Research Article

Paying Per Diems for ICT4D Project Participation: A Sustainability Challenge

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Abstract

The article highlights the contradictory role per diem payments play in swiftly attracting local participation in ICT for Development (ICT4D) projects, while undermining long-term capacity building and sustainability with such efforts. We discuss sustainability challenges endemic to ICT4D projects in light of our case study findings from a mobile phone–based intervention in a public health management information system (HMIS) in Malawi. We explore these challenges at multiple levels of analysis by drawing on the neo-institutional notion of "institutional logics." For practitioners and policy makers, the article offers suggestions on how to counter some of the pitfalls associated with the use of per diems to incentivize ICT4D project participants. The study contributes to the institutional logics perspective by exploring empirically the intricate interdependence between two mutually reinforcing, yet seemingly incongruent institutional logics of development project impact and aid entitlement.

1. Introduction

Long-term sustainability is a challenge with ICT for Development (ICT4D) across focus areas such as tele-centers, education, agriculture, and health care. Simply put, *sustainability* refers to an ICT4D intervention's ability to work in practice, over time, in a given setting. Many ICT4D interventions in health information systems have been deemed unsustainable (Braa, Monteiro & Sahay, 2004; Heeks, 2006; Littlejohns, Wyatt & Garvican, 2003) due to underdeveloped infrastructure (Gordon & Hinson, 2007), limited duration of donors' financial support, technical bias of projects (Ali & Bailur, 2007), lack of alignment of interests and responsibilities among stakeholders (Kimaro & Nhampossa, 2005) and a "pilot project" orientation (Lucas, 2008; Sanner, Roland & Braa, 2012).

The term "capacity building" has long been used to describe efforts to enhance local governments' uptake of ICT4D innovations and address the tendency for interventions to generate external dependency and their inability to sustain the project. But if we hold that capacity building is the crux of sustainability, then why are sustainability challenges still so prevalent in the ICT4D field? We contend that capacity building and sustainability challenges are not easily resolved within the scope of a single ICT4D project. To understand these challenges we need to lift our gaze and pay attention to the dynamics of the broader ICT4D institutional landscape and development interventions.

For more than half a century, interorganizational arrangements have been cultivated to guide development collaborations among donors, implementation partners, nongovernmental organizations (NGOs), and developing world (public sector) recipients. Often such efforts have persisted despite asymmetric power relations, cultural differences, resource inequalities, political tensions, and underlying conflicts of interests. Although the experiences and strands of reasoning that various stakeholders draw on to inform and legitimize

participation in development projects differ (Jensen & Winthereik, 2013), the players have been able to arrive at organizational forms (e.g., collaborative networks and partnerships) and practices (e.g., workshops) that mutually satisfy short-term expectations (Jordan Smith, 2003).

Inasmuch as the transfer of skills to master and maintain ICTs locally is essential, capacity-building efforts on the ground are too often equated with "training seminars" and "workshops" (Jordan Smith, 2003; Pfeiffer, 2003; Swidler & Watkins, 2009). In practice, ICT4D entails measurable interventions often centered on the conduct of capacity-building workshops with associated monetary incentives such as per diems, payment for performance, subsidized travels, and access to project equipment and resources. *Per diem* is Latin and translates to "for each day." It is a fixed daily allowance paid by organizations (historically Western) to cover the living expenses incurred by employees' work-related travels. Per diems are traditionally used to mitigate transaction costs involved with the creation of expense reports for reimbursement. The use of per diems in development projects became more commonplace during the 1970s to compensate for incurred travel costs and expenses associated with local participation.

Pfeiffer (2003) reports on the competitive use of per diems to garner project participation and support in Mozambique's health care sector. He notes that per diem rates paid by donors skyrocketed during the 1990s. This resulted in a situation where one week of per diems yielded higher pay than a month's salary in the public health services. At present, the use of inflated per diems has evolved into *perdiemitis:* where "[t]he players plan their actions around the primary goal of acquiring per diems, rather than of effecting changes among the publics targeted by their intervention" (Ridde, 2010, p. 2). As a result, the wrong people participate in project workshops and too many workshops are held at the wrong locations for too high a cost (Pfeiffer, 2003). Although a few studies pointed at these challenges with development projects more than a decade ago (e.g., Jordan Smith, 2003; Pfeiffer, 2003), inflated per diem payments remain prevalent (Søreide, Tostensen & Skage, 2012).

Malawi, a small landlocked country in sub-Saharan Africa and the empirical setting of our case study, has seen a vast upsurge in mobile phone–based ICT4D interventions in health (or mHealth) over the last few years. In particular, many mHealth pilot studies take place at the fringes of the health system to mobilize communities. Consequently, understaffed and sparsely resourced local authorities struggle to harmonize and monitor project activities. Worse yet, a plethora of ICT4D projects with associated monetary incentives threaten to undermine long-term reforms to strengthen national health management information systems (HMIS). The challenges briefly outlined here are interconnected and in part institutional and they span multiple levels of analysis.

