What are the key lessons of ICT4D partnerships for poverty reduction?

Systematic Review Report

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Executive Summary

The main aim of this report is to summarise the evidence available on the effects of ICT4D partnerships on poverty reduction. The research question: "*What are the key lessons of ICT4D partnerships for poverty reduction?"* guided the review. A further aim of the study was to use systematic and reproducible methods of investigation of the published literature to enable a judgement to be made about the quality as well as the content of the evidence available.

Prospectively, a protocol was developed to guide selection of studies for inclusion in the review. This protocol was designed to reduce bias at all stages of the review. The review was undertaken in five stages; developing search terms and sources to reveal appropriate studies, literature searches using search terms, scrutiny of results of searches to identify studies that fulfilled pre-defined inclusion criteria, data extraction and synthesis of data into a summary of evidence. For all included studies the quality of the research methodology was judged.

From across different regions of the world, literature searches identified 156 publications on ICT4D partnerships that reached the initial inclusion criteria. Searches missed two studies which were identified by the panel of experts. The experts recommended 2 studies for exclusion. After further scrutiny, in accordance with the criteria in the protocol, 53 studies were selected for inclusion in this review.

Summary evidence came from both successful and less successful partnerships in delivering ICT4D initiatives involving governments, the private sector and civil society. Key conclusions emerging from these studies were the importance of attention to the local context and preferably involvement of the local community in the partnership and the need for a clear focus on the intended development outcomes about which all partners agree, preferably in a formal partnership agreement. Better results were evident when a clear action plan was present, particularly when this plan had a long-term focus relating to sustainability and scalability. Partnerships that fostered trust, honesty, openness, mutual understanding and respect, and prioritised relationships between

partners and had a supportive technological environment, in terms of infrastructure as well as policy reported more successful outcomes.

Challenges in the review process included categorising differing interpretations of the term ‘partnerships’, the need to include and synthesise qualitative as well as quantitative research, a lack of studies focusing explicitly on the direct impact of ICT4D partnerships on poverty reduction and the tension of ensuring that the review minimised the bias of the reviewers whilst capturing important issues. The review highlights the need for more studies that use identifiable models of partnership and report on outcomes relating directly to the impact on development goals.

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List of Abbreviations

DAC	Development Assistance Committee
DFID	Department for International Development
EPPI	Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre
GKP	Global Knowledge Partnership
ICT	Information and Communication Technology
ICT4D	ICT for Development
IDRC	International Development Research Centre
IFC	International Finance Corporation
IICD	International Institute of Communication and Development
*info*Dev	Information for Development Program
IT	Information Technology
MDG	Millennium Development Goal
MSP	Multi-Stakeholder Partnership
NEPAD	New Partnership for Africa's Development
PPP	Public-Private Partnership
R4D	Research for Development
RCT	Randomised Controlled Trial
UN	United Nations
WSIS	World Summit on the Information Society

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The review team would like to thank the external reviewers, who reviewed the protocol and the review panel that is reviewing this report. Furthermore, the review team is thankful to the international advisory panel for their feedback about the list of publications selected for the systematic review. The review was made possible with the financial support of the Department for International Development (DFID). However, the views expressed in this report are those of the authors and do not necessarily reflect the view or policies of the Department of International Development or those of the reviewers and international advisory panel.

Statement of Conflict of Interest

None of the members of the review team had any financial or other personal interest in the results of this review. Nevertheless, as members of the research team have published extensively in the field, there was a potential conflict of interest when their publications became selected as part of the review. To minimise such conflict of interest we ensured that none of the members of our team was involved in the evaluation or review of their own publications. In practice, this applied to the following two publications that are written by a member of the review team:

- Unwin, T. (Ed.) (2009) *ICT4D*, Cambridge: Cambridge University Press
- Unwin, T. (2005) *Partnerships in Development Practice: Evidence from Multi-Stakeholder ICT4D Partnership Practice in Africa*, Paris: UNESCO for the World Summit on the Information Society.

Furthermore, it should be noted that David Grimshaw is employed by Practical Action, but is also currently seconded to DFID, the funder of this review, for 60% of his time.

1 Introduction

The main aim of this report is to summarise the evidence available on the effects of ICT4D partnerships on poverty reduction. The research question: "*What are the key lessons of ICT4D partnerships for poverty reduction?"* guided the review. A further aim of the study was to use systematic and reproducible methods of investigation of the published literature that enabled a judgement to be made about the quality as well as the content of the evidence available. The review focuses on lessons from both successes and failures of such partnerships and in particular on the role of governments, private sector and civil society in delivering ICT4D partnerships. It explores existing models of ICT4D partnerships, and synthesises evidence from those studies that used rigorous approaches to understand case studies of partnership implementation across different regions of the world.

The report reaches five specific conclusions about the success factors that are important in implementing ICT4D partnerships:

- Success is increased when detailed attention is paid to the *local context* and the involvement of the *local community* in partnership implementation.
- It is important for such partnerships to have clear and agreed *intended development outcomes*, even where constituent partners may themselves have different reasons for being involved in the partnership.
- *Sustainability and scalability* of the intended development intervention need to be built into partnership design at the very beginning.
- Successful partnerships are built on *trust, honesty, openness, mutual understanding and respect*.
- A supportive wider ICT environment needs to be in place, both in terms of policy and infrastructure, if such partnerships are to flourish and deliver effective development outcomes.

This review was undertaken in response to the Department for International Development (DFID) programme to develop and disseminate systematic reviews in international development that will attempt to map, quality grade and synthesise the evidence in international development in a transparent and open-ended process. The

main purpose of the DFID programme is to "strengthen the capacity to make evidence-informed decisions by providing rigorous and timely assessments of the evidence base to decision makers." (DFID 2010)

This report begins with an exploration of the context within which this specific review is situated, focusing especially on the broader use of partnerships in development practice, the reasons why partnerships have become particularly prominent in the field of ICT4D, and describing some of the models that have been used to implement such partnerships. Section 2 then describes the methodology which is specified to a level of detail that would ensure others can follow the approach taken, and focuses particularly on our definitions and understandings of rigour and quality. The evidence base is presented and discussed in Section 3, with reflections on the review in Section 4. Finally, Section 5 presents our conclusions, including some discussion of the wider context of partnerships and their role in development from both a process and outcome perspective. It also provides a set of recommendations on both methodologies and substantive actions for policy makers, practitioners, donors and those commissioning further research, who are interested in better understanding the role of partnerships in development practice.

1.1 The Context of Development Partnerships

The notion that development outcomes can best be delivered through partnerships has gained considerably increased prominence over the last decade. The terminology of 'bilateral donors' giving aid to 'recipient countries' has thus been largely replaced by that of partner governments working together to deliver shared development objectives, as reflected in documents such as Poverty Reduction Strategy Papers. The recently published *Still Our Common Interest* report by the Commission for Africa (2010: 7), for example, makes this very clear, commenting that 'The Commission put this principle of mutually beneficial partnership at the centre of its report and across it various themes'. Likewise, back in 2000, the eighth Millennium Development Goal (MDG) was unambiguous in its assertion that governments would seek to 'Create a global partnership for development with targets for aid, trade and debt relief' (http://www.un.org/millenniumgoals/global.shtml).

Partnerships have not, though, solely been conceived as being between governments. Instead, this new agenda was explicitly designed to incorporate the private sector as a key component in delivering 'development'. As the sixth target of MDG8 thus states: 'In cooperation with the private sector, make available benefits of new technologies, especially information and communications' (http://www.un.org/millenniumgoals/global.shtml). It is here that the notion of partnerships specifically in the field of Information and Communication Technologies for Development (ICT4D) was firmly placed on the global agenda.

To understand the specificities of this review, it is essential to place them within a broader conceptualisation of development partnerships, so as to provide a framework through which our conclusions may be interpreted. Put simply, it is impossible to understand the technical evidence for evaluating the efficacy of ICT4D partnerships without being aware of the diversity of interests that underlie them. Moreover, the notion of 'partnership' means very contrasting things to different people and organisations. This diversity of meanings of success makes any review of ICT4D partnerships extremely challenging. Furthermore, it is also important to highlight right at the beginning that there are important differences between on the one hand notions of the success and sustainability of 'partnerships' for their own sake, and on the other notions about the success and sustainability of the 'development interventions' that they might lead to. This introductory section therefore seeks to tease out some of these intertwined issues by briefly examining four issues: the historical context within which partnership rhetoric has emerged over the last 20 years; reasons why partnerships have played such an important role in ICT4D initiatives; definitional issues associated with partnerships and partnership models; and the interests underlying partnership implementation.

1.1.1 Historical context of partnerships

The collapse of the Soviet Union at the end of the 1980s paved the way for a new order of international development. The bipolar tensions between US and Soviet spheres of influence were fragmented, and replaced instead by the twin rhetorics of a free market and liberal democracy (Williamson, 1993). Nevertheless, during the early 1990s, notions of a Third Way, involving the private sector in delivering goods and services previously considered to be the responsibility of the state, gained increasing credence, particularly in Europe and North America (see for example, Giddens, 1998). This was driven not

only by an interest in finding new ways in a low-tax era to fund services previously provided by the state, but also ideologically in some quarters by an interest in drawing from the best of both socialism and capitalism in crafting a new kind of society. Accordingly, the concept of social or collective goods, which are public goods that are usually delivered by governments from public funds but can be delivered by the private sector, began to gain wider acceptance. This in turn led to an expansion in the number of Public-Private Partnerships (PPPs), which were being used increasingly to deliver an extensive range of services that had previously generally been considered to be the remit of the state.

By the end of the 1990s, before many of the failings of such PPPs had become widely apparent, this rhetoric of partnership had begun to be applied increasingly in the field of international development. There were two apparent drivers for this. First, as the economic growth agenda came to the fore of efforts to 'eliminate poverty', it became blatantly obvious that the private sector, as the key engine of growth, had to be engaged and encouraged to participate therein. This is typified, for example, by the work of the International Finance Corporation (IFC), that part of the World Bank Group specifically designed to foster economic growth in developing countries by financing private sector development. Second, though, bilateral donors increasingly began to seek out ways in which the private sector could be used as a means to generate additional funding for development initiatives. Whilst such donors had long since begun to establish partnership relationships with civil society organisations, it has only been since the mid-1990s that serious efforts to engage the private sector collaboratively in implementing 'development' initiatives have begun to be made.

Another important impetus to the rhetoric of partnership, as noted in the Commission for Africa report mentioned above, has been growing recognition that the former terminology of recipients and donors is increasingly inappropriate. Whilst many would see this merely as being a change in the words used, without there being any fundamental change in attitude amongst staff in bilateral donor organisations, the increased use of such terminology has meant that the notion of all kinds of partnership in development practice has become more widely accepted. The Development Assistance Committee (DAC) of the OECD has been particularly prominent in encouraging donors to shift their focus to a more collaborative partnership based relationship with the governments of

poorer countries (see for example DAC, 2000), reaching its culmination in the 2005 Paris Declaration on Aid Effectiveness (OECD no date) which explicitly sought to lay out a framework for partnerships in promoting development.

1.1.2 ICT4D Partnerships

Against this wider background of an increased global move towards development partnerships, there have also been very specific reasons why partnerships have played such an important role in ICT4D initiatives (Unwin, 2005, 2009). Three have been of particular prominence: the role of the Information and Communication Technology (ICT) industry in wider processes of globalisation; the need for technical capacity in delivering ICT-based initiatives; and the impact of the World Summit on the Information Society (WSIS). Thus, the rapid expansion of the Information Technology (IT) sector in the 1990s, and its significant impact on the set of processes collectively simplified into the notion of 'globalisation' (Friedman, 2006), led many to believe that ICTs could be used to provide profound development impacts that would enable poor people and states to 'bridge the digital divide'. The coincidence of this very rapid technical advance with the enthusiasm surrounding the new millennium in 2000 created a fervour of belief amongst politicians and practitioners that working together they really could use ICTs to overcome many of the impasses to achieving effective development outcomes.

Second, though, most governments and aid agencies did not have the necessary expertise to grapple with the complexities of the delivery of such ICTs on the ground, and therefore they had to turn increasingly to partnerships with the private sector as a way through which they could indeed be implemented. The ICT field had expanded so rapidly that most 'development practitioners' had little idea of what was necessary in order for its potential impact to be achieved. Unfortunately, most ICT specialists likewise had little real understanding of the complexity of implementing effective development programmes. Consequently, many costly mistakes were made and numerous ICT4D initiatives failed to deliver on their potential (Heeks, 2006). Despite this, the notion that partnerships were central to ICT4D became firmly embedded, and over the last decade lessons have begun to be learnt as to the key factors that are necessary for their success. It is these with which this systematic review is particularly concerned.

A third important reason why partnerships have become so central to ICT4D practices, has been their specific advocacy through the meetings before, during and after the WSIS summits in 2003 and 2005, and the various subsequent initiatives that have emerged from them. From the late 1990s, major global ICT corporations have sought actively to promote their potential contribution to development, and they have subsequently gained an increasingly influential, albeit controversial, position in global dialogues on development agendas (Martens, 2007; Unwin, 2009). WSIS (2003 and 2005) was thus the first United Nations (UN) summit where the private sector had such a significant presence, and the private sector has continued to play an important part in organisations established to implement the summit's recommendations (Souter with Jagun, 2007).

1.1.3 Partnership Models and Development Practices

Two critical issues arise from the above discussions: first, the ways in which partnerships are defined, and second, how these relate to notions of 'development'. Neither are easy to summarise, but both are central to this review. Moreover, it is critically important to distinguish between those models that focus on the importance of partnerships in their own right, and those that emphasise the ways in which partnerships actually contribute to development outcomes, however these are defined.

The Partnering Initiative's highly influential model of the partnering cycle is typical of the first of these approaches (Figure 1), focusing as it does on the four key stages of scoping and building, managing and maintaining, reviewing and revising, and sustaining outcomes. Critically, the final stage of moving on is conceptualised as leading back into a new phase of scoping, so that it is the partnership that is maintained. From such a perspective, the various partners involved see value in the partnership for its own sake, and wish to find ways of maintaining it. This model and developments from it have been used extensively, for example, in a wide range of UN contexts (http://www.thepartneringinitiative.org/individual_development/Partners_in_Action.jsp), and have been used to train partnership practitioners in fields as diverse as health and the environment.

