DOCTORAL CANDIDATE:	Tiwonge Davis Manda
DEGREE:	Philosophiae Doctor
FACULTY:	Faculty of Mathematics and Natural Sciences
DEPARTMENT:	Department of Informatics
AREA OF EXPERTISE:	Mobile and Health Information Systems
SUPERVISORS:	Professor Kristin Braa and Associate Professor Jo Herstad
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Despite significant financial investment over the past decade, the emergence of digital health infrastructure is a mixed bag of failure and partial success. We do not always find the cumulative development of IT competence, or IT capabilities and infrastructures. Maintenance of implemented technologies also remains a challenge. This is, to a large extent, due to dependence on loosely coordinated and short-term project-based interventions, which overwhelm stakeholders with concerns that pertain to the here-and now. At the same time, there is a lack of frameworks that provide guidance on how we can leverage short-term project-based arrangements to provide impetus for long-term digital infrastructure efforts.

This thesis provides conceptual and practical guidance on how to negotiate concerns to design, implementation, use, and maintenance of digital health infrastructure. Empirical evidence for the study is drawn from ongoing efforts to strengthen health management information systems (HMIS) and introduce mobile technology solutions for routine health data communication, in Malawi.

More specifically, the thesis provides guidance on how to synergize top-down and bottom-up implementation approaches, often seen as incompatible opposites, to allow for implementation flexibility and formulation of common long-term visions for digital infrastructure. The thesis, also suggests strategies for enhancing IT implementation and maintenance capacity. Finally, the thesis accounts for the implementation of mobile technology solutions for health (mHealth) within the larger health information systems context. mHealth solutions are often treated as standalone from health information systems they are supposed to integrate with, which has resulted in a lack of guidance on how to adopt mHealth on a large scale..