We consider *institutions* as structures of social order that inform the behavior of individuals. At the same time, institutions are socially constructed and constituted by the actions of individuals and organizations (Berger & Luckmann, 1991). The neo-institutional notion of "institutional logics" offers a fruitful venue to understand the unfolding of complex social phenomena across multiple levels of analysis as it links individual agency, cognition, and behavior to socially constructed institutional practices and rule structures (i.e., the rules of the game). We draw on this perspective to identify and discuss the short-term (positive) and long-term (negative) consequences of the interplay between two institutional logics that we refer to as *development project impact* (i.e., the swift production of quantifiable intervention results) and *aid entitlement* (i.e., exploitation of development project incentives to top up meager civil servant salaries). In particular, we examine the central role per diems and simplistic short-term ICT4D impact evaluation practices play in the continuous reproduction of these two institutional logics. Theoretically, our investigation contributes to the understanding of institutional stability within an organizational field (e.g., ICT4D) by highlighting the mutually reinforcing interplay between a pair of seemingly incongruent institutional logics.

The next section presents our theoretical framework. Our case study approach to data collection and interpretive data analysis is accounted for in section 3. Section 4 presents the empirical case of a mobile phone–based ICT4D intervention at subdistrict health facilities in Malawi. Finally, section 5 discusses our findings and offers some concluding remarks and implications for further research.

2. Theoretical Framework: Institutional Logics at Play in Organizational Fields

Our study of ICT4D capacity building and sustainability challenges is informed by neo-institutional theory in general and by institutional logics specifically. Seminal works on neo-institutional theory (e.g., Meyer & Rowan, 1977; Zucker, 1977) highlight the role of culture and cognition to explain institutional stability through organizational conformity to societal requirements for *legitimacy.* Rather than being the mere reflections of individual and organizational actors' rational choices, institutions precondition actors' sense-making choices with "regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life" (Scott, 2008, p. 56).

Organizational Fields

DiMaggio & Powell (1983) extrapolate Meyer and Rowan's (1977) focus on organizations' mimetic and habitual behavior from the societal level to the level of organizational fields that include "those organizations that, in aggregate, constitute a recognized area of institutional life: key suppliers, resources, product consumers, regulatory agencies and other organizations that produce similar services or products" (DiMaggio & Powell, 1983, p. 148). An organizational field may be considered a set of contextual factors or influences that affect organizational structures and processes. A key characteristic of organizations operating within the same organizational field is that they tend to develop similar structural and cultural environments.

We can think of *development interventions* as an organizational field that consists of subfields such as ICT4D. In turn, ICT4D has an identifiable set of influential key funders (e.g., World Bank, PEPFAR, International Monetary Fund, and national agencies such as Norad), technologies (e.g., ICT innovations and software packages), implementers (e.g., technical assistants and NGOs), consumers (e.g., governmental organizations in developing countries), and regulatory agencies (e.g., the World Health Organization and the United Nations). Through complex dialectics these players have established a set of norms (e.g., local ownership, participation, harmonization, and sustainability), quantifiable evaluation criteria, and shared practices. Some of the field-level organizing principles have even been formalized in development guidelines such as the Paris Declaration and Accra Agenda for Action.[1]

Institutional Logics in Contestation and Interdependence

DiMaggio and Powell (1983) mainly focused on explaining prescribed and mimetic organizational behavior in response to cultural rationalization. In contrast, the concept of "institutional logics" grew out of studies trying to explain contradictory social practices in organizations (Alford & Friedland, 1985; Friedland & Alford, 1991). Central to institutional logics is the idea that actors' decisions result from both individual agency and the influence of institutions from which they draw legitimacy and identity (Friedland & Alford, 1991; Jackall, 1988). The institutional logics approach shares with DiMaggio and Powell (1983), Meyer and Rowan (1977), and Zucker (1977) a concern with how cultural rules and cognition shape and legitimize organizational structures. However, institutional logics address the critique of earlier neo-institutional works' narrow focus on organizations' mimetic behavior (Hasselbladh & Kallinikos, 2000). The institutional logics perspective is sensitive to the interplay of *differentiated* institutional logics and the effects this interplay has on individuals and organizations in wider institutional environments (e.g., industries or organizational fields).

Building on the ideas of both Jackall (1988) and Friedland and Alford (1991), Thornton and Ocasio define institutional logics as "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality" (1999, p. 804). According to this definition, institutional logics provide a link between individual agency and cognition and socially constructed institutional practices and rule structures. Institutional actors carry "cognitive maps" for producing and reproducing the logic within a specific institutional environment and provide "meaning to their activities" (Scott, Ruef, Mendel & Caronna,

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1. *The Organisation for Economic Co-operation and Development (OECD) provides a description of the Paris Declaration and Accra Agenda for Action. See http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm*

2000, p. 20). In addition, institutional actors invoke, juxtapose, and combine the symbols and practices of multiple institutional logics to produce new interpretations and meanings which may effectuate institutional change (Friedland & Alford, 1991, pp. 232, 248, 251–252; Holm, 1995; Zilber, 2002).

