The dynamics of the adoption and use of ICT-based initiatives for development: results of a field study in Mozambique

by

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ABSTRACT

The dynamics of the adoption and use of ICT-based initiatives for development: results of a field study in Mozambique

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Key Words: Adoption and use of ICT, HEM, development, globalisation, ANT, translation, ST, institutionalisation, due process model, human environment model, BPR, Telecentre, Galatee.

The research focused on examining the interplay between innovations in information and communication technology (ICT) in three different micro-level settings with broader development processes within the emerging global economy of Mozambique. There is a great deal of concern among different national governments, international and national agencies about the role of ICT in development. The question often asked is how we can understand the contribution of ICT initiatives to the socio-economic development of a country.

This research was conducted as follows. First of all, the nature of the problem was analysed from four points of view: globalisation, focusing on the global-local debate, discourses around development, transfer of ICT-based innovations to developing countries and the relationship between IS/ICT and organisational change in the context of
a developing country. Secondly, a literature survey was undertaken to discuss these issues. The results of the literature survey guided the empirical research undertaken in two organisations and one rural community in Mozambique. Thirdly, the results of the empirical work were analysed with regard to the four perspectives discussed earlier.

The research objective required the development of a framework for understanding the process of the adoption and use of ICT-based initiatives for development. Theories such as Actor-Network Theory, the Human Environment Model and Structuration Theory form the basis of a framework that was constructed using the results of the fieldwork.

The framework is composed of three levels of analysis: the micro-level analyses the ICT-related initiatives by using the sociology of the translation process from an ANT perspective and by applying the due process model. The meso-level examines the social context within which the ICT-related initiatives are implemented. For this purpose the human environment model (HEM) is used. Finally, the macro-level attempts to describe the interaction between the ICT-related initiatives and socio-economic development. This part of the framework is addressed by the application of the structuration theory and concepts related to sustainable development.

The proposed framework can be used as an analytical tool to guide the analysis of the process of implementation of ICT-based initiatives in organisations and communities, and can also be applied as a normative tool to support the process of introducing a new ICT-based initiative in organisations or communities, especially within the context of developing countries. The author argues that the use of this framework can enhance the likelihood of achieving institutionalisation of an ICT-based initiative within a particular organisational setting.
I declare that

The dynamics of the adoption and use of ICT-based initiatives for development:
results of a field study in Mozambique

is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Esselina Macome
DEDICATION

To my husband Martinho and our children Carmen Taila and Marcelino Isaac
To the memory of my father Marcelino Nhuelane Lucas
ACKNOWLEDGEMENTS

My sincere thanks to Prof. Dr. Johannes Dewald Roode, my supervisor, for his encouragement and invaluable advice, guidance, constructive comments and criticisms during this work.

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To My Lord for health and opportunities.
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<td>Amalgamated Bank of South Africa</td>
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<td>ANT</td>
<td>Actor-network theory</td>
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<td>BCM</td>
<td>Banco Comercial de Moçambique (Commercial Bank of Mozambique)</td>
</tr>
<tr>
<td>BE</td>
<td>Beira</td>
</tr>
<tr>
<td>BM</td>
<td>Banco de Moçambique (Central Bank of Mozambique)</td>
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<td>BPD</td>
<td>Banco Popular do Desenvolvimento</td>
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<td>BPR</td>
<td>Business Process Re-engineering</td>
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<td>CAD</td>
<td>Computer Aided Design</td>
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<td>CAL</td>
<td>Local Advisory Committee</td>
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<td>CFP</td>
<td>Primary Teacher Training Centre of Namaacha</td>
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<td>CIUEM</td>
<td>Eduardo Mondlane University Informatics Centre</td>
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<tr>
<td>CM</td>
<td>Conselho Municipal (city council)</td>
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<td>CMA</td>
<td>Colégio Maria Auxiliadora</td>
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<td>CPI</td>
<td>Comissão Nacional da Política de Informática</td>
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<tr>
<td>CSDIPAU</td>
<td>Computer System Development and Implementation Project Administration UNIT</td>
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<tr>
<td>Dadm</td>
<td>District Administration</td>
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<tr>
<td>DCs</td>
<td>Developing countries</td>
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<tr>
<td>DD</td>
<td>Director of the Department</td>
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<tr>
<td>DE</td>
<td>Departamento do Estrangeiro (Foreign Department)</td>
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<tr>
<td>DMI</td>
<td>Departamento de Matematica e Informatica</td>
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<tr>
<td>DOI</td>
<td>Department of Information Technology and Organisation Methods</td>
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<tr>
<td>DP</td>
<td>Data processing</td>
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<tr>
<td>DT</td>
<td>Departamento de Tesouraria (Treasure Department)</td>
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<tr>
<td>EDM</td>
<td>Electricidade de Moçambique (Electricity Company of Mozambique)</td>
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<td>EMU</td>
<td>Eduardo Mondlane University</td>
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<tr>
<td>ERP</td>
<td>Enterprise Resources Planning</td>
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<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>FDC</td>
<td>Fundação para o Desenvolvimento da Comunidade</td>
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<td>FRELIMO</td>
<td>Frente de Libertação de Moçambique</td>
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<td>GIS</td>
<td>Geographical Information Systems</td>
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<td>GNP</td>
<td>Gross National Product</td>
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<td>Head of Department</td>
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<td>HDI</td>
<td>Human development index</td>
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<td>HEM</td>
<td>Human Environment Model</td>
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<tr>
<td>HO</td>
<td>Head Office</td>
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<td>HRD</td>
<td>Human Resource Department</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>ICT/IS</td>
<td>Information and Communication Technology/Information Systems</td>
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<tr>
<td>IDRC</td>
<td>International Development Research Centre</td>
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<td>IFIP</td>
<td>International Federation for Information Processing</td>
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<td>IIASA</td>
<td>International Institute for Applied Systems Analysis</td>
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<td>IMAP</td>
<td>Instituto de Magistério Primário (Primary Teacher Training Institute of Manhiça)</td>
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<td>INE</td>
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<td>IS</td>
<td>Information Systems</td>
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<td>ISAID</td>
<td>Information Society Africa Development Conference</td>
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<td>ISP</td>
<td>Internet service providers</td>
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<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>IT/IS</td>
<td>Information Technology/Information systems</td>
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<td>MAAC</td>
<td>Mozambican Advisory Acacia Committee</td>
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<tr>
<td>MIS</td>
<td>Management of Information System</td>
</tr>
<tr>
<td>MT or MZM</td>
<td>Metical (Mozambique National Currency)</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health System</td>
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<tr>
<td>OPP</td>
<td>Obligatory Passage Point</td>
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<tr>
<td>PARPA</td>
<td>Programa de Redução da probreza absoluta (Poverty Alleviation Programme)</td>
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<tr>
<td>PNUD</td>
<td>Programa das Nações Unidas para o Desenvolvimento</td>
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<td>RENAMO</td>
<td>Resistência Nacional de Moçambique</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>SADC</td>
<td>Southern African Development Community</td>
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<td>SAF</td>
<td>Structural Adjustment Programme</td>
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<td>SAP</td>
<td>Software Application Product</td>
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<td>SSADM</td>
<td>Structured System Analysis Development Methodology</td>
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<td>ST</td>
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<td>TAI</td>
<td>Technology Achievement Index</td>
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<td>TQM</td>
<td>Total Quality Management</td>
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