

## Summary of PhD Research

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### **Title**

A Socio-Technical Analysis of Decentralisation in the ICT Industry of a Developing Country

### **Supervision**

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### **Summary**

There is a general consensus that some form of decentralisation and local participation is important in the effective provision of information and communication services by the ICT industry. Typical motivations include: more effective and appropriate services for users, increased diversity of applications and content, greater robustness of the overall system. There is however significant tension between those advocating a more decentralised system (similar to the Internet) and those supporting a more centralised system (similar to existing telephone networks).

Current models used for policy formulation and regulation in the ICT industry are largely based on technological-economic principles. This is due to a general assumption that the industry will be governed by rational engineering decisions and a lightly regulated free-market with professional management, unfettered by 'irrational' social forces. However, it is evident that, in developing countries especially, civil society and public sector involvement will be a significant force within the ICT industry. In these contexts inter-organisational and inter-sectoral relationships and economic transactions are mediated by more subtle and complex social interactions due to conflicting motivations (e.g. profit vs. non-profit) and approaches (e.g. professional vs. non-professional management).

There is relatively little theoretical understanding of the socio-technical interactions that shape large-scale, densely interconnected ICT artifacts involving diverse organisations and technologies, and how this affects effective decentralisation of information and communication functions in different social contexts.

### **Research Question**

The goal of this research is to investigate how socio-technical forces within national or regional-level ICT systems restrict or enable more decentralised forms of service delivery. The primary research question is therefore: How do socio-technical factors restrict or enable the effective decentralisation of information and communication functions within the ICT industry of a developing country?

### **Research Methodology**

The proposed methodology will be based on a qualitative approach and use case studies in selected regions of South Africa. A theoretical framework will be developed based largely on existing theories of socio-technical systems, but also drawing on more specific concepts around institutions and inter-sectoral and inter-organisational relationships. Data will be sourced from industry news articles, organisation strategy documents, structured and unstructured interviews with industry participants.

### **Contribution to Knowledge**

The research aims to provide greater practical guidance into how decentralised, local forms of ICT service delivery can be more effective and sustainable by highlighting the significant role played by socio-technical forces within the ICT industry. Moreover, it seeks to contribute theoretical knowledge around the socio-technical aspects of relatively large-scale, inter-organisational ICT system development.

### **About the Researcher**

Paul Plantinga is a Research Assistant and PhD Candidate in the School of Information Technology, at the South African campus of Monash University, Australia. He commenced his PhD in October 2008 after four years in the telecommunications industry as a network engineer and solution architect. He completed his Bachelors, Honours and Masters degree in Electrical Engineering at the University of the Witwatersrand in Johannesburg, South Africa. His primary interest is in the shaping of ICT policy and implementation to better support socio-economic development in developing countries.

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