Institutional logics also highlight the interplay between interdependent societal levels that involve "individuals competing and negotiating, organizations in conflict and coordination, and institutions in contradiction and interdependency" (Friedland & Alford, 1991, pp. 240–241). Actors' sources of rationality change as they draw on different institutional logics residing at the level of organizational fields, domains, or industries, which, in turn, can be traced to sets of expectations of human and organizational behavior associated with institutional orders at the level of society: the state, the professions, the corporations, the family, the communities, and the market.

Practices are the key conceptual linkages between institutional logics and intra-organizational processes (Thornton, Ocasio & Lounsbury, 2012). Multiple practices may coexist within an organization or an organizational field and be interdependent (Pache & Santos, 2010). Consequently, adoption or enactment of a new practice or modification of an existing practice often has ramifications for other practices in an organization (Thornton et al., 2012; Zilber, 2002). These interdependencies are generated from social interactions that involve both communication and resource flows, thus shaping both the vocabularies and material subsistence of involved actors. At the organizational level, institutional logics provide the formal and informal rules of action, interaction, and interpretation that guide and constrain decision makers in accomplishing the organization's tasks and in obtaining social status, credits, penalties, and rewards in the process (Ocasio, 1997).

Despite early recognition in the seminal article by Friedland and Alford (1991), the explicit exploration of *interdependencies* among institutional logics has been overshadowed by an emphasis on *competing* logics and the continuous *contestation* of meaning in studies that take an organizational field-level perspective (e.g., Currie & Guah, 2007; Lounsbury, 2007; Marquis & Lounsbury, 2007; Reay & Hinings, 2009). Currie and Guah (2007) explore how competing institutional logics within the organizational field of health care jeopardize the smooth implementation of a national program for IT in the UK. Their study reveals that the implementation of an information system infused with the logic of "patient choice" is consistently challenged by unresolved tensions with the professional logic of self-regulation and the managerial logic of efficiency. Similarly, Sahay, Sæbø, Mekonnen, and Gizaw (2010) explore the tensions that arise between a highly centralized paper-based health management information system in Tajikistan and the introduction of a computerized software with values of decentralization and local empowerment inscribed into the implementation strategy. At the health districts the institutional logic guiding the implementation found support in the informal practices that circumvent the rigidity of the Soviet-legacy information system. However, the contestation between institutional logics caused a stalemate when the software was implemented at higher levels of the health ministry.

Although interdependence between logics is an inherent assumption with the institutional logic perspective, few empirical studies have highlighted these reinforcing dialectics between logics. A recent study by Hayes & Rajão (2011) is sensitive to both synergies and contestations among sovereignty, sustainability, and economic institutional logics as they are upheld in different ways through the historical monitoring of activities in the Amazon rainforest with the use of geographical information systems (GIS). Their analysis highlights that institutional logics are always provisional and relational. In this article, we draw on the notions of organizational fields and institutional logics to discuss how short-term project impact assessments and the prevalent use of ICT4D project incentives such as per diems preserve and are preserved by the interdependence between two seemingly incongruent institutional logics.

3. Methods

This article draws upon an interpretive case study approach informed by guidelines put forth by Klein and Myers (1999) and Walsham (1993, 1995). We draw on an interpretive tradition to make sense of peoples' behaviors and their justifications in relation to participation in a mobile phone–based ICT4D intervention in Malawi.

Context of the Study and Researcher Roles

The study grew out of the authors' close involvement with an international intervention research project called the Health Information Systems Programme (HISP). HISP activities primarily centered around the design and deployment of the District Health Information Software (DHIS2) in more than 40 countries in Africa, Asia, and Latin America (Braa et al., 2004; Braa, Hanseth, Heywood, Mohammed & Shaw, 2007). DHIS2 is a generic web server–based solution for collection, validation, analysis, and presentation of aggregate statistical data, tailored to integrated health management activities.

The empirical material was collected through the first author's involvement with the implementation of a suite of mobile phone–based functionalities, called DHISm, for routine health data reporting at health facilities in Malawi. DHISm permits data reporting through mobile phones and extends computer-based DHIS2 implementations. The second author has also held various roles in the ICT4D landscape over the last decade, including WHO's now-disbanded Health Metric Network (HMN), aimed at mobilizing development partners to strengthen health information systems in developing countries (HMN, 2008). While this article builds upon research that was carried out in Malawi, both authors have also been involved with similar ICT4D projects in other developing countries. Most relevant here is the conduct of workshops and formal training sessions carried out on behalf of either HISP or HMN/WHO.

Data Collection and Data Analysis

Between September 2011 and mid-2013, the primary author visited Malawi three times for research and DHISm implementation purposes. Each visit lasted for about one month. Initially the study focused on HMIS-related practices and information flows among health facilities, district health offices, development partners, and NGOs in Malawi. This baseline investigation was deemed crucial to the successful implementation of DHISm. Full-day observational visits were made to nine subdistrict health facilities and repeated visits were made to the district health office involved with the DHISm implementation. This baseline study resulted in ad hoc field notes, photos, and face-to-face interviews with 20 informants in their work environments. Part of this data was later interpreted in light of the subsequent refocus of the study (discussed below).

