Defining Variables	21	9	8
Average Rel. Coef.	0.800	0.800	0.800
Composite Reliability	0.988	0.973	0.970
S.E. of Factor Scores	0.108	0.164	0.174

Standard Errors for Differences in Normalized Factor Scores

(Diagonal Entries Are S.E. Within Factors)

Factors	1	2	3
1	0.153	0.197	0.205
2	0.197	0.232	0.239
3	0.205	0.239	0.246

13.8.6DISTINGUISHING STATEMENTS

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Distinguishing Statements for Factor 1

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

		Factors					
		1		2		3	
No.	Statement	RNK	SCORE	RNK	SCORE	RNK	SCORE
25	Of critical importance is sustained Political Will as a key	4	2.20	-2	-0.61	4	1.76
50	Older civil servants tend to be technology shy unlike the yo	4	1.88	1	0.15	3	1.45
30	The e-government will not only ensure that there is effectiv	4	1.71*	1	0.51	0	0.23
23	The existence of monopolies resulting in high costs and inef	4	1.62*	-1	-0.51	0	-0.06
54	The very low rate of computer and telephone line penetration	3	1.28*	1	0.26	1	0.34
22	The national ICT policy draft paper sould stress wealth crea	3	1.17*	-1	-0.30	-3	-1.31
13	Access to ICTs will enable and can be used as leverage towar	3	1.10	4	1.54	-1	-0.34
31	I feel that Africa will overcome by acquiring new technologi	2	1.01*	-1	-0.52	-2	-0.67
29	African social movements and progressive forces should free	2	0.92*	3	1.45	4	2.11
12	We need to think very seriously about sustainability for our	2	0.78*	4	1.70	4	1.95
35	The problem of "tribalism" in public service is more pronoun	2	0.76*	3	1.51	0	0.15
17	Notwithstanding conflicts with commercial requirements of ef	1	0.47*	0	-0.18	0	-0.14
28	It is doubtful that applying 21st century technology to the	1	0.45*	3	1.45	-1	-0.35
49	Africa has to foster in its population a spirit of looking f	1	0.34*	2	1.04	4	2.10
19	Positive change in Kenya can be achieved by a small number	0	0.20	2	0.65	3	1.34
33	Though Kenyans are a high-energy people, most of this energy	0	0.02*	-2	-0.75	2	0.70
47	Corruption and greed permeates the society completely. No on	0	-0.13*	3	1.08	2	0.49
32	So crucial are ethnic identifications that they often overri	0	-0.35	0	0.08	3	1.11

37	People are not used to the discipline and measures that ICT	37	-1	-0.59*	2	0.67	1	0.29
52	Organic growth - The ICT fashion already being followed in s	52	-2	-0.90*	0	-0.02	0	-0.24
11	In countries where access to basic needs of food, pure water	11	-2	-1.00*	4	2.13	-1	-0.37
40	The civil service culture is all about responsibility and ri	40	-2	-1.03*	-1	-0.40	1	0.32
34	Greed for power and corruption are characteristic of governm	34	-3	-1.10*	-4	-2.23	3	1.07
21	The current MDG-inspired prioritisation of ICT applications	21	-4	-1.29*	-2	-0.58	-1	-0.63
26	Kenyan citizens are generally ignorant and apathetic and do	26	-4	-1.53	-1	-0.52	-3	-1.03
6	E-Government is mainly concerned with things to do with the	6	-4	-1.94*	-3	-1.33	-4	-2.73
3	Despite the achievements in education and training in Afric	3	-4	-2.17*	0	-0.20	1	0.37

Distinguishing Statements for Factor 2

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

		Factors					
		1		2		3	
No.	Statement	RNK	SCORE	RNK	SCORE	RNK	SCORE
11	In countries where access to basic needs of food, pure water	11	-2 -1.00	4	2.13*	-1	-0.37
43	There is the feeling that current government policies and ac	43	0 -0.26	4	1.82*	0	-0.12
13	Access to ICTs will enable and can be used as leverage towar	13	3 1.10	4	1.54	-1	-0.34
35	The problem of "tribalism" in public service is more pronoun	35	2 0.76	3	1.51*	0	0.15
29	African social movements and progressive forces should free	29	2 0.92	3	1.45*	4	2.11
28	It is doubtful that applying 21st century technology to the	28	1 0.45	3	1.45*	-1	-0.35
8	Kenya's national policy and strategy focused on ICT as a sec	8	0 0.10	3	1.36*	0	-0.18
47	Corruption and greed permeates the society completely. No on	47	0 -0.13	3	1.08	2	0.49
49	Africa has to foster in its population a spirit of looking f	49	1 0.34	2	1.04*	4	2.10
19	Positive change in Kenya can be achieved by a small number	19	0 0.20	2	0.65	3	1.34
50	Older civil servants tend to be technology shy unlike the yo	50	4 1.88	1	0.15*	3	1.45
2	Civil society organizations and NGOs not working directly wi	2	-3 -1.06	0	0.12*	-2	-0.78
51	Any handicaps Africa has are also a unique opportunity for t	51	2 0.91	0	0.10*	2	0.73
32	So crucial are ethnic identifications that they often overri	32	0 -0.35	0	0.08	3	1.11
3	Despite the achievements in education and training in Afric	3	-4 -2.17	0	-0.20	1	0.37
41	Values are much more important than the level of pay for our	41	1 0.43	0	-0.29*	1	0.39
22	The national ICT policy draft paper sould stress wealth crea	22	3 1.17	-1	-0.30*	-3	-1.31
1	ICT skills in GOK are inadequate indicating a serious capaci	1	1 0.47	-1	-0.32*	2	0.87
40	The civil service culture is all about responsibility and ri	40	-2 -1.03	-1	-0.40*	1	0.32
26	Kenyan citizens are generally ignorant and apathetic and do	26	-4 -1.53	-1	-0.52	-3	-1.03