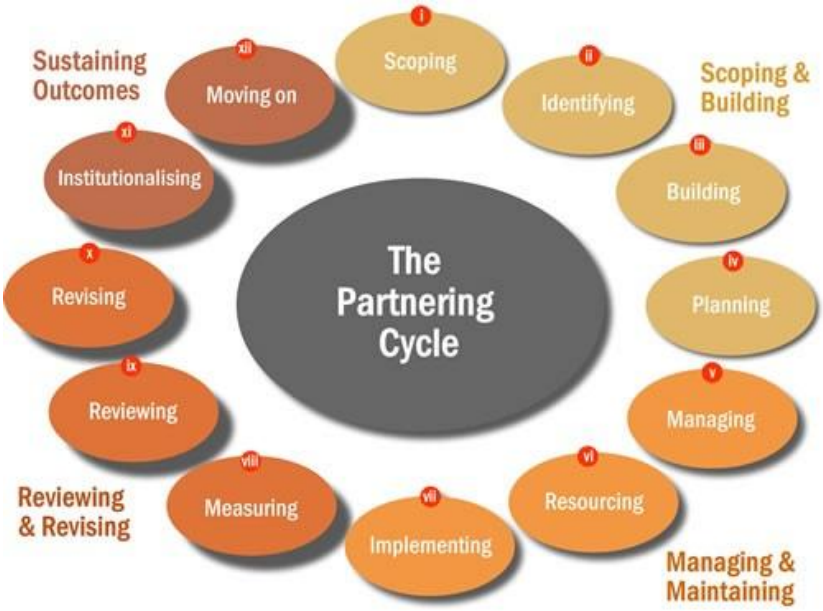

Figure 1: The Partnering Initiative's Partnering Cycle

***Source*: originally derived from Tennyson (2003)**

Working specifically on the ways in which ICT partnerships can contribute to educational initiatives in Africa, Unwin (2005) in contrast has proposed a very different kind of model that focuses more on ways in which partnering can contribute to specific intended development outcomes than on the mechanics of partnership building themselves. This, for example, paid particular attention to the different types of partner involved in any initiative, and also the resource contributions that they can offer, as well as the expectations that they have from being involved in such a partnership. A somewhat similar, linear model has been proposed by Cassidy, again working in the context of ICT and education partnerships, but this time drawing on experiences from the World Economic Forum's Global Education Initiative (Figure 2). This emphasises four main stages in the process, beginning with the importance of having in place values, a vision and organisational readiness. He next identifies the need for a project management office, addressing management issues, planning, communications and resource mobilisation, and that this then facilitates the integration of ICT and other partners with the needs of schools and communities, which in turn leads to development outcomes or results (for a wider discussion of partnerships using ICTs for education, see the work of UNESCO and the World Economic Forum's Partnerships for Education Initiative, http://www.pfore.org).

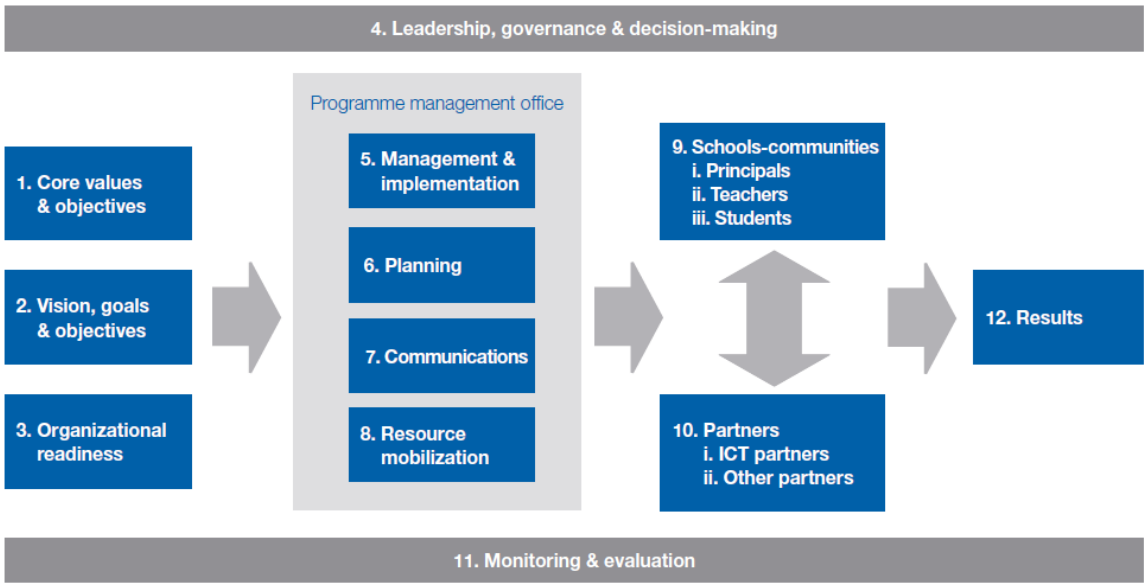

Figure 2: The GEI Model of Effective Partnership Initiatives for Education

***Source*: Cassidy (2007)**

Whilst different authors would place varying emphasis on the specific importance of any one factor in a particular context, there is growing consensus among practitioners around some of the key attributes that are necessary for successful partnership implementation (see for example, United Nations, 2002; Global Knowledge Partnership, 2003; and Tennyson, 2003). These include: the importance of trust; having a clear output based focus for the partnership; the need for enthusiastic, able and committed leaders; having a clear emphasis on sustainability from the outset; a balance between the demand for and supply of resources; the investment of time in partnership building and networking; and the essential importance of a transparent and ethical basis for the partnership. This systematic review seeks to explore in detail the extent to which evidence specifically relating to ICT4D partnerships reflects these broader arguments.

Such attributes of successful partnerships apply regardless of the definition of development that is adopted. One of the very considerable complications in undertaking this systematic review, though, has been that different kinds of partnership initiative have tended to address very varied development objectives. Whilst the majority have focused on partnerships that seek to contribute to economic growth, and thus support the hegemonic belief that this will indeed eliminate poverty, far fewer have explicitly sought

directly to address the needs of some of the poorest and most marginalised communities (Kleine and Unwin, 2009). An ICT4D initiative might, for example, indeed contribute successfully to economic growth, but this need not necessarily actually do anything to reduce poverty (Unwin, 2007). Hence, it is extremely difficult to measure the impact of ICT4D partnerships in any purely objective way. This is a point that is reiterated throughout our findings in the subsequent sections of this review.

Another definitional issue that should be addressed concerns the shift that has taken place over the last decade from the use of the term public-private partnerships to multi-stakeholder partnerships (MSPs) (see for example, Global Knowledge Partnerships, 2003; and Unwin, 2005). It is widely argued that one of the key failings of early partnerships was that they tended to involve only private sector companies and local or national states; they were indeed only public-private partnerships (Unwin, 2005, 2009). Their failure to engage civil society organisations, such as healthcare workers unions and local NGOs, as well as paying too little attention to the roles of multilateral donors and foundations, meant that they were unable to achieve the necessary buy-in to make them sustainable or indeed appropriate to the needs of communities where they were implemented. Such recognition has led to the increasing use of the term multi-stakeholder partnerships, which is specifically intended to emphasise the importance of this diversity of partner types.

1.1.4 The Interests in Partnership

A final fundamental issue that complicates any attempt to create an objective review of the impact of ICT4D partnerships is that of the interests that underlie them. It is, for example, no coincidence that the private sector has explicitly sought to use partnership initiatives to engage pro-actively in influencing development debates over the last decade. It has already been noted that WSIS was the first UN summit at which the private sector was permitted to participate fully, but through partnership arrangements global corporations have more recently come to be formally represented in many other arenas that were previously purely inter-governmental in character.

Martens (2007: 5-6) has highlighted eight key risks associated with the way in which the term ‘partnerships’ is rapidly becoming the new mantra that shapes UN discourses: the ‘growing influence of the business sector in the political discourse and agenda-setting’;

'Risks to reputation: choosing the wrong partner'; 'Distorting competition and the pretence of representativeness'; 'Proliferation of partnership initiatives and fragmentation of global governance'; 'Unstable financing – a threat to the sufficient provision of public goods'; 'Dubious complementarity – governments escape responsibility'; 'Sensitivity in partnerships – governance gaps remain'; and 'rends toward elite models of global governance – weakening of representative democracy'. While he is right to draw attention to the challenges that partnerships pose to traditional forms of governance, this does not necessarily mean that well-designed multi-stakeholder partnerships cannot bring real development impacts through the use of ICTs. This does, though, depend critically on how 'development' is defined, whether purely as economic growth, or as focusing on alternative social or political agendas (Unwin, 2009; Kleine and Unwin, 2009).

The interests of the private sector in promoting ICT4D partnerships need always to be highlighted; very little altruism survives in the business world. While there are many philanthropic and corporate social responsibility initiatives, most private sector involvement is fundamentally linked to the need to increase profits in the interests of shareholders. All too often, partnerships are used to support pilot projects, that the private sector then hopes governments or international donors will subsequently fund, thereby expanding their markets and enabling them to generate enhanced profits. It is thus no coincidence that mobile 'phone companies are actively involved in m-development initiative in Africa, so as to continue to expand their markets at a time when most of the richer countries of the world are increasingly saturated by mobile coverage. This emphasis on well-funded pilot projects delivered through multi-stakeholder partnerships tends to lead to schemes that are neither scalable nor sustainable. All too often, substantial sums of money are pumped in to show that a particular piece of technology can indeed be effective in remote areas, with little thought being paid to the eventual costs of nation-wide rollout, that are way beyond the limited budgets of the governments of poor countries, or indeed those of international donors. Moreover, some of the literature on ICT4D partnerships is funded directly or indirectly by the private sector, and it has therefore been of critical importance for this review to try to disentangle the interests behind the research we have examined.

2 Methodology

A systematic review is a systematic methodology that uses explicit and rigorous methods to aggregate and interpret the evidence on a topic area under review. Specifying the methodology in advance is designed to reduce bias from the review. Our review is particularly inspired by the methodologies used and developed at the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre. This section discusses the methodology that was used for this review. First, it introduces the search strategy that was used to identify relevant publications, and the criteria that were used for including publications for consideration in the review. Second, it discusses how the reviewed publications were selected from the resulting list of publications, in order to make the number of publications for review manageable within the time frame available. Third, the section then explains how data relevant to the aim of the review was extracted from the publications for further analysis. Fourth, the section explicates how the extracted data was subsequently analysed and synthesised, and finally, it highlights some of the methodological challenges that were faced during the review.

2.1 Systematic Search Strategy

The aim of literature searching is to locate all relevant studies (Thomas and Harden, 2008). Therefore, the first stage of this systematic review was to develop a search strategy to find as many publications as possible that were relevant to the research question, including journals, books, grey literature and unpublished studies. Nevertheless, there is a need for balance between the sensitivity of the search to identify as many publications as possible, but at the same time keeping the number of retrieved publications manageable by excluding publications that do not contribute to the evidence. Furthermore, because of the interdisciplinary nature of ICT4D and the range of terminologies used in different disciplines, some flexibility of the search strategy was required. This section discusses the strategy that was used for this systematic review, in particular the sources that were searched, the search terms that were used and the criteria that were chosen during the search to in- or ex-clude publications.

2.1.1 Sources

This systematic review sought to draw on a wide range of different materials, such as journal articles, books, grey literature and unpublished studies. It particularly drew on materials produced by three main types of author: academics, policy makers and practitioners. Therefore a diversity of sources was searched, not only academic databases, but also grey literature and relevant governmental sources. However, given the vastness of (electronic) resources available, a blended selection of search sources most relevant to the research question was made, to ensure the diversity of the retrieved materials. The main sources searched were (for a complete and detailed list of the sources, see Annex B):

1. ***Relevant academic journals***
   Relevant academic journals in three areas closely related to the review question, namely ICT for Development, Development Studies and Management of Information Systems, were identified. The 10 most relevant academic journals for both ICT4D as well as Development Studies were inspired by the 'ICT4D Journal Impact Table' and the 'Development Studies Journal Ranking Table' as proposed by Richard Heeks on his blog (http://ict4dblog.wordpress.com/). Furthermore, the 10 most relevant academic journals to the Management of Information Systems were inspired by the MIS Journal Rankings from the Association for Information Systems. Each of these 30 journals was searched individually for relevant publications.
2. ***Electronic databases and library catalogues***
   A small selection of key library catalogues, mainly those that merge catalogues from different institutions, were searched, particularly to find relevant books. Typical of these were the University of London online bibliographical catalogues and search engines. Furthermore electronic databases including the Web of Knowledge, EconLit, Ingentaconnect, ScienceDirect, SCOPUS, JSTOR, ESDS and ERIC were consulted.
3. ***Search engines***
   Online search engines such as Google and Google Scholar. As these search engines produced numerous results (for example, the combinations of 'ICT4D' and 'partnership' in Google Scholar gives 18,100 results), many of which were not necessarily relevant, the results were only considered until a point of

'saturation' was reached; after 20 results in a row that were outside the inclusion criteria, the remaining results were not considered.

4. ***Websites of relevant organisations***
   The websites of relevant organisations active in the field of ICT4D and partnerships, such as infoDev, IDRC, Eldis and the ICT4D Collective were searched for relevant materials.

During the search process, a record was kept of each of the searches and the number of results it produced, although it is hard to make an estimate about how many of these results were actually relevant for the review. For example, a small number of relevant results were of more use to the review than a high number of irrelevant results. Furthermore, each of the materials retrieved for the review was tagged with the source of where and with which search term it was found. This enabled a quantitative analysis of where most of the reviewed materials were found and the search terms that were most helpful in identifying material (see Annex C).

2.1.2 Terminology

The main focus of this systematic review revolved around ICT4D and partnerships, and in order to narrow down the search strategy to these themes, a small number (13) of relevant search terms was proposed in the review protocol (for a complete and detailed list of the search terms, see Annex D). However, in practice, it turned out that some of the broader search terms mainly generated 'noise' of irrelevant materials and therefore the list of search terms was adjusted throughout the search process based on the experiences of the search itself. It was mostly narrowed down further to partnership related jargon, such as 'public-private'. The search with a particular search term was continued until a 'point of saturation' was reached in which the trade-off between continuing the search and the number of relevant publications that was likely to be found was low. If a search term did not generate any or very few results in the first place, there was no need to search further in combination with other search terms, as this would not result in any additional material that had not already been found. Furthermore, when going through the vast number of results typically generated by a search in Google or Google Scholar, the list of results was not considered any further after passing by 20 non-relevant results one after the other: our 'point of saturation'.

Depending on the source searched, search terms could lead to a vast number of results, many of which were not always relevant. For example, the term 'ICT' or even 'ICT' in combination with the term 'partnership' could result in a wide range of references on this topic that were not relevant to development practice. In such cases, different strategies were used to narrow down the search towards less and more relevant results. The choice of strategy depended on the source that was being searched and the number of results from initial searches with more general search terms such as 'ICT' and 'partnership'. First, combining the search terms with the use of the 'and' operator was a way to narrow down the search towards more relevant publications. Second, in the vast realm of Google, searching for just PDF documents helped to direct the search towards publications. Third, searching only the titles and abstracts of journal papers, rather than the full paper helped to identify the publications most relevant to the review question. Furthermore, the 'point of saturation' was again chosen when results typically generated by a search passed 20 non-relevant results one after the other.

A particular challenge of this review was the diversity of terms that are used to refer to the use of information and communication technologies in development practice. Thus, ICT4D, ICTD, TIC4D, ITD and various other permutations were used in the search. The review took note of these differing terms, and sought to identify publications that indeed explored partnerships that involved information and communication technologies in development practice, regardless of the precise terms used to describe them. However, some of the sources were already specifically focused on ICT4D, such as some of the ICT4D related journals, and therefore the use of these ICT-related permutations was often omitted in the search of these particular sources.