In addition to DHISm project management activities, the first author participated (as a trainer) in three end-user training sessions and in five focus group evaluation meetings, where users' experiences with the DHISm intervention and motives for project participation were discussed. A recurring theme in the training sessions and focus group discussions was the importance of per diem payments to motivate project participation. As the implementation progressed, potential challenges to the uptake of DHISm mobile reporting and to other nondomestically funded HMIS strengthening activities in Malawi were perceived to stem from disparities between stakeholders' expectations for which the payment of per diems served as a mediator. This led to a shift in the study's focus and the reinterpretation of some of the first author's own activities such as the facilitation of DHISm pilot buy-in within the Ministry of Health. The new and more explorative focus of the study informed the scrutiny of a decade's worth of policy documents and HMIS status reports that revealed sustainability challenges with ICT4D initiatives in the public health sector. Supplementary data that informs the study includes face-to-face discussions, email exchanges, and Skype conference calls with fellow DHISm implementers in Malawi, DHIS2 and DHISm developers in Norway and Vietnam, and HISP global project coordinators.

Data analysis was based on transcripts from audio-recorded interviews and focus group discussions, field notes that document the primary author's interpretation of behaviors and events pertaining to DHISm project participation, and studies of the above-mentioned official documents. The analysis was carried out first by the primary author alone and later by both authors, as follows. First, the empirical material was sifted for quotes signifying preferred courses of action (i.e., practices) in relation to engagement with ICT4D projects. If discernible, these behaviors were then codified into legitimacy claims, i.e., the underlying assumptions that justify certain behaviors. The theoretical framework presented in section 2 helped us shape the analysis at an early stage, particularly through the notion of "legitimacy claims," which is a central notion to the institutional logic perspective. Legitimacy claims were paired with empirically identified practices and broader strands of reasoning

(i.e., institutional logics). As the analysis progressed we focused on tracing interdependencies between two discernible institutional logics of development project impact and aid entitlement at the level of projects, organizations, and the ICT4D field.

Qualitative research that touches upon personal and sensitive issues, like peoples' attitudes toward the use of ICT4D per diems, may have inherent limitations. Furthermore, the study this article reports on was not initially concerned with per diems or the way ICT4D projects are conducted. This article is, rather, the product of the primary author's deep involvement with the DHISm implementation in Malawi and reflection on emerging trends in the empirical data. As a limitation, the data pertain only to one implementation in one public sector in one developing country. In favor of our findings, the study's ad hoc research design may have helped reduce potential study barriers as the topics discussed in this article were initially brought up voluntarily by informants.

4. Paying Per Diems for ICT4D Project Participation

This empirical section starts with a brief overview of HMIS restructuring activities in Malawi. These activities serve as the backdrop for the mobile phone–based DHISm intervention from which we draw our findings. Next, we reflect on the *development project logic* (subsection 4.2) that informs the funding arrangements and management of ICT4D projects such as DHISm. We then look at how local project participants rationalize their roles in such interventions by drawing on the *aid entitlement logic* (subsection 4.3). We do this by providing rich accounts of how these two logics interplay during the implementation of DHISm at subdistrict health facilities in Malawi (subsection 4.4). We focus the empirical discussion around perceptions concerning the use of per diems to attract project participation. We conclude this section with a summary of the empirical findings (subsection 4.5).

4.1. Empirical Setting: HMIS Strengthening in Malawi

A well-functioning HMIS is crucial to effectively administer scarce health care resources, address epidemics, inform policy making, and measure the impact of donors' targeted health interventions. In 1999 the Malawi Ministry of Health conducted an assessment that revealed the national HMIS' inability to provide timely and reliable information to concerned parties, including district health management teams (Chaulagai et al., 2005; Ministry of Health, 2003). In an effort to strengthen collaboration between donors' vertical programs and facilitate decentralized decision making, the Ministry endorsed the establishment of an integrated and comprehensive HMIS. The computerized District Health Information System (the first generation of DHIS) was identified and implemented at the district level and higher organizational levels from January 2002.

One decade later an HMIS assessment revealed that fragmentation had crept back into the system. This had happened despite donors' explicitly stated harmonization strategies. For example, the World Health Organization's Country Cooperation Strategy for Malawi 2008–2013 stated that the WHO will guide "planning and resource allocation through alignment with national health priorities and harmonization with other development partners" (WHO, 2009, p. vii). As a continuation of the harmonization strategy, the Ministry decided to upgrade the DHIS from stand-alone installations running independently in every district to a centralized approach with a national Web-based DHIS2 server.

Overall, migration to the Web-based DHIS2 client server setup has been ineffective, partly because the Ministry lacks sufficient in-house IT expertise to take on the management of the national DHIS2 server, system customization, end-user training, and other mundane IT tasks. At the time of writing, DHIS2 training has been conducted for all district health management teams in Malawi, but HISP and other implementation partners have been presented with the Ministry's need for assistance in the provision of refresher training to DHIS2 end users including donors' various health program coordinators.

4.2. Development Project Impact Logic: Producing Swift and Measurable Results

Implementation of DHIS2 and DHISm involves both international implementation agencies and funding donors who operate within the development intervention landscape. We first look at the overarching logics informing the behaviors of these global development actors when it comes to project realization.