25 Of critical importance is sustained Political Will as a key	25	4	2.20	-2	-0.61*	4	1.76
33 Though Kenyans are a high-energy people, most of this energy	33	0	0.02	-2	-0.75*	2	0.70
6 E-Government is mainly concerned with things to do with the	6	-4	-1.94	-3	-1.33*	-4	-2.73
4 In the African continent there is an incredible ability to t	4	-1	-0.35	-3	-1.51*	-1	-0.57
16 Because technology is generally associated with men, and bec	16	-3	-1.07	-4	-1.72*	-3	-0.99
14 Since the launch of its telecommunications sector reform in	14	2	0.74	-4	-1.72*	1	0.44
24 I believe that once you put a road somewhere, people will us	24	-3	-1.16	-4	-1.91*	-3	-1.03
34 Greed for power and corruption are characteristic of governm	34	-3	-1.10	-4	-2.23*	3	1.07

Distinguishing Statements for Factor 3

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

		Factors					
		1		2		3	
No.	Statement	RNK	SCORE	RNK	SCORE	RNK	SCORE
29	African social movements and progressive forces should free	2	0.92	3	1.45	4	2.11*
49	Africa has to foster in its population a spirit of looking f	1	0.34	2	1.04	4	2.10*
25	Of critical importance is sustained Political Will as a key	4	2.20	-2	-0.61	4	1.76
50	Older civil servants tend to be technology shy unlike the yo	4	1.88	1	0.15	3	1.45
19	Positive change in Kenya can be achieved by a small number	0	0.20	2	0.65	3	1.34*
15	Many countries around the world celebrate youth through spor	-3	-1.20	-3	-1.09	3	1.26*
32	So crucial are ethnic identifications that they often overri	0	-0.35	0	0.08	3	1.11*
34	Greed for power and corruption are characteristic of governm	-3	-1.10	-4	-2.23	3	1.07*
33	Though Kenyans are a high-energy people, most of this energy	0	0.02	-2	-0.75	2	0.70*
36	Many of us Africans still feel inferior as can be seen in fo	-2	-0.71	-3	-0.78	2	0.60*
47	Corruption and greed permeates the society completely. No on	0	-0.13	3	1.08	2	0.49
3	Despite the achievements in education and training in Afric	-4	-2.17	0	-0.20	1	0.37
40	The civil service culture is all about responsibility and ri	-2	-1.03	-1	-0.40	1	0.32*
42	Though computers don't make people work harder, they can mak	3	1.22	2	0.92	1	0.23*
35	The problem of "tribalism" in public service is more pronoun	2	0.76	3	1.51	0	0.15*
20	The government does not fully grasp or understand the potent	-1	-0.41	-1	-0.45	0	0.05
13	Access to ICTs will enable and can be used as leverage towar	3	1.10	4	1.54	-1	-0.34*
28	It is doubtful that applying 21st century technology to the	1	0.45	3	1.45	-1	-0.35*
11	In countries where access to basic needs of food, pure water	-2	-1.00	4	2.13	-1	-0.37*
9	The Millennium Development Goals must be the priority for ap	1	0.32	1	0.33	-2	-0.72*

18	In today's information society access to ICTs is a basic hum	18	3	1.21	2	0.86	-2	-0.76*
26	Kenyan citizens are generally ignorant and apathetic and do	26	-4	-1.53	-1	-0.52	-3	-1.03
5	There are many progressive and positive persons within gover	5	1	0.71	1	0.45	-3	-1.05*
22	The national ICT policy draft paper sould stress wealth crea	22	3	1.17	-1	-0.30	-3	-1.31*
46	The online world is now more reflective of the broader Kenya	46	0	-0.34	0	-0.22	-4	-1.41*
53	People have inherent trust for computers, so we can advance	53	-1	-0.53	-3	-0.83	-4	-1.55*
45	Development Partners will play a critical role towards reali	45	0	0.17	1	0.41	-4	-1.61*
6	E-Government is mainly concerned with things to do with the	6	-4	-1.94	-3	-1.33	-4	-2.73*

13.8.7 CONSENSUS STATEMENTS

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Consensus Statements -- Those That Do Not Distinguish Between ANY Pair of Factors.

All Listed Statements are Non-Significant at $P > .01$, and Those Flagged With an * are also Non-Significant at $P > .05$.

No.	Statement	No.	Factors					
			1		2		3	
			RNK	SCORE	RNK	SCORE	RNK	SCORE
7*	Some people say we put the cart before the horse by making t	7	-1	-0.53	0	-0.20	-1	-0.35
10*	Though there are countries that are both more and less advan	10	0	-0.14	1	0.21	0	0.23
20	The government does not fully grasp or understand the potent	20	-1	-0.41	-1	-0.45	0	0.05
27*	eGovernment initiatives are adversely affected by the credib	27	-1	-0.48	0	-0.19	0	-0.08
38*	The question of African time is a philosophical and cultural	38	-2	-0.93	-2	-0.62	-2	-0.82
39*	Despite complaints about the slow pace of civil service refo	39	-2	-0.84	-2	-0.76	-2	-0.89
44*	Kenya's private sector organizations might be better off ali	44	-1	-0.48	-2	-0.69	-1	-0.51
48*	Civil society is least interested in the quiet behind the sc	48	0	0.31	2	0.67	2	0.66

QANALYZE was completet at 16:23:35