2.1.3 Inclusion Criteria

The number of results generated by the search process (156) was assessed for inclusion in the review against a set of predetermined inclusion criteria. It was important that these criteria were not defined too narrowly, as that would have increased the risk of missing out on potentially relevant materials, but at the same time if the criteria had been too broad, this would have resulted in information that was hard to compare and synthesise. This section discusses the criteria that were used for inclusion in more detail:

1. ***ICT4D partnerships***

   The main focus of this review is ICT4D partnerships, and so only materials that addressed such partnerships were considered for review. It should be emphasised here that this was *not* a review of all ICT4D initiatives, but rather an analysis of the factors that affect the success or failure of partnership-based ICT4D programmes.

2. ***Language***

   This review primarily searched for and included materials written in English, although key material in other languages was also considered. Members of the review panel read German, Spanish, Dutch, French, Portuguese and English, and so some non-English material was indeed explored. Ultimately, though, all of the material chosen for final inclusion was indeed written in the English language.

3. ***Low- and middle-income countries***

   Because of the explicit focus on poverty reduction, the review only included studies that focus on low- and middle-income countries (as defined by the World Bank). The review was furthermore sensitive to the geographical coverage of the retrieved materials, which was informative about the geographical areas where evidence on ICT4D partnerships is still lacking. We checked that the final body of material selected did include examples from Africa, Asia and Latin America and the Caribbean. (See Table 3.4)

4. ***Publication date***

   Given the rapidly changing nature of ICT4D, only studies published since 1990 were included.

5. ***Type of research***

   Studies based on qualitative, quantitative and mixed research were all considered for review. Our focus was on identifying as diverse a series of publications as was consistent with our inclusion criteria, and to seek to draw conclusions about the types of evidence and arguments that varying approaches contributed to our understanding of ICT4D partnerships.

6. ***Type of material***

   The primary focus of the review was on empirical studies, including case studies and to a lesser degree, accounts of actual involvement in ICT4D partnerships. The review primarily focused on articles or report-like materials and therefore materials such as power point presentations, flyers, editorials and websites were not considered for inclusion in the review.

7. ***Type of authors***

   The selected materials were chosen as far as possible to represent diverse types of authors, so that academics, policy makers and practitioners were all represented in the final selection.

8. ***Quality***

   The quality of evidence is paramount for systematic reviews. Although we were keen to incorporate a diversity of types of research in this review, our sampling strategy meant that the majority of the publications examined adopted a qualitative methodology. This presented us with a challenge, since as Thomas and Harden (2008: 6) have argued, 'assessing the quality of qualitative research has attracted much debate and there is little consensus regarding how quality should be assessed, who should assess quality, and, indeed, whether quality can or should be assessed in relation to 'qualitative' research at all'. While we strongly believe that all types of research should be evaluated in terms of quality, and there is nothing inherently problematic about judging qualitative research on quality, it is evident that the criteria for so doing vary between different approaches. In particular, the definitions of quality often vary significantly between quantitative and qualitative approaches to research.

   We believe that there is considerable value in combining both qualitative and quantitative approaches in research. In particular, we agree with Baxter and Eyles's (1997) suggestion that there are common elements to the ways in which rigour can be defined in both broad approaches, including an emphasis on credibility, transferability, dependability and confirmability. These criteria underlay our overall approach to quality, not only for the academic papers, but also more generally in reviewing the other types of material that we considered.

For academic research, we also focused particularly on factors such as the reputation of the journals in which papers were published, the confidence we had in the research methodologies, the ways in which conclusions were drawn from the empirical data gathered, and the extent to which they reflected appropriate critical analysis.

In practice, in undertaking our review, we were particularly struck by an apparent trade-off between relevance and quality in deciding about the inclusion of publications for review. A real challenge we faced was that some of the most relevant material, commenting for example on the factors that appeared to those involved to have been important in leading to the success of their partnerships, was not necessarily of the highest quality in terms of the rigorous research criteria that we would normally expect to have included. Consequently, we sought to achieve a balance, by focusing primarily on the highest quality material, as represented for example by evidence of international peer review, but also including material of less academic rigour that we deemed to be of particular importance. In drawing our conclusions, we have always sought to make this distinction clear, and to focus primarily on conclusions that seem to be supported by both types of evidence.

9. ***Relevance***

Throughout the process, search results were assessed for their relevance to the review by searching the document with the search terms through which it was initially found. If one of the search terms only appeared once in the whole document or only in the appendices, footnotes or bibliography, the document was not considered relevant enough to be included in the review. Furthermore, documents in which the word partnership solely appeared as part of a partnership name, such as 'Global Knowledge Partnership (GKP)' or 'New Partnership for Africa's Development (NEPAD)', were also not included in the final selection. However, without access to a digital version of the full publication, as with printed books, it was not possible to be certain that these publications were actually not relevant.

2.2 Study Selection

The use of the sources, search terms and inclusion criteria introduced in this section generated an initial list of 156 references. However, the initial aim proposed in the review protocol, taking the time frame of the review into account, was to select approximately 50 publications for detailed systematic review. Therefore, an internal review and ranking mechanism based on the expert knowledge of our review team was developed to select the 50 key publications from the list. Wherever possible an abstract or executive summary was included in the list of references and based on that each of the four members of our team voted whether they thought the publication should be included ('yes') or excluded ('no') from the review or whether they were not sure ('?'). These votes were then combined and only the publications that had a least two positive votes or one positive vote and at least two question marks were selected. This resulted in a shortened list of 53 publications.

Subsequently, this list of publications was circulated to an international advisory panel of 25 experts in the field, who were asked for their recommendations about the appropriateness of the references, both in terms of which references should be excluded or given low priority, as well as additional references that might need to be included. The advisory panel consisted of a balanced representation of academics, practitioners and people from high-income countries, as well as low and middle-income countries. However, out of the 25 people who were approached, only 11 people provided feedback about the list of references in varying degrees of detail (see Annex G for a list of the advisory panel). The low response rate and the sometimes minimal feedback was largely due to the voluntary nature of the task, which provided little incentive for people with busy diaries and multiple commitments to prioritise our request, however much they were interested in the topic. Although the overall feedback from the panel was very useful for the systematic review, their comments and proposed references suggested that we may not have sufficiently emphasised the specific focus of our research on the development impact of partnerships on ICT4D programmes. Most of the 18 references suggested by the panel, did not comply with our criteria for inclusion in the review, mostly because they did not specifically focus on partnerships, but instead were key references on ICT4D in general. Only two of the references they suggested were actually ultimately included in the list of references. Furthermore, there was little agreement among the comments of the panel about the references to be excluded.

Therefore, only two references that were recommended for exclusion by at least three experts of the panel were actually excluded from the review. Overall, as a result of the comments from the international advisory panel, two references were removed from and two added to the original list of 53 references, which brought the final list of references for review back to a total of 53 references (see Annex A for the complete list of references that were reviewed).

2.3 Data Extraction

The nature of the documents in the final list of references was predominantly qualitative. As one of the experts from the advisory panel commented 'the references seem skewed towards qualitative critiques of partnerships, but I realise there is little about partnerships in development that has been studied in a quantitative approach'. One of the difficulties of synthesising such qualitative studies is what to count as data or findings. As Thomas and Harden (2008) have argued, deciding what to extract from qualitative studies is much more difficult and less straightforward than from quantitative studies. Furthermore, due to the multidisciplinary nature of ICT for Development (ICT4D), the selected publications had wide-ranging foci, which made them more difficult to compare than for example a range of health-related interventions with a concerted focus.

To extract and capture the key concepts relating to the review question from the documents, we developed a review table that was filled out for each of the 53 publications (see Annex E for the design of the review table). Each member of the team was allocated a number of the references to read and based on their personal reading filled out a review table for each of these. Documents of less than 30 pages were all read in full, whereas for documents of over 30 pages, the introduction, conclusion, and the parts of the document relevant to ICT4D partnerships were read fully. The first half of the table was designed to classify the documents using characteristics such as the type of document, the geographical area it covered and the type of partnership, to be able to characterise and compare the review materials in a more quantitative manner. The second half of the table was designed for a structured extraction of content relevant to the key research question *'What are the key lessons of ICT4D partnerships for poverty reduction?'* The content was extracted through a number of 'interview questions', about for example the success and failure factors of partnerships, which were answered by the person who read the publication and possibly illustrated by quotations

from the publication. Although the table in theory seemed very suited for the purpose of our systematic review, in practice the content of the publications did not always fit easily into the table. An important reason for this was that most of the publications did not necessarily address the mechanisms of the partnerships in great detail. Moreover, after reading the materials in detail, there were several publications that were not as relevant to the review as their title and abstract or executive summary had suggested. Nevertheless, to persist with our avowed systematic approach, these publications were still included, although it meant that not much of their content was extracted into the review tables.

2.4 Content Analysis

Given the multidisciplinary and largely qualitative nature of the review materials, the content in the review tables (Annex E) was subsequently synthesised further by using the qualitative data analysis software Atlas.ti (Hwang, 2008). Once all of the content from the review tables had been uploaded into this software, the content from the second half of the tables as well as the question about motivations for partnerships in the first half, were inductively coded. In the light of the review question, the codes predominantly focused on factors that were affecting partnerships in positive or negative ways, but also paid attention to the way partnerships were defined and to the motivations for partnerships. Throughout the process, the codes were further refined into categories and themes, which formed the basis for the discussion of the findings in the next section.

2.5 Methodological Challenges

Systematic reviews originate from evidence-based medical practice and their methods are particularly well developed for certain types of medical research, such as randomised controlled trials (RCTs) (Thomas and Harden, 2008). However, methods for the systematic review of qualitative research are still being developed and are thus subject to debate (Dixon-Woods, *et al.*, 2001; Dixon-Woods, *et al.*, 2006; Barnett-Page and Thomas, 2009). Moreover, these debates are still largely dominated by discussions about qualitative research that is related to well-structured (medical) interventions. DFID is now exploring and developing the use of systematic reviews in international development, to which this systematic review is a contribution. Apart from synthesising the available evidence in response to the review question, this systematic review also

seeks to contribute to these methodological debates. This section reflects on some of the methodological challenges that were faced in this systematic review. In particular, it discusses issues related to the nature of the publications, the systematic nature of the search, and the impact these had on the synthesis of the selected publications.

2.5.1 Nature of the publications

Three important challenges in relation to the nature of the publications were: synthesising a range of heterogeneous publications; a lack of direct relevance of the publications to the review question; and the inevitable trade-off between the quality and relevance of publications.

Systematic reviews that focus on evidence-based medical interventions, which are typically based on RCTs, have a predominantly homogeneous nature, and publications tend to be well structured around sections such as background, methods, results and conclusion. In contrast, ICT4D is interdisciplinary in nature, which means that publications are typically diverse and cover different disciplinary perspectives as well as epistemological traditions. As a consequence, extracting and synthesising relevant data from the heterogeneous range of publications that resulted from our systematic search was not straightforward and did not fit well into structured tables to present the results.

Another characteristic of the publications is that partnerships represent a 'process view of development' rather than an 'outcome based view', which implies that they are a means rather than an end for ICT4D projects. As a result, most of the publications did not explicitly set out to report on the impact of partnership interventions and therefore did not directly address the question that this review tried to answer. Many, for example, reported on ICT4D projects that were undertaken in partnership, but did not discuss the practicalities of the partnership in detail. Consequently, there was a mismatch between the review table, which was developed to extract the data relevant to the review question, and many of the actual publications under review. In order to produce a satisfactory synthesis, it was therefore necessary to go beyond the contents of the original studies, and read more widely around the subject (Thomas and Harden, 2008).

Another challenge was the tension between this lack of direct relevance to the review question and the quality of the publications in terms of inclusion in the review (see above

2.1.3: 8). Some of the publications selected for review did not have as clear a link between evidence and conclusions as we would have liked, but at the same time they were among the most relevant publications for the review question, focusing explicitly on the impact that partnerships had on development processes. Drawing on Thomas and Harden's suggestions (2008) we included all of the short-listed publications in our analysis, but took particular care to differentiate between them in drawing our conclusions. In practice, similar to the findings of Thomas and Harden (2008), those studies that were either less rigorous or less relevant contributed little to our synthesis, whereas the more relevant and more rigorous studies contributed most to the conclusions. There was considerable homogeneity in the key messages about partnerships in our review material, and a few less frequent observations. These less frequent conclusions are only recounted where they derive from the more rigorous studies examined. The character of the publications, with some being case studies and others meta-reviews examining partnership practices meant that there was also a risk that some studies may simply have echoed each other's rhetoric on partnerships without additional evidence being introduced.

2.5.2 Systematic nature of the search

Systematic reviews distinguish themselves from other type of reviews by their systematic nature that puts great emphasis on transparency, rigour and replicability. Despite the value of this approach to promote evidence-informed policy making, it did at the same time pose challenges to our review. First, given the multidisciplinary and heterogeneous nature of the selected publications, they did not necessarily have a shared terminology or conceptual framework. Although our review covered diverse terminologies, we might have still overlooked other relevant terms and therefore missed out on relevant publications that happened to use a different terminology.

In the practice of the search, terminology specifically related to ICT4D and partnerships, such as 'public-private', led to the most relevant publications, whereas more general search terms generated a lot of 'noise' of less relevant publications. Nevertheless, despite using such very specific search terms, there were still a number of publications in the final list of references that had fulfilled the inclusion criteria, but which on reading turned out to be not too relevant for the review. Furthermore, there were very few books among the search results. On the one hand, this could be because of the relative

'immaturity' of the ICT4D field and the small number of books written on this topic. On the other hand, unless books were fully available online or their title or content pages included some of the search terms it was hard to capture them in the search.

The systematic structure of the search process might be seen as leaving little room for the expertise of researchers to make judgments during the search process, but this need not always be the case. Even with a team of experts in the field of ICT4D, the systematic character of the review process tends to give preference to the expertise of search engines and bibliographical databases to identify relevant publications. Although the search engines provide a good starting point for the search, an experienced researcher can follow up on promising leads during the search process, which a search engine does not pick up on, simply because it is not 'intelligent' enough to do so (although search engines are becoming smarter every day). The diverse nature of the publications made it more challenging to develop adequate mechanisms to select publications for inclusion in the review, and therefore expert judgments were also included into the search process. Not only did our review team make a first selection of the references to be included in the review, but also an international advisory panel was then consulted about the appropriateness of the references selected for review. However, the voluntary nature of the latter made it difficult to find experts willing to contribute and even those who did volunteer might have had limited time to spend on it, making their judgments less detailed and critical than originally expected. This meant that those external reviewers who did comment in detail had much greater influence on the revisions. We would nevertheless still like to reiterate our thanks to those who did comment, in whatever form.

2.6 Conceptual Challenges

ICTs have been used in development projects for many years, yet the effectiveness of these interventions is still contested. One of the key areas of debate is the extent to which numerous pilot studies, case studies, or other small-scale interventions can add to the body of evidence. How reliable are the findings from a small pilot study carried out in only one location? How can such a study be compared to apparently similar studies carried out in other locations? Is a project that uses a mobile phone to deliver information comparable to one that uses the Internet? In essence, all these questions are about the generalisability of the findings.