The sustainability of ICT4D interventions in public health has been undermined by, among other factors, the

lack of coordination among interventions. Few technical innovations are extended and maintained across projects, and coordination and cooperation efforts are not assessed and rewarded. Anecdotally, the primary author visited a subdistrict health facility in Malawi that had four solar panels installed on its rooftop—one for each ICT4D innovation put in place by different donors' initiatives over the last few years. Only one of these innovations was still in use, a touch screen–based system for registering outpatient data for pregnant women. For the rest of the ICT innovations, facility staff did not know whom to contact for technical assistance and maintenance.

ICT4D projects must make themselves attractive to a few powerful international donors by demonstrating clearly delineated objectives, with quantifiable costs and impact projections to be realized within a fixed (typically short) time. Consequently, showcase projects often focus on isolated targets and report on simple input and output variables such as dollars spent and number of people trained, rather than project (learning) outcomes and interproject collaborations, which are harder to quantify and compare. A preoccupation with the production of measurable and quantifiable project results within a limited time frame is what we refer to as the *development project impact logic.* It is no surprise that the development project impact logic inherits values and metaphors (e.g., growth, impact, and scaling up) from the higher-level institutional logic of the market, since the historical discourse on development has been dominated by economists. The development project impact logic conflates corporate-patriarchal elements of centralized international development planning (e.g., development declarations) with the logic of the market. This centralized monitoring and evaluation (market micromanagement) performed by a few influential and uncoordinated development donors translates into fragmented ICT4D interventions put in place by development implementers and NGOs on the ground.

In response to these well-known harmonization challenges, the international community endorsed the Paris Declaration on Aid Effectiveness in 2005, with more than 100 signatory countries committing to harmonize development intervention work and assist developing country governments to formulate and implement their own development plans. However, this recognition has had limited influence on donors' funding modalities, and ICT4D efforts remain uncoordinated and fragmented nearly a decade later. Organizations involved with ICT4D implementation (e.g., HISP) are concerned with their own expansion and growth as well as the local realization of ICT4D projects. Implementing DHIS2 or DHISm in yet another country is a step toward sustaining HISP as a collaborative intervention network and generating funding for more projects (Braa et al., 2004).

4.3. Development Project Impact Logic Meets Aid Entitlement Logic: Attention Sold to the Highest Bidder

The development project impact logic has adverse consequences in developing countries. In this subsection we look at how this manifests itself in relation to health management information systems in Malawi. In particular we focus the empirical discussion on perceptions of per diem payments to ICT4D project participants.

Initially the DHISm implementation focused on two important data collection forms for mobile phone–based reporting from 17 health facilities in one district. The aim was to assist subdistrict health staff to collect and report health information. In a critically resource-constrained environment, the health workers have adopted pragmatic approaches to a range of health system and health information system limitations and challenges. Historically, the completeness and timeliness associated with paper-based reporting of routine data collection forms to district health offices have been compromised by seasonal challenges associated with muddy roads, fuel shortages, occasional inadequate supplies of stationery, or simple neglect. Staff at health facilities explained that when they travelled to the district office to deliver reports, their travel costs were neither refunded nor subsidized, thus workarounds and improvisations were commonplace. For instance, facility health workers would send reports with passing ambulances or submit their reports when going to town to collect salaries.

Government-paid salaries[2] in some debt-burdened developing countries have been capped and consequently diminished in relation to civil servants' income from access to "dollar projects" (Pfeiffer, 2003). This has, in turn, strengthened the need for civil servants to secure opportunities for participation in donor-funded

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2. Under the Bingu wa Mutharika administration, Malawi introduced the Zero Deficit Budget, with the aim of financing all recurrent expenditures using domestic resources.

workshops and gain access to project resources. Leveraging one's positions in hierarchical power structures to obtain a share of the monetary incentives associated with development projects is condoned. Søreide et al. report on the pervasive use of per diems in Malawi, Tanzania, and Ethiopia and argue that it could even be seen as foolish or immoral not to exploit such arrangements to cater for "one's own," as per diems "form an entrenched, informal component of the system" (2012, p. 52). We refer to this institutional logic as *aid entitlement logic.* Aid entitlement logic allows government employees to make sense of their conflated roles as underpaid, overburdened civil servants, kinsmen, and development project participants. In essence, meagrely paid civil servants legitimize opportunistic behaviors in relation to dollar projects by drawing on the aid entitlement logic, which incorporates a sense of kinship and community that transcends bureaucratic government structures.

One implication of the two logics presented is that participation at workshops depends on the payment of a per diem—it has become an expectation. During the initial stages of the DHISm project, we consulted with the officers in charge at a district health office and two district hospitals. Although these people would not be directly involved with the DHISm implementation, they advised us on the conduct of our intervention. The topic of per diems came up and one senior district hospital clinician explained: "If you want them [workshop participants] to take you seriously, you should pay about $25 like the UN guys. They are the most serious. You also need to provide some snacks and soft drinks" (Malawi, 2011).[3]

The quotation illustrates two points. First, per diems are an entrenched component of ICT4D, to the extent that well-meaning bystanders feel compelled to guide new projects on how to be taken seriously. Second, attention can be bought, and the perception is that serious initiatives pay higher rates. We followed the advice of providing chips and soft drinks, but we could not afford, nor did we wish to provide, an inflated allowance for our workshop attendees. Instead we employed per diem rates of MWK 1500 (US$8 at the time), used internally by the Ministry of Health for lower-level civil servant reimbursements. However, the per diem rates employed by the DHISm team were not announced prior to conducting the training.

In retrospect, we have had discussions about per diem rates and payments internally in the project and with other members of the HISP intervention network. HISP central coordinators are full-time university professors and proponents of a pragmatic stance to ICT4D implementation. One of the HISP global coordinators reflected on the arrangement of training and per diem payments: "All the big players [i.e., WHO, UN, PEPFAR] pay per diems, so we must also do it. We can only hope that they will collaborate with us and cover per diem costs for participants in our projects" (Oslo, September 14, 2013).

This statement signals an appreciation within HISP as being confined to mimicking other interventionist organizations within the broader development landscape.

4.4. Eroding the Sustainability of Interventions

Civil servants' expectation of per diems has a malign effect on ICT4D project sustainability. What such projects seek to implement becomes associated with the accompanying monetary incentives and may erode quickly when funding runs out. For example, after years of ministerial efforts to integrate and harmonize the national HMIS, district stakeholders (district health management teams and donor program coordinators) are now supposed to meet regularly to discuss public health trends and strategize based on summary reports generated by the DHIS software. However, a district health officer reflected on the irregular conduct of district review meetings:

> We are supposed to have the analysis monthly, but due to some problems sometimes we fail, because sometimes we also need some people to join the analysis and probably they require something [per diems] at the end of the review. So if the district [management] does not [financially] support the program for the activity [monthly meeting], it fails, naturally like that. (Malawi, 2012)

Such examples could also be found at health facilities. Interestingly, informants consistently explained that health facility review meetings were commonplace about two years prior, with a World Bank–supported initiative:

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3. Details about the district names in Malawi and the exact correspondence dates have been omitted to preserve the anonymity of study informants mentioned in this article.

I think in that period we had the subsidizing donor who was funding the meetings in all facilities. So they were supposed to meet each and every month, and they were given something [per diems] to convene and some soft drinks—so it worked. But since those people left the meetings stopped immediately. (assistant statistician, district health office, Malawi, 2012)

The discontinuation of monthly data review meetings at the subdistrict health facilities in Malawi after the withdrawal of financial and expert support from the World Bank initiative points to the deep-rooted sustainability challenges of HMIS strengthening initiatives in Malawi. Initially, per diem payments facilitate a win-win situation; the participants get some allowances, and the funders quickly get to demonstrate impact back home. However, the routines instilled by donors are not necessarily institutionalized and require continued external funding. Data review meetings differ from ICT4D training and the dynamics of these meetings are not directly comparable. However, there was a clear capacity-building agenda built into the supported review meetings, which had resulted in meticulously hand-drawn graphs on subdistrict health facility walls. These graphs all had in common that they were dated two years prior.

Monopolizing Access to Per Diems

Through focus group discussions during DHISm training sessions, we learned that facility staff is presented with multiple uncoordinated initiatives by organizations that conduct training and request program-specific health summary data reports. Sometimes several initiatives target the same health facilities simultaneously.

There are focal persons who have different programs; one person being focal person for maybe various programs. Now, when it comes to reporting, it means at the end of the month he has to compile reports of different programs. Is it that he gets invested and he ignores some other reports? Sometimes we try to advise them that this is a government job and we need to share. (program officer, district health office, Malawi, 2012)

We note the use of the word "share" at the end of this excerpt, as if access to donor projects' monetary incentives is perceived by the program officer as a communal good that should be fairly distributed among colleagues. A facility health worker's elaboration further clarifies and builds on this statement.

We have come here [DHISm training] and normally, whenever there is something like this, we have got an explanation: "If I go there, I'm going to get money. If I send this one—he gets the money. No! Let me go myself!" That may be one of the issues. Maybe because of money, they say, "No, let me of course, be involved in many things because of what I'm going to get." I think that's just why he was saying we should share. (HMIS focal person, subdistrict health facility, Malawi, 2012)

The excerpts above substantiate that both the responsibility for donor programs' data reporting and the corresponding opportunities for workshop participation are treated opportunistically as a way to add to civil servants' meager salaries. Premium payments for specific reports, new ICTs put in place to handle specific program data, and the conduct of training signal the importance of a given set of health indicators. The monopolizing behavior among civil servants around ICT4D project participation, legitimized by the aid entitlement logic, challenges the sustainability of ICT4D projects. ICT4D implementers wish to train the right people, dedicated to the project's long-term goals, but people holding roles senior to those invited frequently show up at workshops. Despite the DHISm implementers' awareness of this inclination and their efforts to specify that only the subdistrict facility focal persons for the two forms identified for mobile reporting should attend training sessions, their seniors either came along with them or in the place of one of them. Other important chores (e.g., patient consultation and health facility management) may be put aside, at least for the time being, by a few well-positioned individuals who take on more donors' chores than they can realistically handle.