Different interpretations of projects also complicate the gathering of evidence. Some projects may be conceived as development interventions where the design of the project is to deliver specific outcomes in the field that are measurable. Data can then be collected, most typically in the framework of the popular 'logframe' approach, and fed back to donor communities to show accountability for the spending of the aid money. Yet other projects are specifically designed as research projects to test out an idea, hypothesis or perhaps sometimes some specific new technology. How can a development project be compared with a research project?

A further conceptual challenge contained in the review question is the notion of poverty reduction. Few papers specifically provided evidence of their intervention leading to poverty reduction. For example, Sein *et al.* (2008) provide only anecdotal evidence of the impact of ICTs. Even then the impact is rather measured in terms of more intermediate factors such as an increase in entrepreneurial activities or an increased availability of market price information, both proxies for measuring economic development. None of these factors say anything directly in terms of impact on poverty.

The concepts of success and failure are far from clearly articulated in the literature reviewed. In few papers was there any discussion of failure. Some proxy measures of failure such as 'challenges' were used by Braund *et al.* (2006) and 'factors hindering success' were used by McNamara (2008). Although our central domain of study is ICT4D, we draw on other relevant disciplines such as information systems, which are in essence a more generalised form of enquiry. The problematic nature of researching failure of information systems was well articulated by Sauer (1993) who adopted the view that a system fails when operation or development ceases.

The concept of success has most often, in the papers reviewed, been related to the concept of sustainability. For example, Sein *et al.* (2008) use five types of sustainability as success measures: economic or financial, social, technological, institutional and environmental. The role of partnerships is then conceptualised as supporting sustainability. Partners provide contributions to one or more of these dimensions of sustainability, for example finance or content. Many of the papers, for example McNamara (2008), list success factors as being things that should happen. This kind of

normative approach, though, is not always based on firm empirical evidence; rather it tends to reflect the belief systems of the author(s). As such the prescriptions may or may not be useful to policy makers. In making this observation, though, we should stress that normative arguments can be adopted in both quantitative and qualitative research, and that some normative assertions are indeed based on very rigorous, high quality research practices. The next section reviews the evidence in more detail.

3 Synthesis: the Contribution of ICT4D Partnerships to Development Practices

Typically, the main product of a systematic review is a synthesis of research findings to answer a review question. As discussed in the previous section, there was a challenging gap between our review question and the evidence that was available from the publications under review, particularly regarding the impact of partnerships on poverty reduction, which complicated the synthesis. This section discusses this synthesis of the research findings, starting with quantitative characteristics of the research reviewed. Subsequently, the section highlights different understandings of, and motivations to engage in, partnerships. The next section then presents a range of factors that can affect partnerships in both positive and negative ways and thus contribute to their success or failure. Finally, the section addresses the relationship between effective partnerships and development outcomes and the lack of evidence thereof in the reviewed publications.

3.1 Characteristics of the Research Reviewed

As explained in the previous section, each of the 53 reviewed publications was classified according to a number of characteristics, such as the type of publication and geographical coverage. This section presents an overview of these characteristics in a tabular format, illustrating the diverse nature of the materials (see Annex A for a complete list of the references). Nevertheless, these tables do not necessarily give an unambiguous representation of the publications, as some publications cover different categories and others overlap in terms of authors or ICT4D projects under discussion and therefore count double. Moreover, publications did not always fit neatly into the categories and therefore these tables should only be considered as an approximation of some ‘real’ picture.

3.1.1 Type of publication

As illustrated in Table 1, the review covered a diversity of publications but concentrated on academic journal papers.

Journal paper	17
Donor report	9
Conference paper or workshop proceedings	8
Other reports	6
Book or book chapter	5
Civil society report	4
Research or working paper	2
Other or undefined	2

Table 1: **Type of Publications**

3.1.2 Partnership coverage

The publications ranged both in length as well as in the evidence and rigour on which statements about partnerships were made. For each of the publications an estimate was made about how much of the publication was actually about partnerships, thereby indicating their relevance to the review question. These estimates are aggregated in Table 2, which indicates that the majority of the publications either covered partnerships in great detail or not that much at all. Although these figures do provide some insight about the relevance of the publications for the review, given the different lengths and rigour of the materials, they can also be misleading. For example, a lengthy publication making rigorous statements about ICT4D partnerships in only 10% of the publication could still be of greater relevance to the review than a publication with 60% partnership coverage.

0 – 25 %	18
25 – 50 %	6
50 – 75 %	5
75 – 100 %	24

Table 2: **Percentage of a Publication that Specifically Addressed Partnerships**

3.1.3 Publication date

One of the inclusion criteria was only to select publications that had been published after 1990, given the rapidly changing nature of ICT4D. However, as Table 3 illustrates the systematic search was self-selective in the sense that no material was included for the decade 1990-99, and included generally the most recent publications. This suggests a growing trend in the attention for ICT4D partnerships. As Weigel and Waldburger (2004: 179) have noted, 'the frequency with which the terms 'partnership' and 'ICT' have appeared in the vocabulary of the international development community has increased exponentially in recent years'.

1990 – 1999	0
2000 – 2004	9
2005 – 2010	43
Unknown	1

Table 3: Publication Year

3.1.4 Geographical coverage

As explained in the previous section, in line with the focus on poverty reduction, the review primarily included studies focusing on low- and middle-income countries. Table 4 gives an impression of the geographical coverage of the publications that were reviewed, roughly divided by continent and whenever possible with the specific countries listed. Consequently, publications that covered more than one continent or country contributed more to the geographical coverage represented in the table than other publications. The Table nevertheless suggests that literature on ICT4D partnerships might be unequally distributed geographically, with countries such as India overrepresented and Middle Eastern countries underrepresented in the sample. However, the final choice of publications that were all in English, might account for part of the unbalanced geographical coverage. If publications in Spanish had been included in the sample, perhaps the coverage of Latin America would have been higher. Another reason why the geographical coverage presented in the Table can be slightly misleading is that there was a certain level of redundancy among publications covering the same partnership and therefore the same country. For example, all the four publications

accounting for Bangladesh discuss the Grameen Telecom's Village Phone Programme (Islam, 2005; Murray and Duran, 2002; Rashid and Rahman, 2009; Sein *et al.*, 2008).

Asia	***24***
- India	11
- Bangladesh	4
- Sri Lanka	2
- Vietnam	2
- Malaysia	2
- Nepal	1
- Laos	1
Global or undefined	***15***
Africa	***15***
- Kenya	4
- Tanzania	2
- South Africa	1
- Botswana	1
- Ghana	1
- Cameroon	1
- Democratic Republic of the Congo	1
- Burundi	1
Latin America	***5***
- Costa Rica	2
- Ecuador	1
- Brazil	1
Pacific	***1***
Middle East	***1***
- Egypt	1

Table 4: **Geographical Coverage of Publications**

3.1.5 Research methodology

The reviewed publications were not always explicit about the methodology that was used and even those that were, often used a wide variety of methods (hence the table shows

a total of 55 for 53 studies), which made it difficult to classify them. Nevertheless, Table 5 gives an idea of the different types of methods that were covered in the publications, indicating that there was a tendency towards qualitative (case) studies.

Case study	22
Synthesis	14
Qualitative methods	7
Other	5
Review	4
Quantitative methods	2
Meta-analysis	1

Table 5: **Research Methodology**

3.1.6 Sectoral focus of partnerships

Similarly, classifying the publications according to the sectoral focus of the partnerships was not always straightforward and unambiguous (hence there are 57 entries for 53 papers). Table 6 gives an impression of the focus of the reviewed papers, indicating that partnerships in health and agriculture were underrepresented.

Various or undefined	15
Education	10
Business-SME-Entrepreneurship	9
E-Governance and ICT policy	8
Social and Community Development	5
ICT Access	5
Health	3
Agriculture	2

Table 6: **Focus of the Partnerships**

3.1.7 Type of ICTs

Although all of the publications under review were related to ICT4D partnerships and therefore talked about information and communication technologies (ICTs), very few of them actually defined or clarified their understanding of ICTs. The few exceptions that

did clarify their understanding were for example Hansen (2004), Weigel and Waldburger (2004) and Unwin (2009, in his chapter previous to the one reviewed):

> 'ICTs can be defined as technologies that enable the handling of information and facilitate different forms of communication by electronic means. ICTs include capturing technologies, processing technologies, communication technologies and display technologies. The current expansion of digital technologies is challenging traditional distinctions between old and new ICTs. Radio, television, satellite technologies and the Internet are increasingly combined.' (Hansen, 2004: 3).

> 'Concerning the definition of ICT it is important to note that ICT include the whole range of technologies designed to access, process and transmit information in regard to text, sound, data and pictures. ICT encompass the full range from traditional widely used devices such as radios, telephones or television to more sophisticated tools like computers or the Internet' (Weigel and Waldburger, 2004: 19).

Table 7 classifies the publications in terms of the type of ICTs that were discussed. As quite a number of the publications focused on telecentres, this was included as a separate category, although they are not actually ICTs, but rather places that provide access to ICTs, in particular computers and the Internet. The table shows a tendency towards what Weigel and Waldburger (2004: 19) called 'sophisticated tools like computers or the Internet', rather than more traditional technologies, such as radios. However, such sophisticated tools might not easily reach the most poor and marginalised or be of use to people with limited literacy skills (Geldof, 2010). In the light of our review question, they might therefore not be the most logical and effective choice of ICT to impact on poverty reduction, compared to more widespread and traditional technologies, such as radios or other voice channels of communications. They could potentially benefit the rich more than the poor and in that way further widen the divide between them, rather than contribute to poverty reduction.

Not specified	20
Internet	15
Tele-centre	10
Computer	6
Telephone	4
Other	3
Software	2
Radio	2
Television	2

Table 7: **Type of ICTs Focused on in Partnership**

3.2 Defining Partnerships

A key term in our review question was the meaning of "partnerships", which is why this was discussed in some detail in the introductory contextual sections of this report. This section now explores how the reviewed studies defined partnerships (or not in some cases). As both Silvius *et al.* (2009) and Weigel and Waldburger (2004) have observed, the term 'partnership' has become a new buzzword that is increasingly appearing in the vocabulary of the international development community as something essential for addressing increasingly complex challenges. Therefore, the use of this term may in some cases be no more than rhetoric or window-dressing in response to this trend and as Unwin (2005: 11) has noted, 'there is a fundamental difference between the rhetoric and the reality of development partnerships'. This trend could explain why surprisingly few of the reviewed publications were actually explicit about their understanding of partnerships. An additional reason might be that not all of the reviewed publications intended to report on partnerships in the first place, but rather on a particular ICT4D project that happened to have been undertaken in partnership.

Partnerships are processes with a changing and fluid nature that can be understood and shaped in different ways and for which no 'one size fits all approach exists (Murray and Duran, 2002). Box 1 shows some examples from the few publications that were explicit about their understanding of the term partnership. What these understandings share in

common is that they are about relationships between different parties working towards a common goal. However, there are many different ways to give shape to such relationships and even the publications that were explicit about their understanding of partnerships, were not always clear about the partnerships model or mechanisms that were used to implement them. This is in line with Unwin's (2005) observation that many ICT4D initiatives use the term partnership to refer to the way in which they operate without seeking actually to create a formal partnership model or simply use it to refer to a situation where two different organisations are working together on a single project.

> 'For the purpose of this paper, the definition of partnerships as discussed by Mullinix (2002) will be used, namely that partnerships refer to 'an association between two or more persons, groups, or organisations who join together to achieve a common goal that neither one alone can accomplish' (Sivius *et al.*, 2009: 2).
>
> 'Partnerships are defined as voluntary and collaborative relationships between various parties, both state and non-state, in which all participants agree to work together to achieve a common purpose or undertake a specific task and to share risks and responsibilities, resources and benefits' (Adam, *et al.*, 2007: 5).
>
> 'The term 'partnership' can apply to many relationships, including (but not limited to) one time donation, sponsorship or cooperation for sharing of information, working together to more deliberate cooperation by joint planning, implementation and evaluation' (Easter and Ewins, 2010: 4).

Box 1: Understandings of ICT4D Partnerships

Partnerships are sometimes distinguished by the division of partners involved into different categories, such as public-private partnerships for those between public and private sector partners, tri-sector partnerships for those between private sector, governments and civil society, and multi-stakeholder partnerships, for those between different kind of stakeholders. The first category in particular has been contested, also among the reviewed publications, for being too simplistic (Murray and Duran, 2002; Unwin, 2005; Unwin, 2009). This was supported by the diversity of partnerships in the

reviewed publications that were classified as 'public-private partnerships', ranging from partnerships between government and local kiosk owners (see for example Bailur, 2006; Kuriyan and Ray, 2007; Kuriyan *et al.*, 2008; Kuriyan and Ray, 2009) to partnerships between government and multinationals (see for example Fife and Hosman, 2007; Fife *et al.*, 2008). Furthermore, as Murray and Duran (2002) have argued, the lines between public and private are not easy to define, because what some may consider a private organisation, may be considered by others as a public or civil organisation. Unwin (2005, 2009) has therefore advocated the notion of multi-stakeholder partnerships as the most inclusive and sophisticated term to best cover the diverse nature of partnerships.

Given the diverse nature of partnerships, there is a tendency for different organisations to conceptualise the term in contrasting ways. Therefore, a first step towards establishing successful partnerships is the need to ensure a shared understanding of the term as well as the partnership mechanisms among the different partners, in order to avoid future confusion, misunderstanding and possible retribution (Unwin, 2005). Furthermore, to be able to determine and measure the success of partnerships, this shared understanding should include a clearly defined common goal that all partners are working towards. In the reviewed publications it was not always clear what authors actually meant when they were lauding the success of a partnership, an issue that is explored in further detail in Section 3.4. Finally, with respect to the common goal pursued by a partnership and in the light of this systematic review, an important question is when a partnership should actually be called an 'ICT4D partnership'. Too often partnerships that are somehow related to ICTs and are implemented in a developing country are labelled as an ICT4D partnership, although they do not make any contributions to development practices.

3.3 Motivating Partnerships

As Section 1 discussed, there are different interests underlying ICT4D partnerships and thus different motives for organisations to participate in partnerships. In order to understand the development outcomes of ICT4D partnerships, it is important to understand what motivated their creation in the first place. It is also important to distinguish the shared goal that is being pursued by means of the partnership from the underlying motives of partners in being involved in it. This section explores how the partnerships discussed in the reviewed publications were motivated.

A main overall motivation for establishing partnerships that was reflected in most of the reviewed publications in some way, is the leverage of combining skills and resources from different organisations to enable a shared goal that without the partnership could not be undertaken or would be less efficient, with greater cost or with less quality; in other words, win-win situations where partners can combine forces and achieve outcomes where the whole is greater than its individual parts (see for example Weigel and Waldburger, 2004; Unwin, 2005; Adam *et al.*, 2007; Bujanda Bujanda, 2007; Fife and Hosman, 2007; Omar Dengo Foundation, 2007; Nissila, 2010). This leverage is thought to lead to increased sustainability and scalability by being better able to cope with unexpected challenges, such as changes in government and reductions in funding (Gaible and Burns, 2005). Furthermore, in terms of development impact, partnerships can under the right circumstances give better results than alternative approaches to community development and are essential to reach the poor and marginalised (Unwin, 2005).