Currently DHISm is being scaled up to the whole district (from 17 to 44 subdistrict health facilities) and four more data collection forms have been customized for mobile reporting. Mobile reports are being submitted to the DHIS2 server and some end users have even started to report on the four new mobile Web-based forms without additional training. There are no direct monetary incentives associated with mobile reporting of the health summary data. However, subdistrict facility staff no longer need to spend a full day traveling to the district health office at their own expense or find unreliable workarounds for report submission. This convenience, we believe, is the key driver behind the current uptake of DHISm for mobile reporting.

Table 1. Institutional Logics at Play in the Organizational Field of ICT4D.

Institutional Logic	Practice	Legitimacy Claim	Implication for ICT4D
Aid Entitlement	Participate in ICT4D projects for personal financial gain	Access to donors' projects boost civil servants' meager salaries	Attention is sold to the highest bidder
	Monopolize workshop participation	Exploiting access to donor funding to maximize financial and social capital is condoned	ICT4D project participants take on more roles than they can handle
			The wrong people attend workshops and training sessions
Development Project Impact	ICT4D implementers focus on easy-to-measure objectives, such as number of workshops held	Short-term and quantifiable results permeate development harmonization	Limited coordination and sharing of technology and expertise among initiatives
	Initiatives compete for attention	Paying per diems is the surest way to attract attention	Uncoordinated projects pay inflated per diem rates

4.5. Summary of Case Study Findings

The case study findings are summarized in Table 1. The table identifies the institutional logics of *aid entitlement* and *development project impact* as they play out in the ICT4D organizational field. We have distilled these *institutional logics* from individual- and project-level *practices* (i.e., behaviors and actions) and *legitimacy claims* (i.e., justifications and rationalizations). The table also indicates the broader implications of the mutually reinforcing interplay between these two logics and the ICT4D field as a whole. Specifically, these implications translate into sustainability and capacity-building challenges that face ICT4D projects, which we discuss in the concluding section of this article.

Our primary concern is with how these two logics interact through ICT4D practices. At the project level, the two identified institutional logics are maintained by two discernable strands of actors: local ICT4D participants and external development intervention practitioners.

5. Discussion and Conclusion

This section draws on the institutional logic perspective to explore challenges both to the long-term sustainability of ICT4D interventions and to ministerial efforts aimed at strengthening weak management structures in the public services. Our analysis differs from the few existing studies concerned with the interdependency between development project evaluation criteria, and local actors' income and social capital maximizing behavior (Jordan Smith, 2003; Pfeiffer, 2003; Ridde, 2010; Søreide et al., 2012) in that it highlights how unsustainable ICT4D practices reproduce and are reproduced by the interaction between the *development project impact logic* and the *aid entitlement logic.*

We have shown empirically that by paying for attention, ICT4D projects obtain immediate responses from an understaffed health system which sooner or later will have to retract its attention to cater to other equally important tasks. For ICT4D practitioners, the number of workshops and participants are measurable indicators by which projects are evaluated. Such indicators are crucial to the funding mechanisms of international donors. In short, a few influential donors (the service buyers) face the challenge of comparing apples to oranges to calculate the return on investment across projects implemented by local NGOs and partners (the service sellers). This leads to a preoccupation with simple performance indicators comparable across projects coupled with rapid evaluation cycles to discard bad apples. In turn, this preoccupation can be tied to economic rationalizations, budgetary periods, and political election cycles in donors' home countries.

To civil servants in developing countries, workshops entail monetary incentives such as per diems that are

perceived as part of their legitimate income (Søreide et al., 2012). Jobs in the public health services are accepted on a low salary partly because the position gives promise of access to dollar projects. The irregularity of monetary incentives and the high probability that payments will end abruptly when project funding runs out (Bhattacharyya, Winch, LeBan & Tien, 2001) stimulate short-sighted and opportunistic behavior among ICT4D project participants. The payment of per diems induces civil servants to expect something extra simply for doing their regular job (Søreide et al., 2012, p. xvi) and to encourage officials in higher positions to monopolize project participation at the expense of lower-level colleagues in greater need of training (Søreide et al., 2012). Existing ICT4D practitioners' preoccupation with conducting capacity-building workshops satisfy "equally the competing priorities of international donor institutions and local actors" (Jordan Smith, 2003, p. 712), at least in the short term.

Development Project Impact and Aid Entitlement: A "Marriage of Convenience"
Over time the development project impact logic has entered into interdependence with the aid entitlement logic it has helped to foster and legitimize. We use the term "interdependency" (Friedland & Alford, 1991), as the behaviors and strategies informed by either institutional logic are justified and reinforced by the observable practices of *the others.* Civil servants expect money to perform the tasks of ICT4D initiatives, so it is necessary to pay them to produce a swift impact. Since short-sighted and competing initiatives pay inflated per diems for attention, it is condoned to hunt for roles in their projects to supplement meager civil servant salaries. Development interventionists *know* that the incentive structures they uphold through the conduct of their projects lead to unintended consequences (and the authors have played their part in this), the local participants in the ICT4D projects *know* that donors' incentive structures will prevail for future exploits, and everybody *knows* that everyone else knows, too. Yet—and this is at the heart of our contribution—the respective institutional logics of development project impact and aid entitlement are drawn on to legitimize activities and strategies (by both sides) to maintain the status quo. This situation is upheld despite international agreements and harmonization declarations to the contrary. Currently, ICT4D practitioners and project participants are able to coexist by infusing shared practices with different meanings (Zilber, 2002), while each camp continues to serve as a gateway to the attainment of the short-term goals of *the others.*