However, despite a joint motivation for establishing a partnership to deliver on a shared goal more effectively, the specific incentives for entry into partnership can vary widely between organisations from different sectors (Murray and Duran, 2002). Inspired by the Overseas Development Institute (2003) and Hansen (2004), who usefully presented different interests divided per sector, Box 2 provides an overview of the diversity of motives by sector that were discussed in the reviewed publications.

Private partners:

- Global reputation
- Market penetration
- Profit
- Operational cost saving
- Risk management
- Access to finance
- Influencing policy making
- Access to civil society's knowledge about and closeness to poor
- Corporate Social Responsibility/philanthropy

Governments (local and national):

- Creating greater efficiency in allocation of scarce resources
- Faster delivery of commitment to public service improvements in different sectors
- Association with alleged efficiency of the private sector
- Access to technical expertise of the private sector
- Leveraging finance from private sector

Civil society:

- Shifting from an advocacy role to one of more direct influence
- Leveraging new resources
- Faster way to deliver of organisation's strategic objectives
- Access to technical expertise of the private sector
- Influencing policy making

Box 2: Motivations for ICT4D Partnerships by Sector

It is difficult to determine or measure how these different motives actually affect the development impact of partnerships. However, there are some clear tensions between some of these motives and their potential contribution to development practices. For example, it is questionable whether it is feasible to increase the wellbeing of the poor while also increasing the profits of the private sector, as suggested by Kuriyan *et al.*, (2008). There are doubts as to whether this is indeed a feasible win-win opportunity, or whether it might actually end in a win-lose opportunity in favour of the private sector. Furthermore, the 'noble motive' of the private sector to show their corporate social responsibility or philanthropic ambitions by engaging in partnerships, which was mentioned in at least eight of the reviewed publications, could well contribute more positively to their reputation rather than to the achievement of real development outcomes. Therefore, there is a risk that such partnerships will have a particular interest in creating and reporting success stories to bolster the image of the private partners, rather than necessarily to achieve real reductions in poverty.

This discussion about the different motives for participating in partnerships raises important issues in terms of determining their success. First, unless the meaning of a successful partnership is made explicit at the beginning, the success of a partnership is

open to different interpretations. For example, a private partner may consider a partnership to be very successful, when it has helped them to penetrate a new market and make more profit, whereas at the same time a civil society partner might consider the partnership a failure, if it has not managed to reach the poor, or indeed enhance the prestige of their organisation. Second, it raises doubts about the reliability of partnership accounts of their own performance, particularly when there are underlying motives to show the partnership in a good light. There is a crucial need for more external reviews of ICT4D partnerships to be undertaken in order to resolve this issue.

3.4 Factors Affecting the Development Impact of ICT4D Partnerships

The main aim of this review was systematically to review and understand the evidence that is available on the contribution of ICT4D partnerships to development practices and in particular poverty reduction. Ideally, such a review would have resulted in the identification of publications about 'intervention-like' studies of ICT4D partnerships that clearly discuss the understanding of partnerships, the partnership mechanisms, the overall aim of the partnership and the achievements towards this aim, from which lessons learned could be extracted and synthesised. However, in practice few of the publications under review actually followed such a model, as the majority just happened to discuss ICT4D projects undertaken in partnerships, but did not set out to report on the partnership and its mechanisms. As discussed in Section 3, this made the analysis and synthesis of the lessons learned complex. Nevertheless, with the help of the qualitative analysis software Atlas.ti a range of factors affecting the performance of ICT4D partnerships was extracted. This section presents this complex web of interrelated factors, which have been grouped into the analytical categories of partnership building, partnership implementation and partnership environment. However, it should be noted that given their complex nature there was no unambiguous way of categorizing the factors and therefore there are some areas of overlap between the categories.

Before discussing these factors in detail, it is important to reiterate some of the challenges in determining how these factors actually relate to development impact. First, as Weigel and Waldburger (2004) have argued, partnerships are a means to an end, rather than an end in themselves. Consequently, there is an important distinction to be

made between effective partnerships and development impact. Although the two are related, the success of the former does not necessarily imply the success of the latter, nor does the success of the latter necessarily mean the success of the former. In other words, the relationship between effective partnerships and development impact is not necessarily causal or linear, and therefore it was not straightforward to determine cause and effect in terms of development outcomes. Further, as Murray and Duran (2002) have argued, a more or less explicit assumption of ICT4D partnerships is that increased access to ICTs has a positive impact on poverty, but this link has yet to be proved empirically. In practice, most of the factors extracted from the reviewed publications related to the effectiveness of partnerships, without it being evident whether and how this had impacted the development outcomes. Wherever possible, this section relates the factors affecting ICT4D partnerships to development outcomes, but in most cases evidence from the reviewed publications to support this was lacking.

Given the complex character of the relationship between ICT4D partnerships and development outcomes, a major challenge was how to evaluate the success of partnerships in terms of development impact and synthesise the lessons learned for development practices. Some of the publications pointed to the lack of truly successful partnerships, particularly in not succeeding to reach the poorest of the poor (see for example Murray and Duran, 2002; Weigel and Waldburger, 2004). However, few of the reviewed publications actually explained their understanding of success and were mostly talking about the success of ICT4D projects that were undertaken in partnership, without clarifying what role the partnership had played in this success. One of the underlying reasons was that there was not an evident relationship between the goal of the partnership and development outcomes in most of the publications reviewed. Furthermore, due to the diverse nature of partnerships, certain types of partnerships experienced different challenges than others (Silvius *et al.*, 2009). In other words, what might lead to success in one type of partnership, could lead to failure in another, with the lessons learned therefore being hard to generalise. Finally, even if publications were explicit about the success of partnerships, an important question is how reliable these accounts are in reflecting their reality. Particularly, if the authors had a personal interest in a partnership, their reflections might merely be wishful thinking and a desire to report on success stories. In such circumstances, there is real value in gaining an external empirical assessment of a project's successes and failures. While there are limitations

to what can be done about this, we did include in the review table a section in which readers were invited to 'read between the lines' and express doubts about accounts that did not entirely seem to ring true.

3.4.1 Partnership Building

3.4.1.1 Partnership Focus

Prior to the actual implementation of partnerships, there is first a stage of partnership building in which the partnership is formalised. This process of building partnership is as important to the success of the partnership as the subsequent implementation phase (Accenture, 2001). As Murray and Duran (2002: 12) have pointed out, partnership building is 'often complex and difficult to manage as a result of conflicting interests and unclear understanding of the objectives and responsibilities of partners'. This section discusses the process of partnership building in more detail, with particular attention to the focus of partnerships and partnership agreements.

An important condition for partnerships to be successful is that they have a clear focus and pursue shared goals right from the start (Unwin, 2005; Adam *et al.*, 2007; Swarts, no date). It is therefore important to define, align and agree on clear objectives during the process of ICT4D partnership building and ensure that all partners understand how they will benefit from the partnership (Accenture, 2001; Islam, 2005; Adam *et al.*, 2007; McNamara, 2008; Swarts, no date).

As discussed in section 3.3, an important motivation for establishing partnerships is that they are thought to increase sustainability and scalability (Gaible and Burns, 2005). The term 'sustainability' is used here primarily in the sense that a particular intervention would continue in operation beyond the period of initial project funding. However, to ensure such sustainability and scalability, it is important that these are planned for right from the beginning of a partnership and that the partnership adopts a long-term focus (McBean, 2005; Unwin, 2005; Fife and Hosman, 2007; Hosman, 2008; Hosman and Fife, 2008; Easter and Ewins, 2010). As Swarts (no date: 5) has argued, 'the most successful partnerships plan for how they will maintain momentum and sustain their

efforts from the beginning'. Few papers provide evidence that ICT4D partnerships have indeed followed this crucial advice.

Therefore, during partnership building attention should be paid to long-term sustainability and scalability of a partnership, such as mechanisms for growth and replication (Accenture, 2001; McBean, 2005) and an assessment of the long-term viability and impact, including a realistic risk assessment (Lahiri and Pal, 2009; Pillay and Hearn 2009). As Hosman (2008) has argued, even partnerships that start as a pilot project should be, in most cases, designed to be scaled and expanded.

3.4.1.2 Partnership Agreement

Partnerships show a range of modalities, 'from loose forum-like structures allowing for active debate and the exchange of knowledge and experience, to more formalized structures based on the creation of a legal entity' (Adam *et al.*, 2007: 5). However, regardless of the modality, the evidence showed that it is important that there is a clear governance structure that defines the roles and responsibilities of all partners, which is made explicit in a partnership agreement or memorandum of understanding (IICD, 2000; Hansen, 2004; Islam, 2005; McNamara, 2005; Unwin, 2005; Adam *et al.*, 2007; Pillay and Hearn, 2009; Swarts, no date). Furthermore, convergence of interests of all partners is a driving force for building partnerships and therefore partnership structures should be designed in such a way that all partners benefit out of it and where the whole is greater than the parts that make it up (Islam, 2005; Unwin, 2005). A clear understanding by all partners of their roles, contributions and potential gains promotes a robust relationship in which the possibility of confusion or conflicts and disputes is minimised, which overall has a positive effect on a partnerships' sustainability and success in achieving its goals (Murray and Duran, 2002; Islam, 2005; Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007). However, at the same time there needs to be flexibility to renegotiate the agreement throughout the duration of the partnership, as expectations and implementation needs can change over time (Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007; Unwin, 2009).

The reviewed publications suggest that effective and successful partnership agreements typically take the following criteria into account:

- *Effective accountability* (Gurumurthy *et al.*, 2005; Adam *et al.*, 2007; Unwin, 2009; Easter and Ewins, 2010)
- *High level transparency* (Weigel and Waldburger, 2004; Islam, 2005; Unwin, 2005, 2009)
- A *clear ownership structure* with shared ownership for all partners (Murray and Duran, 2002; Evoh, 2007; Omar Dengo Foundation, 2007; InfoDev, 2009; Pillay and Hearn, 2009; Easter and Ewins, 2010; Swarts, no date)
- *Ethical framework* through which the partnership is implemented (Unwin, 2005, 2009)

Other aspects to be taken into account in defining partnership agreements are intellectual property rights, for example identifying who will have the legal ownership of software developed within the partnership (McBean, 2005; InfoDev, 2009), a process for termination of the agreement, both for reasons of convenience as well as for reasons of cause (InfoDev, 2009) and an arrangement to resolve disputes, particularly to avoid impunity when the agreement is broken (Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007; InfoDev, 2009).

In addition to a partnership agreement, the reviewed material suggests that defining a clear business and action plan allows all partners to optimize their organisational objectives, while at the same time achieving the common goals of the partnership (Islam, 2005; Hosman and Fife, 2008; InfoDev, 2009; Easter and Ewins, 2010). Furthermore, such a plan provides an understanding of the resources required successfully to implement a partnership, in terms of who should be involved, to what extent and at what time during the process, which helps the identification and recruitment of appropriate partners embodying a useful set of complementary strengths and resources (Overseas Development Institute, 2003; Islam, 2005; Adam *et al.*, 2007; Fife and Hosman, 2007; McNamara, 2008; Unwin, 2009). Overall, this process of partnership building can benefit from the facilitation of a third party intermediary (Adam *et al.*, 2007; Fife and Hosman, 2007; Fife *et al.*, 2008; Hosman and Fife, 2008).

3.4.2 Partnership Implementation

This section explores some further aspects of partnership implementation that affect ICT4D partnerships, in particular organisational factors and the interaction between partners. Once a partnership agreement and clear action plan are in place the actual

implementation of a partnership can start. However, there is usually some overlap between the stages of partnership building and implementation and therefore some of the factors discussed in the previous section equally apply to the partnership implementation phase and the other way around. Partnership implementation is complex and difficult to manage (Murray and Duran, 2002), and there is evidence therefore that it is best to start out small, even if the partnership is between top levels of government and large multinationals (Fife and Hosman, 2007; Hosman and Fife, 2008; InfoDev, 2009).

Furthermore, as expectations, priorities and implementation needs change over time, flexibility and willingness to adapt to changing conditions and resources are essential for the success of partnerships (Silvius *et al.*, 2009; Unwin, 2009; Easter and Ewins, 2010; Swarts, no date). Therefore, they ideally have clear and realistic time frames with enough room to respond to unanticipated outcomes (Murray and Duran, 2002; McNamara, 2008; Swarts, no date). Moreover, patience is key, because results do not necessarily come fast, and it takes time before mutual understanding and trust among partners are established (Nana Nzepa, 2003; Kaushik and Singh, 2005; Bailur, 2006 McNamara, 2008; Silvius *et al.*, 2009)

It is important that during partnership implementation effective use is being made of the complementary skills and resources that are available among the partners to establish the shared goal that the partners would not be able to implement on their own (Islam, 2005; Omar Dengo Foundation, 2007; Swarts, no date). For example, while one partner provides support to a vulnerable target group, the other can offer valuable training (Omar Dengo Foundation, 2007). Moreover, access to the necessary expertise and know-how should be guaranteed on an ongoing basis (Evoh, 2007; Easter and Ewins, 2010; Swarts, no date). In so doing, partnerships can help to enhance both effectiveness and efficiency while at the same time eliminating duplication of effort (Weigel and Waldburger, 2004; Easter and Ewins, 2010). In particular, the improved and more efficient delivery of government services was frequently mentioned in the reviewed publications (see for example Murray and Duran, 2002; Hansen, 2004; Kuriyan and Ray, 2007; Kuriyan *et al.*, 2008; InfoDev, 2009).

As Adam *et al.* (2007) have highlighted, during partnership implementation there should be emphasis on the outcomes that need to be reached, mechanisms for monitoring that the process is on track and that outputs are visible, and continual reflection on the direction in which the process is unfolding. The reviewed material showed that monitoring and evaluation as well as measuring progress are important mechanisms to optimize the effectiveness of partnerships (Murray and Duran, 2002; Islam, 2005; Adam *et al*., 2007; Evoh, 2007; InfoDev, 2009; Silvius, 2009; Unwin, 2009; Easter and Ewins, 2010; Swarts, no date). However, measurable goals and objectives are difficult to enforce and there are no standard metrics for assessment, as the flexibility of partnerships makes it difficult to establish how progress should be measured and who carries the responsibility for failures to deliver on objectives (Adam *et al.*, 2007; Fife and Hosman, 2007). A recommendation for the future is that a standard set of guidelines might be produced on effective monitoring and evaluation for ICT4D initiatives.

3.4.2.1 Organisational Factors

The evidence suggests that partnership processes are not easy to coordinate, their success greatly depends on how well and systematically they are managed (Nana Nzepa, 2003; Adam *et al*., 2007; Ezz *et al.*, 2009; InfoDev, 2009; Unwin, 2009; Easter and Ewins, 2010). For example, partnerships that are not coordinated effectively can lead to outcomes reflecting the interests and concerns of donors, rather than the beneficiaries (Fife and Hosman, 2007). Furthermore, active management of the partnership implementation helps to ensure sustained involvement of partners (Unwin, 2009; Easter and Ewins, 2010).

Therefore, ICT4D partnerships need to be led by people who have the skills to bring together a diversity of partners and who can see the benefits of using ICTs to improve the lives of poor and marginalised communities (Unwin, 2009). As many of the reviewed publications identified, this requires charismatic leadership with the presence of an active and visible champion who advocates the common goals and makes the partnership visible to the public (Nduati and Bowman, 2005; Unwin, 2005; Braund *et al.*, 2006; Adam *et al.*, 2007; Rashid and Rahman, 2009; Unwin, 2009; Swarts, no date). For example, Grameen Bank's chairman Muhammad Yunus provided legitimacy and credibility to the Village Phone Programme in Bangladesh (Rashid and Rahman, 2009).

The evidence reviewed here suggests that ICT4D partnerships benefit from adequate and well-trained staff in partner organisations, and leadership and management teams are ideally made up of a balanced representation of the different partners (McNamara, 2008; Unwin, 2009). Furthermore, a lack of continuity in terms of human resources, particularly changes in leadership, can negatively affect and disrupt the partnership process (Murray and Duran, 2002; Bailur, 2006; Braund *et al.*, 2006; Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007). Particularly, in governments and senior management in the private secor there is typically a high staff turnover, with people changing jobs every few years, whereas there is usually more stability and continuity among technical staff (Bailur, 2006; Omar Dengo Foundation, 2007).

Partnerships involve a diversity of partners and sectors that all have their own characteristics and ways of working. For the successful execution of partnerships, it is therefore important to pay attention to and overcome organisational and cultural differences between public, private and civil society partners (Murray and Duran, 2002; Islam, 2005; Fife and Hosman, 2007; Omar Dengo Foundation, 2007; Ezz *et al.*, 2009; Silvius *et al.*, 2009). Particularly, the mismatch between the speed of execution of the private sector and the slow, more bureaucratic nature of governments and donors easily leads to tensions (Murray and Duran, 2002; Fife and Hosman, 2007; Silvuius *et al.*, 2009). Such organisational differences can have an adverse impact on decision-making. For example, partners who are accustomed to subsidization may take a long time to make their decisions, and as a result they slow down the overall decision making process of the partnership as well as the implementation of decisions (Nana Nzepa, 2003; Fife and Hosman, 2007; Nissila, 2010).

3.4.2.2 Interaction between Partners

Partnerships can stand or fall by the relationship and communication between partners. Without effective interaction between partners, they have little chance of success in achieving their goal. Typical characteristics of a healthy partnership relationship have been described as trust, honesty, openness, mutual understanding and respect (see for example Overseas Development Institute, 2003; Hansen, 2004; Gurumurthy *et al.*, 2005; Islam 2005; Unwin, 2005; Braund *et al.*, 2006; Adam *et al.*, 2007; Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007; Hosman, 2008; McNamara, 2008; Silvius *et al.*, 2009; Unwin, 2009). Particularly building trust among all partners, including those

who are normally suspicious and prejudiced about each other, was brought up as an important condition for success in the majority of reviewed publications. In a partnership discussed by Islam (2005), for example, there was distrust among some of the partners about another partner, a large company with huge financial capacity and with headquarters based in Europe, potentially dominating and taking advantage of the partnership.

The relationship between partners can be subject to unequal power relations and conflicts of interest, which make the partnership implementation more challenging to manage (Murray and Duran, 2002; Nana Nzepa, 2003; Islam, 2005; Unwin, 2005; Adam *et al.*, 2007; Fife and Hosman, 2007; McNamara, 2008). According to Hansen (2004: 19), partnerships are not only 'inherently unequal, they also serve to mask power relations by diverting attention away from more structural questions of inequality and power'. Furthermore, according to Unwin (2005: 19), 'donors still maintain a dominant position of power through the practices of surveillance and selectivity, whereby they choose to support those governments with policies designed to implement democracy and neo-liberal market-reform'. Partners also need to be in continuous communication with each other to align the diversity of their competing and sometimes hidden agendas and avoid the differences from escalating into conflicts (Overseas Development Institute, 2003; McNamara, 2008; Silvius *et al.*, 2009).

The Overseas Development Institute (2003: 25) has argued that 'the more the partners interact, the more likely it is that the partnership will be successful'. Other papers put even greater emphasis on the character of these interactions. Therefore, establishing communication channels that encourage direct and honest communication and knowledge sharing can facilitate a continual dialogue between partners (Braund *et al.*, 2006; Adam *et al.*, 2007; Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007; InfoDev, 2009). It is important to ensure that all partners are included at every level of the dialogue, for example by providing regular status reports and project reviews, as even the slightest misunderstanding can be disastrous for a partnership (Fife and Hosman, 2007; Easter and Ewins, 2010). Therefore, it is also important that the communication happens in a 'language' that is commonly understood by all partners, because even if the same words and terminology are used, they can still be understood differently by representatives from different sectors or disciplines (Accenture, 2001;

Weigel and Waldburger, 2004). Despite the need for good communication, partnerships should not become 'endless talking shops' with continuous meetings and discussions, but without actual delivery of practical results on the ground; in other words too much talking and too little action should be avoided (Unwin, 2005; Adam *et al.*, 2007: 10).

3.4.3 The Partnership Environment

3.4.3.1 Local Context

The awareness that the knowledge about and understanding of local contexts is critical for the success of partnership implementations was evident in the majority of reviewed publications (see for example Accenture, 2001; Islam, 2005; Adam *et al.*, 2007; Omar Dengo Foundation, 2007; Fife *et al.*, 2008). It is the factor that most directly relates to the development impact of partnerships, rather than their effectiveness. As Hosman (2008: 423) has pointed out, 'partnerships will not address larger issues of socio-economic development and poverty eradication if they are not relevant in the lives of their intended beneficiaries'. Furthermore, as Unwin (2009: 169) has argued, 'for effective development impact that will empower poor people and marginalised communities, their interests as end beneficiaries need to be paramount and they should therefore be seen as full partners'. These quotations point to two important aspects about understanding the local context, namely the understanding of local and user needs and engaging users and communities in the process.

Many of the materials reviewed argued that for ICT4D partnerships actually to have a developmental impact, it is not only important that technologies are sensitive to the local use environments, but more importantly that they respond to actual needs (Accenture, 2001; Bujanda Bujanda and Castro, 2007; Omar Dengo Foundation, 2007; Hosman and Fife, 2008; Lahiri and Pal, 2009). As Unwin (2009: 363) has highlighted, 'one of the main reasons why many ICT4D initiatives have failed is that they have been excessively top-down, externally driven and supply led, with insufficient attention being paid to real development needs'. Therefore, the evidence reviewed here suggests that it is essential to adopt a bottom-up approach that first listens to the needs of local communities, to then choose and implement technologies that are most appropriate for delivering these needs (Unwin, 2005; Fife and Hosman, 2007; Hosman and Fife, 2008; Easter and Ewins, 2010). In particular, the needs and interests of the most poor and under-

privileged require sufficient attention (Gurumurthy *et al*., 2005). Furthermore, making sure that partnerships respond to local demand helps to ensure that activities are sustainable beyond external inputs and is moreover essential for local capacity building that can enable indigenous solutions to be developed (Unwin, 2005).

An important strategy to gain a better understanding of the local context and needs to ensure the success and sustainability of an ICT4D partnership is to engage users and communities at all stages of the process and to move at their pace, however challenging this might be for some in the private sector (Marshall and Taylor, 2005; Fife and Hosman, 2007; Omar Dengo Foundation, 2007; Hosman and Fife, 2008; Lahiri and Pal, 2009; Swarts, no date). User engagement is central to the usefulness of any technological deployment and community participation can help to create a sense of ownership, provide local wisdom and resources, and reflect community values (Bailur, 2006; De and Ratan, 2009). As Lahiri and Pal (2009: 10) have advocated, 'involve training and working with community members to allow them to gain greater opportunities', rather than 'give away' technologies to them. Therefore, according to the literature, it can be useful to involve civil society in partnerships for their experience with and closeness to local communities (Murray and Duran, 2002; Nana Nzepa, 2003; Pillay and Hearn, 2009).

3.4.3.2 Financial Environment

The publications under review highlighted the importance of ensuring financial sustainability for partnerships to be successful (see for example Evoh, 2007; Easter and Ewins, 2010; Nissila, 2010). Therefore, it is essential to consider the viability of a partnership, including the financial stability of the different partners, right from the outset (Fife *et al.*, 2008; Easter and Ewins, 2010). As Kuriyan and Ray (2009) have pointed out, though, in practice there can sometimes be a necessary trade-off between social development and financial sustainability, as in the example of the question of user fees. Two interrelated factors that determine the financial viability and sustainability of a partnership are its costs and available funding. One of the motivations for and benefits of partnerships is that they can reduce operational costs by partners sharing costs (Murray and Duran, 2002; Hansen, 2004; Gaible and Burns, 2005; Unwin, 2005; Nissila, 2010). However, as Unwin (2009) has emphasised, partnerships do not always reduce overall costs. Furthermore, as Islam (2005: 3) has argued, 'innovative use of complementary

resources and services can significantly reduce delivery costs of partnership activities and maximise expected outcomes'.

Although partnerships are thought to strengthen the ability of projects to survive reductions in funding (Gaible and Burns, 2005), the availability and continuity of adequate funding is an essential condition for financial sustainability and therefore success of a partnership (Accenture, 2001; Nana Nzepa, 2003; Kaushik and Singh, 2004; Adam *et al.*, 2007; McNamara, 2008). Not only can a gap in the funding stream lead to the loss of partners, but a lack of sustainable funding sources can also obstruct the successful completion of the partnership process (Adam *et al.*, 2007; Omar Dengo Foundation, 2007). Multiple funding sources are a way to create a more sustainable and resilient flow of revenue and once a partnership becomes considered as legitimate and trustworthy, it becomes easier to find and secure funding sources (Adam *et al.*, 2007; Omar Dengo Foundation, 2007). In securing funding from the private sector, caution is needed to ensure that the process is not taken over by their specific interests and agendas (Adam *et al.*, 2007), whereas public funds might have bureaucratic requirements attached to them (Omar Dengo Foundation, 2007). Furthermore, subsidies can sometimes have negative consequences for the financial sustainability of a partnership, because of the dependency relationship that it creates (Murray and Duran, 2002).

3.4.3.3 Political Environment

As partnerships are embedded in political climates that influence their implementation, there are different political factors to be considered, such as the regulatory environment, political support and potential changes in government. Many of the reviewed publications refer to the regulatory environment as something that can positively or negatively impact partnership initiatives (see for example Accenture, 2001; Murray and Duran, 2002; Nana Nzepa, 2003; Overseas Development Institute, 2003; Hansen, 2004; Weigel and Waldburger, 2004; Islam, 2005; Chapagain, 2006; Ezz *et al.*, 2009; Unwin, 2009). Islam (2005) for example highlighted how a highly regulated policy environment or government monopoly in the telecommunication sector can have an adverse impact on the growth and expansion of partnerships. Therefore, as Murray and Duran (2002) have argued, a supportive regulatory environment is necessary for partnerships to establish 'pro-poor change' and thus development impact. At the same time,

partnerships can be a means to influence and change the regulatory environment and particularly ICT policies, such as the partnership in Cameroon discussed by Nana Nzepa (2003).

Continuing political support and commitment is considered to have a positive impact on partnerships (see for example Accenture, 2001; Gurumurthy *et al.*, 2005; Bailur, 2006; Adam *et al.*, 2007; InfoDev, 2009). However, at the same time excessive government involvement can hamper partnership implementation, such as the delivery of services by the private sector (Kuriyan and Ray, 2007). Furthermore, changes in government can affect partnerships (see for example Nana Nzepa, 2003; Kaushik and Singh, 2004; Gaible and Burns, 2005; Omar Dengo Foundation, 2007). On the one hand, partnerships can strengthen the ability of projects to survive changes in government (Gaible and Burns, 2005). On the other hand, changes in government can result in a series of new beginnings or refusal by a new government to continue initiatives of the previous government, which will have an adverse impact on the partnership outcomes (Nana Nzepa, 2003; Omar Dengo Foundation, 2007).

3.4.3.4 Technological Environment

What makes ICT4D partnerships different from other type of partnerships is their specific focus on ICTs as a means to achieve development ends. Therefore, such partnerships benefit from a supportive technological environment and there are different technological factors that affect progress towards their development ends. First, technological infrastructure constraints can impede the progress of ICT4D partnerships (Islam, 2005). In particular, poor connectivity and a lack of electricity can be a barrier to the use of ICTs (Kaushik and Singh, 2004; Evoh, 2007). Furthermore, within these technological environments ICT4D partnerships benefit from access to sufficient and continuous technological expertise and support (Bailur, 2006; Moens *et al.*, 2008; Lahiri and Pal, 2009). As Lahiri and Pal (2009) have remarked, projects are often abandoned when the 'technical specialist' who set up a project 'returns home'. Finally, as the previous section has highlighted, a favourable regulatory environment in terms of ICT policy is necessary for ICT4D partnerships.

Another important technological factor for ICT4D initiatives, whether these are undertaken in partnership or not, is the identification of the most appropriate technology

(Hosman, 2008; Hosman and Fife, 2008). The critical criterion is that the technology should be appropriate for the local context where it will be implemented (Hosman and Fife, 2008), which means that it should ideally be usable in the everyday activity of users, respond to an actual demand and be adaptable to local languages and uses (Kaushik and Singh, 2004; Moens *et al.*, 2008; Nissila, 2010). Moreover, as Fife and Hosman (2007) have argued, simpler is often better. Furthermore, a choice for Open Source software can lower the cost of implementation, whereas there is some evidence that dependency on proprietary software can lead to failure after the funding for a pilot ends (Pillay and Hearn, 2009; Nissila, 2010). At the same time, the choice for Open Source software over proprietary software can lead to disagreement among partners, particularly when involved partners have a specific interest in proprietary software (Omar Dengo Foundation, 2007).

4 Reflections on the Systematic Review

The use of Systematic Review methodology within development is very much at an exploratory stage. In the following section, we present some key points we have identified in the process of our exploration with this methodology:

4.1 Choice of Topic for a Systematic Review

We know from their use in areas such as medical research that Systematic Reviews are a particularly powerful methodology to gather evidence about the effectiveness of specific interventions. So, for example, it is possible to report on the different efficacy of clinical trials designed to test the effectiveness of a certain malaria prophylaxis medication. These trials take place in largely controlled environments where only the type of medication is different between control group and experiment group. It is comparatively easy to collect the evidence across several such trials in a systematic review.

In much development practice, there is usually the added complexity of the social setting of an intervention. So, even with a single-purpose technology such as bed-nets as protection against malaria, several social factors have to be taken into account as well as the physical effectiveness of the bed-net. Yet a systematic review of literature analysing the effectiveness of bed-nets against malaria is still quite possible, since a

clear causal relationship can be posited and the outcome, the rate of infection, can be measured.