The institutional logics perspective sheds some light on the persistence of this situation as it points to the reinforcing dynamics between ICT4D practices and the institutional logics that permeate them. A strategy to alleviate these endemic challenges with ICT4D, we contend, will have to resonate at multiple levels (i.e., project, organization, and organizational field) and across camps. High-level international declarations of harmonization, albeit with positive intentions, are not directly helpful as long as ICT4D projects are evaluated on short-sighted, easy-to-manipulate (by paying for attention), project-centric targets. Institutional change is brought about not only by changing the rhetoric, but also the material subsistence that informs practices. The ICT4D field is in need of a shift toward long-term cooperation among initiatives. New project evaluation tools and reward structures need to be put in place to emphasize harmonization over short-sighted impact.

Theoretically, this study contributes to the exploration of the interplay between institutional logics at the level of an organizational field. We contend that dynamics between institutional logics are not necessarily captured as periods of institutional stability where one institutional logic dominates until it is eroded and replaced by another dominant logic, nor by the unresolved historical contestation of meaning between multiple competing institutional logics (Currie & Guah, 2007; Lounsbury, 2007; Marquis & Lounsbury, 2007; Sahay et al., 2010). Rather, we have identified an intricate interdependence between a pair of mutually legitimizing institutional logics. For lack of a better term, we refer to this dialectic relationship as a *marriage of convenience.* The result is not friction, but an accommodation of both logics in shared practices (e.g., workshops) through ICT4D projects. However, this interdependency produces detrimental and contradictory consequences for projects and the ICT4D organizational field over the long term. Similarly, comprehensive and longitudinal ministerial harmonization efforts are offset by haphazard adaptations to donors' "agenda of the day."

Implications for Capacity Building and Long-Term ICT4D Sustainability
Previous studies have pointed out that too many capacity-building workshops and training sessions are conducted to communicate commonsense messages about HIV/AIDS, family planning, and other subjects that attendants are already well aware of (Swidler & Watkins, 2009). ICT4D projects, we argue, differ from this

broader class of capacity-building efforts in that end-user training is necessary to effectively leverage novel ICTs and software packages in the workplace. However, training does not always have to involve large groups of people traveling to receive inflated per diems. To avoid such a scenario, we argue that on-the-job training is a viable option, especially for refresher training. On-the-job training also allows ICT4D practitioners to perform a reality check, identify the right people for training (if they can be found), become sensitive to participants' actual work practices, and learn how technology innovations may coexist with equipment and routines already in place.

On-site training can be more costly and it takes a great deal of effort. Sometimes it is unrealistic due to the sheer number of potential end users. In addition, on-the-job training can be perceived as unfair by trainees, who may feel they are being cheated out of legitimate allowances. This makes it particularly difficult for any ICT4D initiative that wishes to break out of the per diem race to be taken seriously. However, paying per diems for attention and being unable to discern whether participants' positive responses are rooted in a genuine interest in the ICT capabilities the project has to offer or if participants are cheering the project on only in the hopes of attending follow-up workshops are both a potential waste of resources and detrimental to ICT4D sustainability. Use of per diems to attract project participation is certainly not the only obstacle to ICT4D sustainability. Other obstacles include underdeveloped infrastructure (Gordon & Hinson, 2007), technical bias of projects (Ali & Bailur, 2007), lack of alignment of interests (Kimaro & Nhampossa, 2005), and pilot project orientation (Lucas, 2008). However, we contend that per diem is a contributing factor that has not received its fair share of attention in the literature. In addition, per diem is a complicating factor that may induce recipients to abstain from critiquing unsustainable interventions.

Finally, the Malawi Ministry of Health's HMIS strengthening is challenged by the disruptive prioritization of short-term project goals over long-term restructuring, the plethora of uncoordinated interventions, and the complicated dependencies for technical assistance. One way to strengthen the capacity of local institutions, rather than undermine them, is for donors, in close collaboration with ministerial functionaries, to establish a shared pool of not only financial resources but also technical assistance that stretches beyond the lifespan of individual projects. Close collaboration among ICT4D projects, through a shared pool of technical assistance and resources, could help cultivate public sector structures that can implement policies and harmonize ICT4D projects over time. In return, expatriate interventionists may find comfort in knowing that skilled people will be around to maintain and extend their efforts when their project time has run out.

More studies are needed on how ICT4D efforts can be evaluated in the long term, with an emphasis on interproject collaboration. We believe the institutional logics perspective, with its sensitivity to the interdependence between local practice and field-level structures, can inform further studies that take the agenda for sustainable development forward. Much of what has been discussed in this article applies to the wider organizational field of development interventions. However, we contend that ICT4D is a subfield with a particularly high prevalence of technology-centered pilot projects, feasibility studies, and proofs of concept that demand too much attention from overburdened government organizations in developing countries. ∎

Acknowledgments

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