Our topic, the question of what success and failure factors determine whether ICT4D partnerships achieved their goals of poverty reduction was a particularly challenging one for a systematic review. First there were two causal relationships involved: indentifying the causal relationships between success factors and the success of ICT4D partnerships, and then identifying the links between what successful ICT4D partnerships and real development impacts that reduce poverty. Second, it was positioned in a field, ICT4D, which focuses on multi-purpose technologies (mobile devices, internet), which are used for a variety of development outcomes. This makes it difficult to identify the direct impact of any one technology on poverty reduction. Third, these technologies allow for easier communication and information, which in turn have a systemic, not necessarily linear effect on development outcomes such as poverty reduction. So the impact of ICT4D is notoriously hard to measure. Fourth, the success and failure of partnerships is also difficult to measure, unless one goes down to the crude level of counting project partners at the start and end of the project. Partnerships are key in development, yet their analysis requires us to think about development as a process not just a product. If the effect of bed-nets on malaria infection rates was on the comparatively easy end of the spectrum, then our topic was at the more challenging end of the spectrum for a systematic review. However, we believe that this made it a particularly useful area to try out this methodology. We are essentially testing the limits of what topics can be captured in a systematic review process. In particular, we are testing whether the systematic review methodology can effectively be used for meta-level, or process aspects such as the role of partnerships.

4.2 Defining the Scope

Part of our challenge was also that the topic of partnerships constitutes a meta-level of analysis, and thus it is not something that every project report actually discussed in great detail, if at all. ICT4D literature is quite prolific, but explicit mention of partnership was not so frequent that we felt we could limit the universe of texts for our selection to specific definitions of partnership. The terms ‘stakeholder’ and to a lesser degree ‘partner’ are understood in very different ways. For example, in one case it was ‘the state, the World

Bank, the local communities' while in another is was 'teachers, pupils and software developers'.

We also deliberately kept the net open in respect of the framing of information on partnerships – that is to say, we included both 1) reports and meta-analysis focusing mainly on partnerships, and 2) reports on particular case studies, with differing degrees of focus on the partnership aspect in their write-up.

4.3 Increased Remoteness from the Data

The systematic review's purpose is to reduce complexity, to distil an essence of findings out of a universe of evidence. Figure 3 provides a summary of the steps that were used. From a universe of publications, the most relevant and rigorous are selected for review (Step 2), then these are read and information summarised in review tables (Step 3). Content from these tables is then inserted into qualitative data analysis software, where it is coded (Step 4). The codes are then sorted, clustered in terms of meaning, and written up in a review report (Step 5).

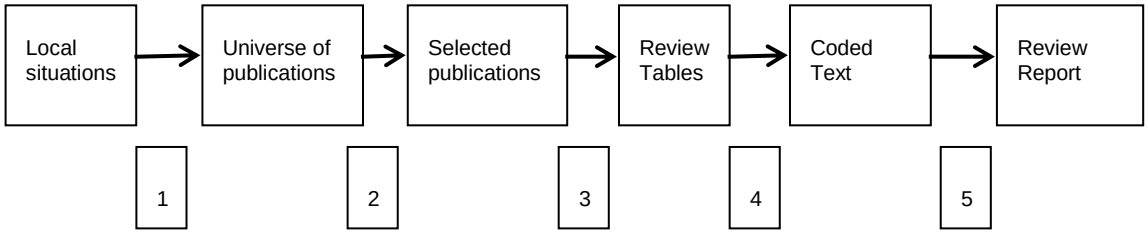

Figure 3: Steps in the Review Process

This final report is thus five steps removed from any 'reality' on the ground. In fact, the first step for the review was not done by the review team, but was rather produced by other scholars and practitioners who 'wrote-up' either their own development project, or projects that they have analysed. So in this important sense the systematic review relies on the quality of the original data write-up, and this important step lies beyond the control of the review team. In our universe of literature we had included both such project write-ups and meta-level commentary on partnerships. Where they were explicitly evidence based, many of the meta-level commentaries were themselves based on project write-ups. Even after distilling 156 items in the universe down to 53 items in the selection, we were still not able, among the 53, to give full marks for our confidence in the evidence

presented. This often had to do with the fact that in case-study write-ups, partnerships were often invoked as a tool, but not analysed or commented upon in depth. In meta-commentary on partnerships, often no direct reference was given to experience on the ground, and thus the evidence for such often thoughtfully phrased commentary was not evident from the papers we read.

However in a systematic review the first guarantor of the reliability of the findings lies in the rigour of the original studies and thus the quality of the evidence base. In a systematic review like ours, we had to include in our universe of publications heterogeneity of format from different disciplinary and professional perspectives, writing for different audiences. This included non-peer reviewed short reports from practitioners as well as peer-reviewed journal articles. With such heterogeneous formats, defining a broadly applicable minimum standard or applying appropriate criteria for rigour is especially difficult.

Decisions as to whether a piece should be included or not were initially based on abstracts (wherever possible). Some of the pieces included did not set out primarily to report on partnerships, so the abstracts often conveyed other information. While often discussing other methodological aspects, many abstracts did not convey on what evidence base the article's claims about ICT4D partnerships were based. Using the professional and academic judgement of the review team, the advisory board and external reviewers was crucial to exclude items that the mechanical search brought up but which nevertheless lacked relevance or rigour. Also the use of the advisory board and external reviewers to challenge our list of original material did, provide a mechanism to check that we had indeed incorporated materials that they too thought to be of value even if they had not come up through the mechanical search.

4.4 Three Kinds of Expertise

The systematic review draws on three kinds of expertise – the expertise of the authors of the publications that are reviewed, the expertise of the external reviewers, and the expertise of the review team. However, the process as we experienced it did not always fully reward these three kinds of expertise. On a practical level, the authors' expertise is drawn upon at no additional time cost to them. The review team was contracted by DFID to conduct the review, and we believe that we might have gained more detailed

and timely comments from external reviewers if there had been an established network of those willing to give their time to this important work (see our recommendation in section 5.1.2.1).

Also, the procedural logic of systematic reviews is that once materials have passed the assessment for methodological rigour, great trust is placed in the expertise of the authors of the original papers. In our original feedback from DFID we were constantly urged not to introduce what was seen as our own 'bias' into the review process. In our experience, this is neither realistic, since there is no such thing as an unbiased positionality for a researcher, nor feasible, since the systematic review process for complex research questions will require the review team to use their expertise, and above all their academic judgement. The more heterogeneous the evidence base, and the more complex the different understandings of rigour, the more important will be the review team's judgement.

4.5 Mechanistic Protocol versus Use of Judgement

The systematic review methodology is designed to help gather the evidence in a particular field without favouring one position in the literature over another. In that sense, we have tried not to be 'biased' in that we report the balance of the evidence as it appears through the sift conducted under the rules of the agreed protocol. We asked the external reviewers to use their academic judgement in helping us filter the universe of literature down to around 50 publications. Yet it was not possible to delegate all academic judgements to the reviewers. First, as scholars and practitioners ourselves, we did use our academic judgement when assessing the methodological strength on which the evidence in the papers was based. Second, the process of reading the publications and extracting meaning from them in review tables required us to use our academic judgement as to what was relevant material. So to what degree should one pre-define the lens through which the material is viewed? The less pre-framed, the more inductively the textual analysis is undertaken, the more it will rely on the researchers' interpretation of what is relevant and what is not. On the other hand, the risk of a too regulated, too deductive process at this important stage would run the risk that one would find only what one was looking for. Actually trusting the 'human factor' to distil meaning from text is essential to keep the review open to surprise findings and under-reported phenomena. Our approach was:

- To pre-define what should be read – all in the case of papers, or in the case of books and lengthy reports the introduction, conclusion, and parts related to partnerships, as indicated in the table of contents
- To have a review table with a section of closed and a section of open questions. This compromise is comparable to semi-structured interview technique.
- Not using 'count occurrences of term x' as a technique to analyse meaning. For example, instead of counting occurrences of particular terms such as 'partnership' we asked the reader for an estimate of which percentage of text was about partnerships.

Third, the process of coding the matrices may be supported by qualitative data analysis software, but it is still up to the review team to code, cluster codes of related meaning, and distil meaning from the coded material. This is a very common process in qualitative data analysis. We used open-coding, letting codes emerge from the material, rather than working deductively with a pre-existing set of codes to apply.

To conclude, there is some epistemic and methodological tension between the tenets of qualitative research and the systematic review approach. Qualitative research embraces the central mediating role of the researcher as the person extracting meaning, capturing that meaning in text, and then reducing the complexity of meaning through analysis and narrative. It accepts a social constructivist position that such construction of meaning is not mechanistic, but rather is linked to previous knowledge of the researchers and it is socially constructed. The systematic review approach on the other hand emerges from a more positivist epistemology, which attempts to use replicability as a central criterion for rigour, and fundamentally would like to reduce the significance of the individual researcher's decisions and meaning-making in the process.

Our team was interdisciplinary and included academics with positivist, social constructivist and critical theory backgrounds. We therefore clearly advocate the value of a multi-method approach, both to an understanding of ICT4D partnerships, and also in undertaking systematic reviews. For a complex topic such as this, we thus needed an approach that allowed for the academic judgement and meaning making of the review team to be used. In our case, this was not only a question of epistemological position, but also a necessity to make a systematic review on the topic feasible. Members of the

review team will hold different personal views as to what they consider “development” to be, and so it is useful to define in the review question what approach to development the projects will be measured against. In our case, this was poverty reduction, since this is a core focus of DFID’s approach to development. However, project write-ups and other publications also expressed other perspectives of what ‘development’ was intended. It is methodologically hard to justify the measurement of a project against an aim that was not stated as its original purpose. However, as a first step towards making evidence more comparable, ICT4D projects and publications need to be explicit about what ‘D’ they are using ICT for.

5 Conclusion

5.1 Conclusions from the Reviewed Evidence Base

This section presents our main findings and then goes on to make recommendations to DFID that are also relevant for other bilateral donors interested in this field. The findings are drawn directly from our review of the evidence. The recommendations come from the learning the team has experienced by undertaking the process of review. These are framed in terms of methodologies and substantive issues. The section ends with some recommended directions for future research by highlighting key research gaps.

5.1.1 Findings

An important conclusion of this systematic review is that there is a lack of good quality evidence-based studies available on the topic of ICT4D partnerships, which made the review a challenging and complex endeavour. There is undoubtedly a need for more research in this area. This sub-section concludes the report with some of the major findings about the review process.

As partnerships are a means to an end, rather than an end in themselves, when applied to development practices, they represent a process view of development, rather than an outcome based one. Consequently, an important distinction to be made is between the effectiveness of partnerships on the one hand and their development impact on the other; although the two are related, their relationship is not necessarily causal or linear. The reviewed publications mostly discussed the success or failure of partnerships in

terms of their effectiveness, rather than their development outcome. These are most definitely not the same thing.

Nevertheless, despite the challenges, five broad conclusions can be drawn about what makes ICT4D partnerships successful in delivering development impact.

- Success is increased when detailed attention is paid to the local context and the involvement of the local community in partnership implementation.
- It is important for such partnerships to have clear and agreed intended development outcomes, even where constituent partners may themselves have different reasons for being involved in the partnership.
- Sustainability and scalability of the intended development intervention need to be built into partnership design at the very beginning.
- Successful partnerships are built on trust, honesty, openness, mutual understanding and respect.
- A supportive wider ICT environment needs to be in place, both in terms of policy and infrastructure, if such partnerships are to flourish and deliver effective development outcomes.

A major challenge for the review was the nature of the materials resulting from the systematic search. Given the multidisciplinary nature of ICT for Development (ICT4D), the selected publications had a diverse character, which made them not as readily amenable to analysis as are medical research interventions that follow Randomised Controlled Trial (RCTs). Because of this diversity it was not easy to determine a suitable set of sources and search terms to identify relevant materials without too much 'noise' of irrelevant hits. In other words, interventions in a particular discipline with an agreed terminology are easier to retrieve than those spread over different disciplines that all use their own differing terminologies and methodologies. Furthermore, this diversity made it difficult to compare the materials and it was challenging to extract and synthesise relevant evidence from them. This does not mean that the exercise was not both interesting and rewarding, but it does imply that traditionally defined systematic reviews may not always lead to the most appropriate and valuable conclusions about development impacts.

Another consequence of the multidisciplinary nature of the reviewed materials was the range of understandings of partnerships. Only few of the reviewed publications were actually explicit about their understanding of the term 'partnership', the goal of the partnership and its potential impact to development practices, or the details of how the partnership under discussion had been implemented. One of the underlying reasons for this lack of detail about the partnerships was that most of the publications did not set out directly to report on partnerships or their impact of development practices in the first place, but rather to report on an ICT4D project that happened to have been implemented through a partnership.

5.1.2 Recommendations

5.1.2.1 Methodologies

- When dealing with multidisciplinary materials in a systematic review, the formal search strategies might be too rigid to appreciate the diversity and complexity of the publications. A solution to this challenge would be to leave some flexibility with the researchers undertaking the review to explore the multidisciplinary realm of materials beyond the systematic search under the condition that each of these steps and choices is made explicit to ensure the rigour of the process. For example, seeking inputs from panels of experts and following up highly cited publications within the references of reviewed publications provides a more valuable set of materials can be generated than would be the case through using standard search engines and citation criteria.

- There is a need to find better ways of securing external reviewers' time. One avenue that DFID might consider, is making it a requirement of each of their systematic review contracts that the researchers comment on, for example two other protocols and two draft reports prepared by other contractors.

- Many of the publications that we reviewed lacked a rigorous account of research methodology. Sometimes this is due to space and other restrictions of journals. We recommend that DFID, when sponsoring research, encourage researchers to document their research methodology more fully in all of their publications.

- The majority of materials reviewed did not specify a) what kind of development outcomes they were pursuing or b) what they understood by partnership. To improve the evaluation of projects and comparability of studies in the future, we recommend that DFID and other funders to urge practitioners and researchers in receipt of funding to be explicit about their aims and the conceptual framing of their work.

5.1.2.2 Substantive

- Most of the published research on ICT4D partnerships is not designed in a way that is readily amenable to determining development impact. As a result, determining the success of partnerships in terms of development impact as this systematic review aimed for was not straightforward. Furthermore, it raised questions about when a partnership should actually be labelled an 'ICT4D partnership'. Whether all partnerships that somehow implement ICTs in developing countries deserve this label or only those that explicitly have a development outcome as their aim is a moot question.

- Those publications that did explore the development impacts of ICT4D projects undertaken in partnership were not very explicit about the role that the partnership had played in contributing to this, and therefore it was hard to draw any firm conclusions about the causality between the partnership and the development impact. It is quite possible that an ICT4D intervention developed through a contractual arrangement rather than a partnership one could have the same or even better outcome. This is something that urgently needs to be explored further. Moreover, different types of partners have different interests in partnerships, which is epitomised in the dichotomy between partnerships that focus on the sustainability of the partnership and those that focus on the sustainability of the development impact. This systematic review has revealed a need for more research on the latter, which could build on our generic findings and ask questions about them.

- The two points made above highlight the need for greater clarity in the high level objectives of research. Development research is often required to make some contribution to poverty reduction and this can lead to tensions with the objective

of strengthening the evidence base (Humphrey and Navas-Alemán 2010). It is recommended that future funding should support research to determine development impact.

5.1.2.3 Research Gaps

It is important that this review of evidence not only informs policy but also is used to inform the commissioning and undertaking of further research. Better quality evidence is needed to understand the following two questions:

- What are the factors in ICT4D initiatives that actually improve the sustainability of the development impact, be they undertaken as partnerships or in some other contractual way?
- What is the role that partnerships really play in contributing to development impact? Although there has been much normative assertion about the value of partnerships for development, rather little rigorous research has yet been done to distinguish the development impact of partnerships from the impact that other modalities of delivery might achieve.

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48. **Swarts, P.** (no date) *Multi-Stakeholder Partnerships for ICTs in Education*: GESCI.
49. **Torero Cullen, M., and Von Braun, J.** (Eds.). (2006) *Information and Communication Technologies for Development and Poverty Reduction: the potential of telecommunications*. Baltimore: John Hopkins University Press.
50. **Unwin, T.** (2005) *Partnerships in Development Practice: Evidence from multi-stakeholder ICT4D partnership practice in Africa*. Paris: UNESCO.
51. **Unwin, T.** (2009) ICT4D implementation: policies and partnership. In T. Unwin (Ed.), *ICT4D*. Cambridge: Cambridge University Press, 386 pp.
52. **Venniyoor, S., and Sah, G.** (2007) *Public Private Partnership in Community Media – Experiences*. Solution Exchange for the ICT for Development Community in India http://portal.unesco.org/geography/en/files/8045/11975382355Public_Private_Partnership_in_Community_Media.pdf/Public%2BPrivate%2BPartnership%2Bin%2BCommunity%2BMedia.pdf (last accessed 28 November 2010).
53. **Weigel, G., and Waldburger, D.** (2004) *ICT4D: connecting people for a better world: lessons, innovations and perspectives of information and communication technologies in development*. Berne: Swiss Agency for Development and Cooperation.

Annex B: Resources Searched

Google and Google scholar
Electronic databases and library catalogues (particularly for books): • British Library catalogue (http://catalogue.bl.uk) • University of London Research Library Services (http://www.ulrls.lon.ac.uk) • Copac National, Academic, and Specialist Library Catalogue (http://copac.ac.uk/) • ISI Web of Knowledge (http://apps.isiknowledge.com)
ICT4D specific electronic databases: • ICT For Sustainable Development - A Grey Literature Archive for Development Researchers and Practitioners (http://depts.washington.edu/ict4d/) • World Information Access database (http://www.wiaproject.org/ict4d/)
Website of relevant organisations: • Department for International Development (http://www.dfid.gov.uk/, http://www.research4development.info) • The International Development Research Centre (IDRC) (http://www.idrc.ca) • International Institute of Communication and Development (IICD) (http://www.iicd.org/) • ICT4D Collective (www.ict4d.org.uk) • Eldis (http://www.eldis.org/) • infoDev (http://www.infodev.org) • UNESCO (http://www.unesco.org)
Relevant ICT4D journals: • Information Technologies and International Development (ITID) • Electronic Journal of Information Systems in Developing Countries • Information Technology for Development • African Journal of Information and Communication • International Journal of Education and Development Using Information and Communication Technology • Asian Journal of Communication • Journal of Health Informatics in Developing Countries • Information Development

- International Journal on Advances in ICT for Emerging Regions
- African Journal of Information & Communication Technology

Source: ICT4D Journal Impact Table from Richard Heeks, http://ict4dblog.wordpress.com/)

Relevant Development journals

Source: Development Studies Journal Ranking Table from Richard Heeks, http://ict4dblog.wordpress.com/):

- World Development
- Journal of Development Studies
- Oxford Development Studies
- Development Policy Review
- Studies in Comparative International Development
- Sustainable Development
- European Journal of Development Research
- Development and Change
- Information Technology for Development

Information Technologies and International Development

Relevant Management of Information Systems journals:

- MIS Quarterly
- Information Systems Research
- Communications of the ACM
- Management Science
- Journal of Management Information Systems
- Decision Sciences
- Harvard Business Review
- Sloan Management Review
- IEEE Transactions
- European Journal of Information Systems
- Journal of Strategic Information Systems

Source: MIS Journal Rankings, Association for Information Systems, http://ais.affiniscape.com/displaycommon.cfm?an=1&subarticlenbr=432

(Note: journals dealing with Artificial Intelligence have been omitted.)

Annex C: Origin of Reviewed Publications

	Source	**Search terms**
1	ICT Development library	Partnership
2	Google scholar	ICT4D and multi-stakeholder ICT4D and multi-stakeholder and partnership
	Google	ICT4D and multi-stakeholder and partnership (PDF search)
3	Google	ICT4D and partnership
4	Google	ICT4D and partnership
	ITID	Stakeholder
5	InfoDev website	Partnership
6	Google scholar	ICTD and multi-stakeholder
7	Google scholar	ICT4D and multi-stakeholder
8	Google	ICT4D and PPP
9	Information Technology for Development	Stakeholder
10	ICT Development library	Partner
11	Google scholar	ICT4D and partnership
12	IDRC	ICT and public-private
13	IJEDICT	Partnership (search in abstracts)
14	Information Technology for Development	Stakeholder
15	Google	ICT4D and PPP ICT4D and public-private
16	Google Scholar	ICT4D and public-private
17	InfoDev website	Partnership
18	Google Scholar	ICTD and partnership
19	Google Scholar	ICTD and public-private ICTD and multi-stakeholder

20	Google Scholar	ICT4D and multi-stakeholder
21	Google Scholar	ICTD and partnership ICT4D and public-private ICTD and public-private
22	Google	ICT4D and PPP
23	IICD website	Partnership
24	InfoDev website	Partnership
25	Google Scholar	ICT4D and partnership ICT4D and public-private ICT4D and multi-stakeholder
	Google	ICT4D and partnership
26	Eldis website	ICT and partnership
27	Suggested by external review panel	-
28	Google Scholar	ICT and public-private ICTD and public-private
	Google	ICT4D and partnership
29	Google	ICTD and partnership ICTD and public-private
	World Development	ICT and partnership
30	Google Scholar	ICT4D and public-private
31	Google Scholar	ICTD and public-private ICTD and multi-stakeholder
32	IJEDICT	Partnership (search in titles) Partnership (search in abstracts)
33	Information Development	Partnership Partnership (search in titles) Partnership (search in abstracts)
34	Eldis website	ICT4D and partnership
35	ISI Web of Knowledge	ICT and partnership
36	IJEDICT	Stakeholder (search in abstracts)
37	Google	ICT4D and PPP
	University of London Research Library Services	ICT and public-private

	Eldis website	ICT and public-private
38	Eldis wesbite	ICT and partnership
39	IDRC website	ICT and partnership
40	Google Scholar	ICT4D and public-private
41	Suggested by external review panel	-
42	Google	ICT4D and multi-stakeholder and partnership (PDF search)
43	COPAC National, Academic and Specialist Library Catalogue	ICT4D and partnership ICT4D and public-private
44	Google Scholar	ICT4D and multi-stakeholder and partnership
	ISI Web of Knowledge	ICT and partnership
45	Suggestion external review panel	-
46	Google Scholar	ICT4D and public-private
47	Google Scholar	ICT4D and partnership
48	Google	ICT4D and multi-stakeholder and partnership (PDF search)
49	British Library catalogue	ICT and partnership
	ISI Web of Knowledge	ICT and partnership
50	Google Scholar	ICT4D and partnership ICT4D and stakeholder ICT4D and public-private ICT4D and multi-stakeholder ICT4D and multi-stakeholder and partnership
	Google	ICT4D and partnership ICT4D and multi-stakeholder and partnership (PDF search)
	ICT4D Collective website	Partnership
	UNESCO website	ICT and partnership
51	Google Scholar	ICT4D and partnership ICT4D and multi-stakeholder
52	UNESCO website	ICT and partnership
53	Google Scholar	ICT4D and partnership
	Google	ICT4D and partnership

	COPAC National, Academic and Specialist Library Catalogue	ICT4D and partnership
	Eldis website	ICT4D and partnership

Annex D: Search Terms Used

Proposed in the review protocol	***Used in reality***
• ICT4D, ICT or ICTD • Partnership • Private sector • Civil Society • Government • Stakeholder • Collaboration • Success • Failure • Poverty reduction • Key lessons	• ICT4D, ICT, TIC4D, ITD or ICTD • Partner(ship) • Public-Private • PPP • (Multi-)stakeholder

Annex E: Review Table

Paper title:
Brief summary of the paper (1-2 sentences):

Paper classification

1	**Type of material and authors:** Book (sole author/ edited)/ Book chapter/ Journal/ Conference paper/ Report (Donor report/ Project delivery report/ Civil society, etc.)	
2	**Geographical continent and country:** Africa/Latin America/Asia and country	
3	**Sector:** Health/Education/ Governance/ Agriculture-rural development/ Business-SME-Entrepreneurship, etc	
4	**Type of ICTs:** Television/ Radio/ Mobile phone/ Computer/ Telecentre/ Internet, etc.	
5	**Research methodology:** Quantitative/ Qualitative/ Anecdotal/ Case study/ Review/ Synthesis, etc.	
6	**Type of intervention:** Pilot implementation/ research project/ testing technology/ full scale roll out, etc.	
7	**Type of partners involved (and whether explicit about actual type of partnership):** Private sector/ Civil society/ Recipient governments/ Donor governments/ Multilateral donors/Universities/ Research Institutes/ Foundations, etc.	
8	**Number of partners involved:**	
9	**Percentage paper explicitly on partnership:**	
10	**Confidence about rigour on which statements on partnerships**	

	are based (scale 1-5, 1 = no confidence, 5 = great confidence) **What kind of evidence is used** (references/case studies/primary experiences)**?**	
11	**Does it discuss motivations for partnership?:**	
12	**Does it discuss success/failure factors of partnerships?:** Success only/ failure only/ success and failure	
13	**Development paradigm:** Economic growth/ social justice/ access/ freedom, etc.	

Structured Content Extraction (10-750 words per question)

1	**Which success factors of partnerships are discussed:** (search terms: success/'sustainab')	
2	**Which failure factors of partnerships are discussed:** (search terms: failure /'sustainab')	
3	**What does the publication discuss about the partnerships process/set-up/roles/modus operandi?** (search terms: partner/ collaboration/ PPP/ MSP/ role/ cost/ funding/ conflict/ power/ gender)	
4	**Was their progress towards the intended development outcomes? How did this relate to the partnerships?**	
5	**What other intended or unintended impact of the partnership is discussed?** (search terms: progress/impact/outcome/result)	
6	**Questions/concerns about partnerships arising from reading the paper?** (niggling doubts/ reading between the lines)	
7	**Other relevant comments or quotes:**	

Annex F: Protocol Review Panel

Name	Organisation	Expertise
Sarah Earl	The International Development Research Centre (IDRC)	Evaluation
Professor Robin Mansell	London School of Economics	ICT4D
Professor Judy Sebba	School of Education, University of Sussex	Systematic reviews and use of ICT in education

Annex G: Bibliography Advisory Panel

Name	**Organisation**
Rinalia Abdul Rahim	Compass Rose
Vijay Pratap Singh Aditya	Ekgaon Technologies
Ken Banks	Frontline SMS
Robert Davison	City University of Hong Kong
Laurent Elder	The International Development Research Centre (IDRC)
Adrian Godfrey	Cisco Systems
Anita Gurumurthy	IT for Change
Shirin Madon	London School of Economics
Kentaro Toyama	Microsoft Research
Eduardo Villanueva	Pontifica Universidad Católica del Perú
Alex Wong	World Economic Forum

Annex H: Draft Report Review Panel

Name	Organisation	Expertise
Professor Robin Mansell	London School of Economics	ICT4D
Professor Judy Sebba	School of Education, University of Sussex	Systematic reviews and use of ICT in education
Dr Mark Thompson	Judge Business School, University of Cambridge	ICT4D
Dr Isabel Vogel	DFID	Systematic reviews and knowledge management

Annex J: Review Team

Name	Role	Email
Dr Marije Geldof	Research Fellow	m.geldof@rhul.ac.uk
Dr David J. Grimshaw	Research Co-ordinator	d-grimshaw@dfid.gov.uk
Dr Dorothea Kleine	Principal Investigator	dorothea.kleine@rhul.ac.uk
Prof. Tim Unwin	Principal Investigator	tim.unwin@rhul.ac.uk

Marije Geldof has a multidisciplinary background of a PhD in Human Geography, specialising in Information and Communication Technologies for Development (ICT4D), combined with a MSc in Artificial Intelligence. Her PhD explored the role of ICTs in the lives of low-literate youth in Ethiopia and Malawi. Furthermore, Marije has over 6 years' experience with the project management and implementation of European Union funded projects. She has been a trainee at the European Commission's Directorate General Information Society and worked for the project management of an EU funded project with 26 partners called SIMDAT.

David J. Grimshaw is Head of International Programme: New Technologies at the Schumacher Centre for Technology and Development, Practical Action and Senior Research Fellow with the Department for International Development. David is a Visiting Professor in ICT4D at Royal Holloway, University of London. He was previously at Warwick Business School, University of Warwick, University of Leeds, and Cranfield School of Management. He has published many papers in academic journals, international conferences and the professional press. His main expertise is in the areas of geographical information systems, ICTs for development and the role of new technologies in development. He led a research project on knowledge sharing with the 'First Mile' and recently completed work on podcasting in Peru, Sri Lanka, Nepal and Zimbabwe.

Dorothea Kleine is Lecturer in Geography at Royal Holloway, University of London. After a PhD at the London School of Economics she was a Research Associate at Cambridge University before coming to Royal Holloway. She has done research and written on ICT4D, well-being and the capability approach; technology, Fair Trade and

ethical consumption; e-business and e-procurement. She has worked in extensive action research partnerships for the EU Met@Logo project (2003-2006) for e-government in Latin America (11 different partners) and was Project Manager for the EPSRC Fairtracing project (2006-2009, 5 partners). She has been consultant/advisor to EuropeAid, the German Federal Development Agency (GTZ), InWent, as well as to private companies, community groups and NGOs. She teaches social science research methods and research ethics at postgraduate level. 2004-2007 she served as Managing Editor to the *Journal Information Technologies and International Development*.

Tim Unwin is UNESCO Chair in ICT4D and Professor of Geography at Royal Holloway, University of London. He has written extensively on ICT4D, particularly from the perspective of partnerships in an African context, and also has practical experience in delivering partnerships through his role as leader of the UK Prime Minister's Imfundo: Partnership for IT in Education (2001-2004), as Director and then Senior Advisor of the World Economic Forum's Partnerships for Education initiative with UNESCO (2007-2010), and also through DelPHE and EDULINK funded partnerships with African higher education institutions. He has particular interests in the ways in which ICTs can be used by people with disabilities and street children to enhance their lives.

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